FIRSTCARBONSOLUTIONS™

DRAFT
Environmental Impact Report
Suisun Logistics Center Project
City of Suisun City, Solano County, California

State Clearinghouse No. 2021010044

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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius (Centigrade)
°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
ACP	Alternative Compliance Plan
ACTM	Airborne Toxics Control Measure
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
AFY	acre-feet/year
AIC	Archaeological Information Center
AIRFA	American Indian Religious Freedom Act
ALUC	Airport Land Use Commission
AMSL	above mean seal level
APE	Area of Potential Effect
APN	Assessor's Parcel Number
AQI	Air Quality Index
AQMD	Air Quality Management District
ARB	California Air Resources Board
ARDR	Aquatic Resource Delineation Report
ARPA	Archaeological Resources Protection Act
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
ATCM	Airborne Toxic Control Measures
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BASMMA	Bay Area Stormwater Management Agencies Association
BAU	Business as Usual
BCDC	Bay Conservation and Development Commission
BCF	billion cubic feet
BCF/year	billion cubic feet per year
BM	Brackish Marsh

BMP	Best Management Practice
BP	Before Present
BRE	Biological Resource Evaluation
BSA	Biological Study Area
BTU	British Thermal Unit
BVOC	biogenic volatile organic compound
C^2ES	Center for Climate and Energy Solution
CA MUTCD	California Manual on Uniform Traffic Control Devices
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
Cal/ARP	California Accidental Release Prevention Program
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Occupational Safety and Health Administration
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CASQA	California Stormwater Quality Association
CBC	California Building Standards Code
CCAA	California Clean Air Act
CCCC	California Climate Change Center
CCGMMP	Contra Costa Goldfields Mitigation and Monitoring Plan
CCR	California Code of Regulations
CCTS	Central California Taxonomic System
CDFW	California Department of Fish and Wildlife
CDSD	City Development Services Director
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	chlorofluorocarbon
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH_4	methane
CHL	California Historical Landmarks
CHRIS	California Historical Resources Information System
CMP	Congestion Management Plan
CNDDB	California Natural Diversity Database

CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CNPSEI	California Native Plant Society Electronic Inventory
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
CPHI	California Points of Historical Interest
CPUC	California Public Utilities Commission
CRA	Cultural Resources Assessment
CRAM	California Rapid Assessment Method
CRHR	California Register of Historical Resources
CTS	California tiger salamander
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DBH	diameter at breast height
DD	Drainage Ditch
DPM	diesel particulate matter
DPS	Distinct Population Segment
DTSC	California Department of Toxic Substances Control
du	dwelling unit
du/acre	dwelling unit per acre
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act of 2007
EMF	electromagnetic field
EMFAC	Emission Factors mobile source emissions model
EPA	United States Environmental Protection Agency
EV	electric vehicle
FAR	floor area ratio
FAST	Fairfield and Suisun Transit
FCS	FirstCarbon Solutions
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FSSD	Fairfield-Suisun Sewer District
GHG	greenhouse gas
gpm	gallons per minute

GPS	Global Positioning System
GWh	gigawatt-hours
GWh/y	gigawatt-hours per year
GWP	global warming potential
HAP	Hazardous Air Pollutants
HBC	Helm Biological Consulting
HBG	Huffman-Broadway Group
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HFC	hydrofluorocarbon
HI	hazard index
HRA	Health Risk Assessment
HRI	California Historic Resources Inventory
HVAC	heating, ventilation, and air conditioning
IAQ	Indoor Air Quality
IOU	investor-owned utility
IPCC	United Nations Intergovernmental Panel on Climate Change
ISO	Independent System Operator
ISTEA	Intermodal Surface Transportation Efficiency Act
ITE	Institute of Transportation Engineers
ITP	Incidental Take Permit
kBTU	kilo-British Thermal Unit
kV	kilovolt
kW	kilowatts
LAFCo	Local Agency Formation Commission
LBP	lead-based paint
LCFS	Low Carbon Fuel Standard
LDA	light-duty auto
L_{dn}	day/night average sound level
LDT	light-duty truck
LDT1	light-duty truck 1
LDT2	light-duty truck 2
LED	light-emitting diode
L_{eq}	equivalent sound level
LEV	Low Emission Vehicle
LID	Low Impact Development
LOS	Level of Service
LSE	load-serving entities

LUST	Leaking Underground Storage Tank
M&A	Monk & Associates
MBTA	Migratory Bird Treaty Act
MDV	medium-duty vehicle
mgd	million gallons per day
MIR	Maximally Impacted Sensitive Receptor
MLD	Most Likely Descendant
MMRP	Mitigation Monitoring and Reporting Program
MOU	Memorandum of Understanding
mph	miles per hour
MPO	Metropolitan Planning Organization
MRP	Municipal Regional Stormwater Permit
MS4	Municipal Separate Storm Sewer System
MSHCP	Multiple Species Habitat Conservation Plan
MTBE	methyl tertiary butyl ether
MTC	Metropolitan Transportation Commission
MTS	Metropolitan Transportation System
MW	megawatt
MWh	megawatt-hour
MXD	mixed-use development
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NCHRP	National Cooperative Highway Research Program
NEHRP	National Earthquake Hazards Reduction Program
NEPA	National Environmental Policy Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NF_3	nitrogen trifluoride
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Association
NHM	Natural History Museum of Los Angeles County
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NOAA Fisheries	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOC	Notice of Completion
NOP	Notice of Preparation

NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
O_3	ozone
OAL	Office of Administrative Law
OEHHA	California Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OHP	Office of Historic Preservation
OHWM	ordinary high water mark
ONAC	Federal Office of Noise Abatement and Control
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PCE	Passenger Car Equivalent
pCi/L	picocuries per liter
PFC	perfluorocarbon
PG&E	Pacific Gas and Electric Company
Phase I ESA	Phase I Environmental Site Assessment
PM_{10}	particulate matter, including dust, 10 micrometers or less in diameter
$PM_{2.5}$	particulate matter, including dust, 2.5 micrometers or less in diameter
PM_x	particulate matter
ppb	parts per billion
ppm	parts per million
ppt	parts per trillion
PPV	peak particle velocity
PRC	Public Resources Code
PTMMP	Pappose Tarplant Mitigation and Monitoring Plan
PUD	Planned Unit Development
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
Recology	Integrated Resource Recovery Company
REL	Reference Exposure Level
RHNA	Regional Housing Need Allocation
RMP	Risk Management Plan
rms	root mean square

ROG	reactive organic gases
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
RWSB	Ricksecker's water scavenger beetle
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SCS	Sustainable Communities Strategy
SCWA	Solano County Water Agency
SF_6	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SFPUC	San Francisco Public Utilities Commission
SID	Solano Irrigation District
SIP	State Implementation Plan
SMHM	salt marsh harvest mouse
SO_2	sulfur dioxide
SOI	Sphere of Influence
SO_X	sulfur oxides
SR	State Route
SSMM	start-up, shutdown, maintenance, and malfunction
SSWA	Suisun-Solano Water Authority
STA	Solano Transit Authority
STAA	Surface Transportation Assistance Act
State Water Board	California State Water Resources Control Board
SW	Seasonal Wetland
SWPPP	Storm Water Pollution Prevention Plan
TAC	toxic air contaminant
TCM	transportation control measures
TCR	Tribal Cultural Resource
TDM	Transportation Demand Management
TDS	total dissolved solids
TDV	Time Dependent Valuation
Tg	teragram
therms/y	therms per year
TIA	Traffic Impact Analysis
TIS	Traffic Impact Study
TISG	Transportation Impact Study Guide
TMA	Transportation Management Association

TMDL	Total Maximum Daily Load
TOD	Transit Oriented Development
TRU	Transport Refrigeration Unit
UBC	Uniform Building Code
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
V/C	volume to capacity ratio
VDECS	Verified Diesel Emission Control Strategies
VMT	Vehicle Miles Traveled
VOC	volatile organic compound
WDR	Waste Discharge Requirements
WPT	western pond turtle
WRI	World Resources Institute
WSA	Water Supply Assessment
ZEV	Zero-Emission Vehicle

EXECUTIVE SUMMARY

Purpose

This Draft Environmental Impact Report (Draft EIR) is prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with the implementation of the proposed Suisun Logistics Center Project (State Clearinghouse No. 2021010044). This document is prepared in conformance with CEQA (Public Resources Code [PRC] § 21000, *et seq*.) and the CEQA Guidelines (California Code of Regulations [CCR], Title 14, § 15000, *et se*q.).

The purpose of this Draft EIR is to inform decision-makers, representatives of affected and responsible agencies, the public, and other interested parties of the potential environmental effects that may result from implementation of the proposed project. This Draft EIR describes potential impacts relating to a wide variety of environmental issues and methods by which these impacts can be mitigated or avoided.

Project Summary

Project Location

The 167.43-acre project site is located in unincorporated Solano County, California, within the existing Suisun City Sphere of Influence (SOI). The project site is bounded by a service station and Walters Road (west), Petersen Road (north), grazing land (east), and State Route (SR) 12 (south).

Project Description

The applicant, Buzz Oates Construction, Inc., proposes to develop 2.1 million square feet of light industrial warehouse uses on approximately 120 acres. The remaining 47 acres would be preserved as open space. The entire project site and the full right-of-way of Petersen Road abutting the project site would be annexed into the Suisun City limits.

Six buildings ranging from 145,397 to 644,782 square feet would be developed on-site. Each building would provide docks, grade level roll-up doors, and trailer parking stalls. The facility would be enclosed with a secure perimeter and access would be restricted to authorized users. Refer to Chapter 2, Project Description for a comprehensive description of the proposed project.

Project Objectives

The underlying purpose of the proposed project is to develop a high-quality financially feasible project that is responsive to market demands and supports a comprehensive range of benefits, which may include preservation of open space, increased local employment, improved transportation infrastructure, and sustainable and healthy development measures for the surrounding community.

The specific objectives of the proposed project are to:

1. Promote economic growth through new capital investment, expansion of the tax base, creation of new employment opportunities, and payment of development fees.
2. Develop compatible land uses near Travis Air Force Base in the interests of avoiding interference with military operations and furthering the objectives of the Travis Sustainability Study.
3. Attract new employment-creating industries to Suisun City that generate new tax revenue and minimize demands on City services.
4. Improve Suisun City's jobs-housing ratio by locating new employment opportunities near residential areas.
5. Continue the orderly development of the eastern gateway of Suisun City with a well-designed project.
6. Further the goals and policies of the City of Suisun City General Plan by developing land contemplated to support urban development to its highest and best use.
7. Preserve the most biologically sensitive portions of the project site as open space.
8. Install circulation improvements along Walters Road and Petersen Road that provide efficient ingress and egress to the proposed project while also ensuring these facilities operate at acceptable levels.
9. Promote public safety by incorporating security measures into the project design.
10. Mitigate impacts on the environment through implementation of feasible mitigation measures.

Significant and Unavoidable Adverse Impacts

The proposed project would result in the following significant and unavoidable impacts:

- **Views from Peterson Road:** The proposed project would impact views of Potrero Hills from a segment of Peterson Road. The project has been designed, however, to retain some intermittent views for any passersby who might be inclined toward viewing Potrero Hills from their moving vehicle. Despite views of Potrero Hills being fleeting and partially obstructed, and despite the non-mandatory nature of the applicable policy, views from the approximate 0.5-mile stretch of Peterson Road along the project site would be degraded in a manner that may be considered substantially adverse by certain individuals. As a result, this direct and cumulative impact is considered potentially significant, with no known feasible mitigation to lessen it.
- **Consistency with Air Quality Management Plan:** The proposed project would emit criterial pollutants during construction and operations that would exceed adopted thresholds and, thus, be inconsistent with regional air quality planning assumptions. Mitigation is proposed requiring emissions reduction measures. However, after implementation of feasible mitigation, criterial pollutant would still exceed adopted thresholds. The residual significance of this impact is significant and unavoidable.

- **Cumulative Criteria Pollutant Emissions:** The proposed project would emit criterial pollutants during construction and operations that would exceed adopted thresholds. Mitigation is proposed requiring emissions reduction measures. However, after implementation of feasible mitigation, criterial pollutant emissions would still exceed adopted thresholds. The residual significance of this impact is significant and unavoidable.
- **Special-Status Species:** The proposed project would result in adverse impacts to the pappose tarplant. Mitigation is proposed requiring either salvaged seeds to be provided to a mitigation bank or the purchase of credits at a mitigation bank. However, there is uncertainty regarding whether mitigation banks would accept salvaged seeds or have credits available for purchase and, therefore, the residual significance of this impact is significant and unavoidable.
- **Greenhouse Gas Emissions:** The proposed project would emit greenhouse gas (GHG) emissions during construction and operations that would exceed adopted thresholds. Mitigation is proposed requiring emissions reduction measures. However, after implementation of feasible mitigation, operational and cumulative GHG emissions would still exceed adopted thresholds. The residual significance of this impact is significant and unavoidable.
- **Vehicle Miles Traveled:** The proposed project's Vehicle Miles Traveled (VMT) per employee would exceed adopted thresholds. Mitigation is proposed requiring implementation of transportation demand management measures. However, because the lead agency cannot assure that the transportation demand measures would reduce VMT, the residual significance of this impact is significant and unavoidable.

Summary of Project Alternatives

Below is a summary of the alternatives to the proposed project considered in Chapter 5, Alternatives to the Proposed Project.

No Project Alternative

The project site would remain undeveloped for the foreseeable future and no development would occur.

Reduced Density Alternative

A 1.55-million-square-foot logistics center would be developed on the project site, which represents a 25 percent reduction in square footage relative to the proposed project. The layout and project boundaries would remain the same as the proposed project.

Buildings A, B, and C Alternative

Buildings A, B, C which total 544,965 square feet, would be developed on 67 acres. The remaining 100 acres of the project site would remain undeveloped. The Buildings A, B, C Only Alternative is the Environmentally Superior Alternative.

Areas of Controversy

Pursuant to CEQA Guidelines Section 15123(b), a summary section must address areas of controversy known to the lead agency, including issues raised by agencies and the public, and it must also address issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects.

A Notice of Preparation (NOP) for the proposed project was issued on January 6, 2021. The NOP describing the original concept for the proposed project and issues to be addressed in the Draft EIR was distributed to the State Clearinghouse, responsible agencies, and other interested parties for a 30-day public review period extending from January 6, 2021, through February 4, 2021. The NOP identified the potential for significant impacts on the environment related to the following topical areas:

- Aesthetics, Light, and Glare
- Air Quality
- Biological Resources
- Cultural Resources and Tribal Cultural Resources
- Geology, Soils, and Seismicity
- Greenhouse Gas Emissions and Energy
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise
- Public Services
- Transportation
- Utilities and Service Systems

Disagreement Among Experts

This Draft EIR contains substantial evidence to support all the conclusions presented herein. It is possible that there will be disagreement among various parties regarding these conclusions, although the City of Suisun City is not aware of any disputed conclusions at the time of this writing. Both the CEQA Guidelines and case law clearly provide the standards for treating disagreement among experts. Where evidence and opinions conflict on an issue concerning the environment, and the lead agency knows of these controversies in advance, the Draft EIR must acknowledge the controversies, summarize the conflicting opinions of the experts, and include sufficient information to allow the public and decision-makers to make an informed judgment about the environmental consequences of the proposed project.

Potentially Controversial Issues

Below is a list of potentially controversial issues that may be raised during the public review and hearing process of this Draft EIR:

- Air Pollution
- Biological Resources
- Greenhouse Gas Emissions
- Land Use Compatibility
- Transportation
- Water Supply

It is also possible that evidence will be presented during the 45-day, statutory Draft EIR public review period that may create disagreement. Decision-makers would consider this evidence during the public hearing process.

In rendering a decision on a project where there is disagreement among experts, the decision-makers are not obligated to select the most environmentally preferable viewpoint. Decision-makers are vested with the ability to choose whatever viewpoint is preferable and need not resolve a dispute among experts. In their proceedings, decision-makers must consider comments received concerning the adequacy of the Draft EIR and address any objections raised in these comments. However, decision-makers are not obligated to follow any directives, recommendations, or suggestions presented in comments on the Draft EIR, and can certify the Final EIR without needing to resolve disagreements among experts.

Public Review of the Draft EIR

Upon completion of the Draft EIR, the City of Suisun City filed a Notice of Completion (NOC) with the State Office of Planning and Research to begin the public review period (PRC § 21161). Concurrent with the NOC, this Draft EIR has been distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as all parties requesting a copy of the Draft EIR in accordance with Public Resources Code 21092(b)(3). During the public review period, the Draft EIR, including the technical appendices, is available for review at the City of Suisun City offices and the Suisun City Library. The address for each location is provided below:

City of Suisun City
701 Civic Center Boulevard
Suisun City, CA 94585
Hours: Monday–Thursday: 9:00 a.m. to 5:00 p.m.

Joseph A. Nelson Center
611 Village Drive
Suisun City, CA 94585
Hours: 9:00 a.m. to 5:00 p.m.

Suisun City Library
601 Pintail Drive
Suisun City, CA 94585
Hours: 9:00 a.m. to 6:00 p.m. (Mondays and Wednesdays; 9:00 a.m. to 8:00 p.m. Tuesdays and Thursdays; and 9:00 a.m. to 5:00 p.m. Fridays and Saturdays)

Agencies, organizations, and interested parties have the opportunity to comment on the Draft EIR during the 45-day public review period. Written comments on this Draft EIR should be addressed to:

By Mail: City of Suisun City
Attn: Jim Bermudez
Development Services Director
701 Civic Center Boulevard
Suisun City, CA 94585

By Email: jbermudez@suisun.com

Submittal of electronic comments in Microsoft Word or Adobe PDF format is encouraged. Upon completion of the public review period, written responses to all significant environmental issues raised will be prepared and made available for review by the commenting agencies at least 10 days prior to the public hearing before the City of Suisun City on the proposed project, at which the certification of the Final EIR will be considered. Comments received and the responses to comments will be included as part of the record for consideration by decision-makers for the proposed project.

Executive Summary Matrix

Table ES-1 below summarizes the impacts, mitigation measures, and resulting level of significance after mitigation for the relevant environmental issue areas evaluated for the proposed project. The table is intended to provide an overview; narrative discussions for the issue areas are included in the corresponding section of this Draft EIR. Table ES-1 is included in the Draft EIR as required by CEQA Guidelines Section 15123(b)(1).This Draft EIR also evaluates three potential alternatives that may reduce impacts associated with the proposed project. The No Project Alternative, Reduced Density Alternative, and Buildings A, B, C Only Alternative are discussed in Chapter 5 of this Draft EIR. Table 5-5, Summary of Alternatives, provides a comparison of each alternative to the proposed project and identifies alternatives that would reduce the proposed project's potentially significant impact. Consistent with CEQA Guidelines Section 15123(b)(1), the impacts that could be reduced by an alternative to the proposed project are summarized below.

The No Project Alternative would avoid all of the proposed project's significant impacts.

The Reduced Density Alternative would lessen the severity of, but would not avoid, the significant and unavoidable aesthetic, air quality, GHG emissions, biology, and transportation impacts associated with the proposed project. Additionally, the Reduced Density Alternative would lessen the severity of several of the significant impacts that can be reduced to a level of less than significant with mitigation (e.g., biological resources, cultural resources, hydrology and water quality, and noise).

The Buildings A, B, C Only Alternative would lessen the severity of, but would not avoid, the significant and unavoidable aesthetic, air quality, GHG emissions, impacts to pappose tarplant, and transportation impacts associated with the proposed project. Additionally, the Buildings A, B, C Only Alternative would lessen the severity of several of the significant impacts that can be reduced to a level of less than significant with mitigation (e.g., biological resources, cultural resources, hydrology and water quality, and noise).

Table ES-1: Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Section 3.1—Aesthetics, Light, and Glare		
Impact AES-1: The proposed project would have a substantial adverse effect on a scenic vista.	No feasible mitigation	Significant and unavoidable impact.
Impact AES-2: The proposed project would not degrade the existing visual character or quality of public views of the site and its surroundings.	No mitigation is necessary.	Less than significant impact.
Impact AES-3: The proposed project may create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	**MM AES-3:** Prior to issuance of building permits for each structure, the City of Suisun City shall review the design of each warehouse to ensure that it is compatible with Travis Air Force Base aviation operations and consistent with the Travis Air Force Base Airport Land Use Consistency Plan. Proposed structures shall be assessed to determine whether they emit glint, glare, or distracting lights that could be mistaken for airport lights or emit dust, steam, high-velocity exhaust plumes, or smoke that may impair pilot visibility. Additionally, any proposals for photovoltaic solar systems shall be evaluated with a solar glare analysis. If a potential hazard to flight is noted, the City shall require the applicant to modify the proposed project design to remove the hazard. As part of its process for reviewing proposed building permits, the City shall provide Travis Air Force Base representatives with copies of all building plans and the opportunity to comment on compatibility with aviation operations. The City shall not approve building permits prior to receipt of any timely input from such Base representatives. Input shall be considered timely if provided to the City within 30 days after Base representatives have received proposed building plans.	Less than significant impact.
Section 3.2—Air Quality		
Impact AIR-1: The proposed project would conflict with or obstruct implementation of the applicable air quality plan	Implement MM TRANS-1f, MM AIR-2a, MM AIR-2b, MM AIR-2c, and MM AIR-2d.	Significant unavoidable impact.
Impact AIR-2: The proposed project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment	Implement MM TRANS-1f and: **MM AIR 2a:** The project applicant shall require its contractors, as a condition of contract, to reduce construction-related exhaust emissions by	Significant and unavoidable impact.

Impacts	Mitigation Measures	Level of Significance After Mitigation
under an applicable federal or State ambient air quality standard.	ensuring that all off-road equipment greater than 50 horsepower shall operate on an EPA-approved Tier 4 or newer engine. **MM AIR-2b:** The following Best Management Practices (BMPs), as recommended by the Bay Area Air Quality Management District (BAAQMD), shall be included in the design of the project and implemented during construction: • All exposed non-paved surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and access roads) shall be watered at least three times per day and/or non-toxic soil stabilizers shall be applied to exposed non-paved surfaces. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered and/or shall maintain at least 2 feet of freeboard. • All visible mud or dirt trackout onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 miles per hour. • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph. • All trucks and equipment, including their tires, shall be washed off prior to leaving the site. • Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel. • The prime construction contractor shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The City and the construction contractor shall take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations. **MM AIR-2c:** The following additional Best Management Practices (BMPs) shall be included in the design of the project and implemented during construction, as a condition of a contractor's contract:	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	• Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure (ACTM) Title 13, Section 2485 of California Code of Regulations). Clear signage regarding idling restrictions shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. **MM AIR-2d:** Prior to the issuance of grading or building permits, the project applicant shall provide the City with documentation demonstrating the use of "Low-VOC" architectural coatings during the proposed project's construction. "Low-VOC" architectural coatings used during project construction shall not exceed 50 grams of reactive organic gases (ROG) or volatile organic compounds (VOC) per liter of product. **MM AIR-2e:** Prior to issuing any certificate of occupancy for the proposed project or any individual building within the proposed project, the project applicant shall provide the City with documentation demonstrating the use of electric landscaping equipment during the operation of the proposed project or individual building. Landscaping equipment referred to in this requirement shall include the use of electric lawnmowers, leaf blowers, and chainsaws. **MM AIR-2f:** Prior to issuing the certificate of occupancy for the proposed project or any individual building within the proposed project, the project applicant shall provide the City with documentation demonstrating that any tenant-owned heavy-duty trucks (vehicles above 33,000 pounds gross vehicle weight rating) used during project operations must meet or exceed model year 2014. If the project applicant or tenant does not own the heavy-duty trucks that would be used during operation of the proposed project or individual building, the project applicant shall provide the City with documentation from the trucks owners or operators demonstrating that trucks utilized for operation of the proposed project or individual building will meet or exceed model year 2014. If any change occurs where a new	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	truck fleet is utilized during operation of the proposed project or individual building, the project applicant shall provide the City with documentation demonstrating that the new truck fleet. **MM AIR-2g:** As a part of future lease agreements, the project proponent shall provide all future tenants at the project site information on available California Air Resources Board (ARB) and Bay Area Air Quality Management District (BAAQMD) incentive programs, such as the Carl Moyer Program and the Voucher Incentive Program, that support upgrading truck fleets to clean air technology equipment. **MM AIR-2h:** Prior to occupancy, the project applicant shall stipulate in tenant lease agreements that all forklifts operating on the project site are solely powered by electricity. **MM AIR-2i:** If the proposed project would include cold storage warehouse(s), the project shall include electrical infrastructure such that all loading docks are equipped with plug-ins to support TRUs while stationary at the docks. All trucks with TRUs shall be required to be plugged in and shut off the TRU engines while stationary at the loading docks.	
Impact AIR-3: The proposed project would expose sensitive receptors to substantial pollutant concentrations.	Implement all mitigation measures listed under Impact AIR-2.	Less than significant impact.
Impact AIR-4: The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	No mitigation is necessary.	Less than significant impact.
Section 3.3—Biological Resources		
Impact BIO-1: The proposed project may have a substantial adverse impact on special-status plant and wildlife species.	**MM BIO-1a:** To offset impacts to pappose tarplant the approximately 4,280,464 pappose tarplant plants occupying approximately 29.9 acres, the applicant shall, at a minimum, implement the following mitigation measures: 1. The applicant shall preserve the approximately 14-acres of habitat occupied by approximately 1,916,215 pappose tarplant plants on the 45-acre open space area;	Significant and unavoidable impact for pappose tarplant; less than significant for all other species.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	2. Prior to issuance of a grading permit, the project applicant shall retain a qualified Botanist/Biologist to prepare a Pappose Tarplant Mitigation and Monitoring Plan (PTMMP). A qualified Botanist/Biologist would need a 4-year college degree in wildlife biology or related environmental sciences, a minimum of 2 years of experience conducting protocol rare plant surveys, and experience with identification of pappose tarplant. 3. The PTMMP shall include at a minimum: • Seedbank salvage procedure(s); • Standards for locating areas on the 45-acre open space area to establish new populations and/or to augment existing populations using the salvaged seed; • The plan shall set forth a minimum performance standard within the 45-acre open space area which shows a continued increase in the number of plants and absolute cover of plants over the monitoring period. • Monitoring to include focused surveys for a minimum of 5 years over a 10 year monitoring period to document if the PTMMP increases the overall pappose tarplant population number and acreage on the 45-acre open space area. Focused surveys shall be implemented in Years 1-2, 5, 8, and year 10. • Prepare a letter report documenting annual monitoring results and submit them to the City by December of each monitoring year. 4. Prior to the implementation of the PTMMP, the qualified Biologist shall contact organizations that may have interest in salvaged pappose tarplant seed to implement off-site restoration, habitat enhancement, or research for the pappose tarplant. Organizations the qualified Biologist shall contact may include for-profit organizations such as a mitigation bank, or non-profits such as the Solano Land Trust, California Native Plant Society or University botanical departments. If an organization does request salvaged pappose tarplant seed, the applicant shall provide any excess salvaged pappose tarplant seed to the organization. 5. Currently there are no mitigation banks that offer pappose tarplant preservation credits. Prior to the start of construction if a mitigation bank does offer pappose tarplant preservation credits or the upland or wetland mitigation bank credits available are occupied with pappose tarplant, the	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	applicant may elect to purchase credits equivalent to approximately 15.9 acres of occupied habitat and not implement the PTMMP, should such credits become available. **MM BIO-1b:** Direct impacts to 47 Contra Costa goldfield plants within a 0.03-acre area in the western portion of the site could in theory be avoided through a redesign that removes this area and a setback of at least 50 feet from the project footprint from the site plan. Because such avoidance appears to not be feasible, the applicant shall undertake compensatory mitigation sufficient to achieve a performance standard of no net loss of individual plants. Such compensation may be accomplished either through federal Endangered Species Act incidental take coverage obtained through a United States Army Corp of Engineers (USACE) Endangered Species Act Section 7 consultation process with the United States Fish and Wildlife Service (USFWS) or, in the absence of USACE jurisdiction over the affected 0.03-acre area, through a process overseen by the City. One option for satisfying this performance standard is the purchase Contra Costa goldfields preservation credits at a USFWS-approved bank at a minimum ratio of 2:1 for occupied habitat impacted. The term "occupied habitat" is either the extent of the occupied wetland or, if a plant is located in an upland, an area buffered by a 50-foot radius. To compensate for 0.03 acres of direct impact, a minimum of 0.06 preservation credits must be purchased. Proof of purchase of all required Contra Costa goldfields preservation credits shall be provided to the City prior to issuance of the grading permit. If preservation credits for Contra Costa goldfields are not available, the applicant shall prepare and submit a Contra Costa Goldfields Mitigation and Monitoring Plan (CCGMMP). If the USACE has jurisdiction over the affected 0.03-acre area, the CCGMMP shall be submitted to the USFWS, via the USACE Endangered Species Act Section 7 consultation process. If the USACE lacks such jurisdiction, the CCGMMP shall be submitted to the City for its approval. At minimum, the CCGMMP shall include seedbank-harvesting procedures, locations where the seedbank will be placed in suitable habitat adjacent to the project site, success criteria, and monitoring activities. The plan shall set forth a minimum 1:1 re-establishment rate performance standard of the number of individual Contra Costa goldfields impacted, or	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	occupied habitat as determined by the most recent botanical survey. Monitoring activities shall include 5 years of annual monitoring of the establishment areas by a qualified Botanist/Biologist. A qualified Botanist/Biologist would need a minimum of a 4-year college degree in plant biology or related environmental sciences, a minimum of 2 years of experience conducting protocol rare plant surveys, and experience with identification of Contra Costa goldfields. Seedbank salvage activities shall be completed prior to grading activities. The applicant shall be responsible for implementing the plan, including funding, monitoring, reporting, and performance of any remedial activities required by the plan. In addition, the 45-acre open space area within Contra Costa goldfields critical habitat shall be protected in perpetuity using a conservation easement. If the USACE has jurisdiction over the affected 0.03-acre area and during permitting with the USFWS it is determined that additional measures beyond those outlined above are required for impacts to Contra Costa goldfields critical habitat, those measures shall be implemented by the applicant according to the terms of the project's Endangered Species Act incidental take coverage. **MM BIO-1c:** Mitigation to compensate for 1.15 acres of direct impact to occupied vernal pool fairy shrimp habitat will be accomplished through the achievement of the following performance standards, which shall function as required minimum standards if the affected 1.15 acre is subject to USACE jurisdiction and therefore triggers a Section 7 ESA consultation with the USFWS. The applicant shall ensure compensation for the 1.15 acres of occupied habitat impacted by the project by, at a minimum, preserving occupied habitat at a ratio of 2:1 and creating or restoring habitat that could support vernal pool fairy shrimp (e.g. depth and duration of ponding, proximity to existing occupied habitat etc.) at a ratio of 1:1. Such compensation shall be achieved through the use of conservation easements, mitigation banks, or similar strategies resulting in permanent protection. In addition, the 45-acre open space that contains critical habitat for vernal pool fairy shrimp, vernal pool tadpole shrimp, and Conservancy fairy shrimp shall be protected in perpetuity using a conservation easement. If acceptable to USFWS or the City (depending on whether USACE has jurisdiction over the affected 1.15 acres), the applicant may use preserved	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	lands, or portions thereof, not only for habitat for Conservancy fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp, but also for Ricksecker's water scavenger beetle, wetlands preservation, and for habitat for other species for which the City may require off-site preservation (e.g., Swainson's hawk). If during permitting with the USFWS or the City it is determined that additional measures beyond that outlined above are required for impacts to critical habitat, those measures shall be implemented by the applicant according to the terms of the project's Endangered Species Act incidental take coverage. **MM BIO-1d:** No more than 30 days prior to the first ground-disturbing activities, the project applicant shall retain a qualified Biologist to conduct a focused survey for northwestern pond turtle to determine presence or absence of this species within a 100-foot radius of the disturbance area. A qualified Biologist would need a minimum of a 4-year college degree in wildlife biology or related environmental science, familiarity with northwestern pond turtle and its local ecology, and experience conducting surveys for this species. If construction occurs between April 1 and September 30, this survey shall include turtle nests. If a turtle is found within the project site, the qualified Biologist shall move the turtle to a location outside of the construction zone to suitable habitat. Suitable habitat may be a den the turtle can move into or a ponded area similar to the habitat the turtle was removed from. If a nest is found within the project site or a 100-foot radius of the project site, construction shall not take place within 100 feet of the nest until the turtles have hatched or the eggs have been moved to an appropriate location determined by the qualified Biologist. Construction shall be avoided when adults and hatchlings are overwintering (October 1 to February 28/29), because of the likelihood that turtle adults and juveniles could be present in upland habitats. If construction activities must occur during this time frame, a survey for overwintering locations shall be conducted no more than 14 days prior to construction. If this species is found to be overwintering within the project site, den locations shall be avoided until the area is unoccupied, as determined by a qualified Biologist.	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	The qualified wildlife Biologist (see MM BIO-1j) shall be present during initial clearing and grubbing to minimize potential impacts to turtles. In the event that a turtle is found during project implementation, construction activities shall stop until the turtle is moved by a qualified Biologist to a location outside the construction zone within suitable habitat. Suitable habitat may be a den the turtle can move into or a ponded area similar to the habitat the turtle was removed from. In the event a nest is located, the area shall be fenced and signs shall be posted to alert the construction crew as to the sensitivity of the habitat in question. **MM BIO-1e:** Prior to any ground disturbance, pre-construction surveys for burrowing owl shall be conducted within a minimum of 150 meters of the project site. Where the survey area encroaches onto private property not accessible to the public (e.g., fenced in commercial property, residential backyard, etc.), the qualified Biologist shall either contact the property owner for permission to physically access the property or, if permission cannot be obtained within a reasonable time period, conduct a visual survey of adjacent areas by scanning with binoculars or a spotting scope. The pre-construction surveys shall be conducted within 2 weeks prior to the onset of any ground-disturbing activities. Surveys shall be conducted by a qualified Biologist following California Department of Fish and Wildlife staff report (CDFW 2012) survey methods and Biologist qualifications to establish the status of burrowing owl on the project site. If no burrowing owls are detected during the pre-construction survey, no further action is necessary. If construction is delayed or suspended for more than 30 days after the survey, the area shall be resurveyed in accordance with previously described methods. • If burrowing owl are found to occupy the project site during the nonbreeding season (September 1 to January 31), occupied burrows shall be avoided by establishing a no-disturbance buffer zone a minimum of 100 feet around the burrow. Buffers may be increased to address site-specific conditions using the impact assessment approach described in the CDFW 2012 staff report. If a qualified Biologist determines the location of an occupied burrow/s may be impacted even with a 100-foot buffer, or the burrow(s) are in a location(s) on the project site where a buffer cannot be established without preventing the proposed project	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	from moving forward, then a passive relocation effort may be instituted to relocate the individual(s) out of harm's way pursuant to a Burrowing Owl Exclusion Plan prepared in accordance with the CDFW 2012 staff report. The applicant shall notify CDFW at least 14 days prior to the implementation of the Burrowing Owl Exclusion Plan. • If burrowing owl are found to be present during the breeding season (February 1 to August 31), the proposed project ground-disturbing activities shall follow the CDFW 2012 staff report recommended avoidance protocol whereby occupied burrows shall be avoided with a no-disturbance buffer of between 50 meters and 500 meters depending on time of year and disturbance level, as described in the 2012 CDFW staff report. This breeding season buffer zone shall remain until the young have fledged or an unsuccessful nesting attempt is documented. • If burrowing owls are ultimately found on the site and burrow eviction/relocation of burrowing owls during the non-nesting season is a selected strategy to move forward with the project without direct impacts to burrowing owl individuals, the applicant shall coordinate this effort with CDFW and provide habitat mitigation consistent with the 2012 CDFW Staff Report on burrowing owl. **MM BIO-1f:** Prior to ground disturbance, a pre-construction nesting survey shall be conducted for northern harrier and short-eared owl by a qualified Biologist if construction is scheduled during the nesting season (February 1 through September 1). The qualified Biologist shall have a 4-year degree in wildlife biology or related science, familiarity with northern harrier and short-eared owl and their local ecology, and experience conducting wildlife surveys. To determine whether northern harrier or short-eared owl is nesting on-site, a qualified Biologist(s) shall conduct walking transects through the grassland habitat within the project site and a 500-foot radius from the site searching for northern harrier and short-eared owl nests. Where the survey area encroaches onto private property not accessible to the public (e.g., fenced in commercial property, residential backyard, etc.), the qualified Biologist shall either contact the property owner for permission to physically access the property or, if permission cannot be obtained within a reasonable time period, conduct a visual survey of adjacent areas by scanning with binoculars or a spotting scope. An active	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	northern harrier or short-eared owl nest must be protected by implementing a minimum 500-foot radius buffer zone around the nest marked with orange construction fencing. If an active nest is located outside of the project site, the buffer shall be extended onto the project site and demarcated where it intersects the project site. Size of buffer zone may be increased if the qualified Biologist determines the construction activity may result in the abandonment of the nest or impact the health of the fledglings. Factors to consider may include, but are not limited to, the type of construction activity that may occur, physical barriers between the construction site and active nest, behavioral factors, and extent that northern harrier or short-eared owl may have acclimated to the disturbance. No construction or earthmoving activity shall occur within the established buffer zone until it is determined by the qualified Biologist that the young have fledged or that the nesting cycle is otherwise determined to be complete based on monitoring of the active nest by a qualified Biologist. **MM BIO-1g:** Pre-construction surveys for nesting Swainson's hawk shall be conducted in the project site vicinity prior to initiation of project construction activities. Surveys shall be conducted by a qualified Biologist with a 4-year degree in wildlife biology or related science, familiarity with Swainson's hawk and its local ecology, and experience conducting surveys for this species. Surveys shall be conducted in accordance with California Department of Fish and Wildlife (CDFW) "Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley" (CDFW 2000) to maximize the potential for locating nesting Swainson's hawk and reduce the potential for nest failures due to project activities and/or disturbances. The protocol recommends a preliminary (optional survey) between January and March 20, but required surveys conducted during March 20 to April 5, April 5 to April 20, and June 10 to July 30. In addition to pre-construction surveys, surveys must also be conducted each year following initiation of construction if project activities are delayed or discontinued for 7 or more days prior to the first survey period (March 20 to April 5), and are scheduled to recommence construction activities during the second survey period but before August 1. These pre-construction surveys shall include investigation of all potential nesting trees within a half-mile radius around all project activities and shall be completed for at least	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	two survey periods immediately prior to commencement of project construction. Where the survey area encroaches onto private property not accessible to the public (e.g., fenced in commercial property, residential backyard, etc.), the qualified Biologist shall either contact the property owner for permission to physically access the property or, if permission cannot be obtained within a reasonable time period, conduct a visual survey of adjacent areas by scanning with binoculars or a spotting scope. If no nesting Swainson's hawk are found during the first survey period starting March 20 and extending through April 5, then project construction may commence. If during the second survey (April 5–April 20) Swainson's hawk are found to be nesting in the project vicinity and construction has commenced, it shall be assumed the Swainson's hawk commenced nesting and thus the Swainson's hawk are habituated to the ambient level of noise and disturbance emanating from the project site. If Swainson's hawk are found to be nesting within half-mile of the project site, a non-disturbance buffer shall be established to keep all construction activities a minimum of 0.25 mile from the nest site. No disturbance such as construction or earthmoving activity shall occur within the established buffer zone until it is determined by a qualified Biologist that the young have fledged or that the nesting cycle is complete based on monitoring of the active nest by the qualified Biologist. The CDFW shall be consulted regarding the adequacy of the buffer established by the qualified Biologist. At that time the necessity for acquiring a Fish and Game Section 2081 Incidental Take Permit (ITP) authorization would be determined. An ITP authorization shall be required if there were a valid concern the project activities would result in the "take" of an adult Swainson's hawk, eggs, or nestlings. The applicant shall ensure at a minimum that the 127.87 acres of suitable Swainson's Hawk foraging is mitigated at a 0.5:1 ration (63.94 acres). Mitigation will include that (1) the 45-acre open space area remain undeveloped to provide an area suitable as foraging habitat for Swainson's hawk, and (2) compensation for the net 18.94 acres of suitable Swainson's hawk foraging habitat impacted by the project. This compensation will consist of preservation of suitable off-site Swainson's hawk foraging habitat	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	through the use of a deed restriction, conservation easements, mitigation banks, or similar strategies resulting in permanent protection. **MM BIO-1h:** If construction occurs during the breeding season of migratory and resident birds (February 1 to August 31), a qualified Biologist shall conduct a pre-construction breeding bird survey in areas of suitable habitat within 7 days prior to the onset of construction activity. Surveys shall be conducted within the project footprint and 250 feet from the construction limits. Where the survey area encroaches onto private property not accessible to the public (e.g., fenced in commercial property, residential backyard, etc.), the qualified Biologist shall either contact the property owner for permission to physically access the property or, if permission cannot be obtained within a reasonable time period, conduct a visual survey of adjacent areas by scanning with binoculars or a spotting scope. If the survey area is found to be absent of nesting birds, no further mitigation would be required. However, if construction activities are delayed by more than 7 days, an additional nesting bird survey shall be performed. If active bird nests are found, appropriate buffer zones shall be established around all active nests to protect nesting adults and their young from direct or indirect impacts related to project construction disturbance. An appropriate buffer zone is one that the qualified Biologist determines will ensure that work activities do not adversely affect nests, result in unusual or distressed avian behavior, result in abandonment of the nest, or impact the health of the fledglings. Construction activity within the established buffer zone may only be conducted at the discretion of the qualified Biologist. Size of buffer zones shall be determined per recommendations of qualified Biologist based on site conditions and species involved, but typical buffers around active nests are 500 feet for large raptors such as buteos, 250 feet for small raptors such as accipiters, 300 feet for a tricolored blackbird nesting crow, and 100 feet for passerines (songbirds) and other bird species. If an active nest is located outside of the project site, the buffer shall be extended onto the project site and demarcated where it intersects the project site. Buffer zones shall be maintained until it can be documented that either the nest has failed, or the young have fledged. The size of buffer zone may be decreased if nest monitoring by the qualified Biologist indicates that work activities are not adversely impacting the nest or may be increased if birds	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	are showing signs of unusual or distressed behavior or the qualified Biologist determines that the construction activity may result in the abandonment of the nest or impact the health of the fledglings. Factors to consider may include, but are not limited to, the species involved, type of construction activity that may occur, physical barriers between the construction site and active nest, and behavioral factors. This mitigation measure mitigates potential impacts to active nests of nesting bird species of special concern not mentioned in MM BIO-1f, MM BIO-1g, and MM BIO-1h, including white-tailed kite, loggerhead shrike, grasshopper sparrow, Suisun song sparrow, yellow-headed blackbird and tricolored blackbird. T**his measure** also mitigates potential impacts to active nests of bird species protected under the Migratory Bird Treaty Act and the California Fish and Game Code. **MM BIO-1i:** A survey by a qualified Biologist shall be conducted for American Badger dens no more than seven days prior to any ground-disturbing activity. Surveys shall be conducted within the project footprint and 100 feet from the construction limits. Where the survey area encroaches onto private property not accessible to the public (e.g., fenced in commercial property, residential backyard, etc.), the qualified Biologist shall either contact the property owner for permission to physically access the property or conduct a visual survey of adjacent areas by scanning with binoculars or a spotting scope. In the event that an active den is discovered in the surveys area, a minimum 100-foot buffer will be established around the den. The no-disturbance buffer shall be flagged and no ground-disturbing activity will be allowed to occur until it is determined by the qualified Biologist that the badgers have dispersed the den. The qualified Biologist shall have a 4-year degree in wildlife biology or related science and experience detecting an active badger nest. **MM BIO-1j:** The applicant shall retain a Qualified Biologist to conduct an environmental awareness program for all construction crews prior to initiation of construction, provide biological monitoring services during the period of active ground disturbance, and conduct required preconstruction surveys (to the extent the biologist meets minimum species-specific qualifications to perform the surveys). All workers involved in the clearing of	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	vegetation or other construction will participate in a training session led by the Qualified Biologist prior to initiation of work. This training session will include information on the ecology and identification of all special status species that may be impacted by the project: pappose tarplant, Contra Costa goldfields, vernal pool fairy shrimp, western pond turtle, burrowing owl, northern harrier, short-eared owl, Swainson's hawk, and American badger, as well nesting birds protected by the Migratory Bird Treaty Act and California Fish and Game Code. The session will also include information related to both the federal Endangered Species Act and CESA as well as relevant sections of the California Fish and Game Code and penalties associated with harm done to an individual of a listed species, and the need workers to stop work and inform the on-site Biologist in the event of a potential sighting. If qualified to do so the Qualified Biologist will perform the required preconstruction surveys as per Mitigation Measures above for western pond turtle, burrowing owl, northern harrier and short-eared owl, Swainson's hawk, American badger and nesting birds. The Qualified Biologist will remain on-site during all work involving vegetation clearing and ground disturbance to help ensure that no special status species are harmed. If species are found on the site (e.g., western pond turtle), the Qualified Biologist will move the individual to an appropriate off-site location and out of harm's way. If fences are established to demarcate buffer zones or setbacks from sensitive resources, the biological monitor will check the integrity of these fences daily and search for special status species to ensure impacts to the species do not occur. The Qualified Biologist will assist in demarcating buffer zones for any nesting birds and, if necessary, monitor nests to ascertain when young have fledged and work at that location can resume. If a special status species if found during construction operations (e.g., western pond turtle), work should be halted and the Qualified Biologist will relocate the individual to a suitable off-site location or (for listed species) allow the individual to leave the project area of its own volition.	

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact BIO-2: The proposed project may have adverse impacts on sensitive natural communities or riparian habitat.	Implement MM BIO-3a and MM BIO-3b. I	Less than significant impact.
Impact BIO-3: The proposed project may have a substantial adverse impacts on federally or State protected wetlands.	**MM BIO-3a:** Prior to issuance of grading permits for activities that impact protected aquatic resources, the project applicant shall obtain all requisite authorizations from agencies with jurisdiction over the affected aquatic resources. Such agencies may include, but may not be limited to, the United States Army Corps of Engineers (USACE), the United States Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), and the San Francisco Bay Regional Water Quality Control Board (San Francisco Bay RWQCB). Regardless of agency permit requirements, impacted resources shall be offset through on-site restoration and/or establishment within the 45-acre wetland preserve area, off-site establishment and/or restoration, purchase of credits at an agency-approved mitigation bank in the region, or another agency-approved habitat mitigation method (e.g., re-establishment, preservation, etc.) at no less than a 1:1 ratio. This ratio applies to wetlands and waters subject to federal and/or State jurisdiction. Such mitigation may simultaneously satisfy other project mitigation requirements for sensitive species or critical habitat (e.g., vernal pool fairy shrimp, vernal pool tadpole shrimp, California tiger salamander, Swainson's hawk, burrowing owl) if the applicant demonstrates to the City and applicable resource agencies with substantial evidence that the mitigation lands provide suitable habitat and meet all other mitigation specifications. **MM BIO-3b:** If on-site wetland restoration and establishment occurs within the 45-acre open space area, a Wetland Mitigation and Monitoring Plan shall be submitted to the USACE, CDFW, and/or the San Francisco Bay RWQCB, as applicable in light of these agencies' respective regulatory jurisdictions, for review as part of the process for obtaining any needed permit from these agencies. The Wetland Mitigation and Monitoring Plan shall be prepared in accordance with the Subpart J–Compensatory Mitigation for Losses of Aquatic Resources outlined in the California State Water Resources Control Board (State Water Board) Procedures, and in accordance with the State Water Board Implementation Guidance dated	Less than significant impact.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	April 2020, and (if applicable) in accordance with the USACE Compensatory Mitigation Rule (33 Code of Federal Regulations [CFR] Part 332). The basic objective of the Wetland Mitigation and Monitoring Plan is to ensure that project wetland impacts, and compensatory mitigation proposed to offset the wetland impacts, shall provide a no net loss of area of wetlands, and wetlands established/created shall be in-kind to the wetlands impacted. In summary, the Wetland Mitigation and Monitoring Plan shall at a minimum: • Restore and Establish 4.5 acres of seasonal wetlands, 0.54 acre of seasonal wetland associated with the ditch, 0.57 acre freshwater marsh drainage ditch, 0.09 acre of unvegetated roadside ditch, and 0.23 acre seasonal wetland roadside ditch/Petersen Road, in-kind to the impacted aquatic resources at a minimum 1:1 ratio. • Provide financial assurances to ensure a high level of confidence that the compensatory mitigation shall be successfully completed, in accordance with applicable performance standards in the Plan. • Design ecological performance standards to assess whether the Wetland Mitigation and Monitoring Plan is achieving the overall objectives, so that it can be objectively evaluated to determine whether it is developing into the desired resource type (e.g., seasonal wetland, freshwater marsh), and attaining any other applicable metrics such as acres, number of native plant species, water saturation and/or ponding depth and duration etc. • Monitor the site for a duration necessary to determine whether the Wetland Mitigation and Monitoring Plan is meeting the performance standards of the Plan. • Protect the approximately 45-acre open space area in perpetuity using a conservation easement, and provide an endowment sufficient to fund the Long-Term Management Plan. • An overall assessment of the condition of the wetlands permanently impacted by the proposed project shall be conducted using the California Rapid Assessment Method (CRAM) for depressional wetlands, or a hybrid approach based on CRAM. Each similar wetland type that may be impacted shall be assessed to describe the floristic community and record the native and non-native dominant plants within the vernal pool and palustrine emergent wetlands. Physical structure such as topographic	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	complexity and physical features that may provide habitat for aquatic species (e.g., boulders, woody debris etc.) shall be recorded and used to design the created/established wetlands. The purpose of this assessment is to ensure the design of the wetlands shall provide habitat that is similar to the wetlands being impacted to ensure the impacted wetlands are mitigated in-kind.	
Impact BIO-4: The proposed project would not have substantial adverse impacts on fish or wildlife movement.	No mitigation is necessary.	Less than significant impact.
Impact BIO-5: The project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	No mitigation is necessary.	No impact.
Impact BIO-6: The proposed project may conflict with applicable provisions of the Solano Multiple Species Habitat Conservation Plan.	**MM BIO-6:** At the time building permits are issued, the applicant shall pay mitigation fees to the City of Suisun City in accordance with the provisions of the Solano Multiple Species Habitat Conservation Plan (Solano MSHCP), provided that the plan has been adopted and the fee program has been established. Additionally, if the plan is adopted, the applicant shall comply with the applicable provisions of the Solano MSHCP that pertain to plant and wildlife surveys and mitigation requirements (e.g., no net loss of habitat).	Less than significant impact.
Section 3.4—Cultural and Tribal Cultural Resources		
Impact CUL-1: The proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.	None required.	No impact.
Impact CUL-2: The proposed project may cause a substantial adverse change in the significance of a historical resource of an archaeological nature or a unique archaeological resource.	**MM CUL-2:** (a) Prior to the initiation of construction activities, all construction personnel conducting ground disturbance at the site shall be provided a Worker Environmental Awareness Program (WEAP) cultural resources "tailgate" training. The training shall include visual aids, a discussion of applicable laws and statutes relating to archaeological resources, types of resources that may be found within the project site, and procedures to be followed in the event such resources are encountered. The	Less than significant impact.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	training shall be conducted by an Archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for archaeology and any Native American Monitors or representatives consulting on the project. This shall be followed by an Archaeological Monitor reporting to the qualified Archaeologist, along with a Tribal Monitor, shall be present during all ground disturbance activities, including backhoe trenching and excavation. In the event a potentially significant cultural resource is encountered during subsurface earthwork activities, all construction activities within a 100-foot radius of the find shall cease and workers should avoid altering the materials until an Archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for archaeology has evaluated the find. The project applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Potentially significant cultural resources consist of but are not limited to stone, bone, glass, ceramics, fossils, wood, or shell artifacts, or features including hearths, structural remains, or historic dumpsites. The Archaeologist and the Tribal Monitor shall assess the find to determine whether it includes Tribal Cultural Resources (TCRs), historical resources of an archaeological nature, or unique archaeological resources. (b) If the Archaeologist, in collaboration with the Tribal Monitor, determines that the find does not include cultural resources in any of one of these three categories, work may resume immediately. (c) If the Tribal Monitor determines that the find appears to constitute a TCRs, then the Archaeologist or Tribal Monitor shall immediately notify the City Development Services Director (CDSD), the landowner, and any other Native American representative from any traditionally and culturally affiliated Native American Tribes that requested consultation. The Tribal Monitor or any other consulting Native American representative shall be invited to assess the significance of the find and to make recommendations for further evaluation and treatment, as necessary. If no such representative can be notified or any such representative is notified but fails to respond on a timely basis (e.g., within three days), the Archaeologist may develop, for consideration by the CDSD, a proposed mitigation program that treats the TCRs with	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	appropriate dignity, consistent with the requirements of paragraph (e) and MM CUL-4 below. (d) If the Tribal Monitor or any other consulting Native American representative determines that the find does not constitute a TCRs but does constitute either a historical resource of an archaeological nature or a unique archaeological resource, he or she shall immediately notify the Archaeologist, the CDSD and the landowner, and shall develop mitigation or treatment measures for consideration and approval by the CDSD. Mitigation shall be developed and implemented in accordance with Public Resources Code Section 21083.2 and Section 15126.4 of the CEQA Guidelines, with a preference for preservation in place. Consistent with Section 15126.4(b)(3), preservation in place may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If approved by the CDSD, such measures shall be implemented and completed prior to commencing further work for which grading or building permits were issued, unless otherwise directed by the CDSD. (e) Avoidance or preservation of TCRs, unique archaeological resources, or historical resources of an archaeological nature shall not be required where such avoidance or preservation in place would preclude the construction of important structures or infrastructure or require exorbitant expenditures, as determined by the CDSD. Where avoidance or preservation are not appropriate for these reasons, the Archaeologist, in consultation with the CDSD and (for TCRs, any Native American representative who has timely responded after notification), shall prepare a detailed recommended treatment plan as outlined in MM CUL-4 for consideration and approval by the CDSD, which may include data recovery (unless the Native American representative objects with respect to TCRs). If employed, data recovery strategies for unique archaeological resources that do not also qualify as historical resources of an archaeological nature shall follow the applicable requirements and limitations set forth in Public Resources Code Section 21083.2. Data recovery will normally consist of (but would not be limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim of recovering important scientific	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	data contained within the unique archaeological resource or historical resource of an archaeological nature. The data recovery plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and State repositories, libraries, and interested professionals. If data recovery is determined by the CDSD to not be appropriate, then an equally effective treatment shall be proposed and implemented. Any previously undiscovered resources found during construction within the project site shall be recorded on appropriate California Department of Parks and Recreation (DPR) 523 forms and shall be submitted to the City of Suisun, the Northwest Information Center (NWIC), and the California Office of Historic Preservation (OHP), as required. (f) Work may not resume within the no-work radius until the CDSD, in consultation with the Archaeologist and Native American representative, determines that the site either: (1) does not contain unique archaeological resources or historical resources of an archaeological nature; or (2) that the preservation and/or treatment measures have been completed to the satisfaction of the CDSD.	
Impact CUL-3: The proposed project may disturb human remains, including those interred outside of formal cemeteries.	**MM CUL-3:** In the event of the accidental discovery or recognition of any human remains, CEQA Guidelines Section 15064.5, Health and Safety Code Section 7050.5, and Public Resources Code Sections 5097.94 and Section 5097.98 shall be followed. If, during the course of project construction, there is accidental discovery or recognition of any human remains, the following steps shall be taken: 1. There shall be no further excavation or disturbance within 100 feet of the remains until the County Coroner is contacted to determine whether the remains are Native American and if an investigation of the cause of death is required. If the Coroner determines the remains to be Native American, the Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours, and the NAHC shall identify the person or persons it believes to be the Most Likely Descendant (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work within 48 hours, for means of treating or disposing	Less than significant impact.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resource Code Section 5097.98. 2. Where the following conditions occur, the landowner or his or her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the MLD or on the project site in a location not subject to further subsurface disturbance: • The NAHC is unable to identify an MLD or the MLD failed to make a recommendation within 48 hours after being notified by the commission. • The descendant identified fails to make a recommendation. • The landowner or his authorized representative rejects the recommendation of the descendant, and mediation by the NAHC fails to provide measures acceptable to the landowner. Additionally, California Public Resources Code Section 15064.5 requires the following relative to Native American remains: • When an initial study identifies the existence of, or the probable likelihood of, Native American remains within a project, a lead agency shall work with the appropriate Native Americans as identified by the NAHC as provided in Public Resources Code Section 5097.98. The applicant may develop a plan for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American Burials with the appropriate Native Americans as identified by the NAHC.	
Impact CUL-4: The proposed project would not cause a substantial adverse change in the significance of a Tribal Cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of	None required.	No impact.

Impacts	Mitigation Measures	Level of Significance After Mitigation
historical resources as defined in Public Resources Code Section 5020.1(k).		
Impact CUL-5: The proposed project could 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 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.	Implementation of MM CUL-2 and MM CUL-3 and: **MM CUL-4: Treatment Protocol for Handling Human Remains and Cultural Items Affiliated with the Yocha Dehe Wintun Nation** The purpose of this Protocol is to formalize procedures for the treatment of Native American human remains, grave goods, ceremonial items, and items of cultural patrimony, in the event that any are found in conjunction with development, including archaeological studies, excavation, geotechnical investigations, grading, and any ground-disturbing activity. This Protocol also formalizes procedures for Tribal monitoring during archaeological studies, grading, and ground-disturbing activities. **I. Cultural Affiliation** The Yocha Dehe Wintun Nation traditionally occupied lands in Yolo, Solano, Lake, Colusa and Napa Counties. The Tribe has designated its Cultural Resources Committee (Committee) to act on the Tribe's behalf with respect to the provisions of this Protocol. Any human remains which are found in conjunction with projects on lands culturally-affiliated with the Tribe shall be treated in accordance with Section III of this Protocol. Any other cultural resources shall be treated in accordance with Section IV of this Protocol. **II. Inadvertent Discovery of Native American Human Remains** Whenever Native American human remains are found during the course of a project, the determination of Most Likely Descendant (MLD) under California Public Resources Code Section 5097.98 will be made by the Native American Heritage Commission (NAHC) upon notification to the NAHC of the discovery of said remains at a project site. If the location of the site and the history and prehistory of the area is culturally-affiliated with the Tribe, the NAHC contacts the Tribe; a Tribal member shall be designated by the Tribe to consult with the landowner and/or project applicant. Should the NAHC determine that a member of an Indian Tribe other than Yocha Dehe Wintun Nation is the MLD, and the Tribe is in	Less than significant impact.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	agreement with this determination, the terms of this Protocol relating to the treatment of such Native American human remains shall not be applicable; however, that situation is very unlikely. **III. Treatment of Native American Remains** In the event that Native American human remains are found during development of a project and the Tribe or a member of the Tribe is determined to be MLD pursuant to Section II of this Protocol, the following provisions shall apply. The Medical Examiner shall immediately be notified, ground-disturbing activities in that location shall cease and the Tribe shall be allowed, pursuant to California Public Resources Code Section 5097.98(a), to (1) inspect the site of the discovery and (2) make determinations as to how the human remains and grave goods should be treated and disposed of with appropriate dignity. The Tribe shall complete its inspection and make its MLD recommendation within forty- eight (48) hours of getting access to the site. The Tribe shall have the final determination as to the disposition and treatment of human remains and grave goods. Said determination may include avoidance of the human remains, reburial on-site, or reburial on Tribal or other lands that will not be disturbed in the future. The Tribe may wish to rebury said human remains and grave goods or ceremonial and cultural items on or near the site of their discovery, in an area which will not be subject to future disturbances over a prolonged period of time. Reburial of human remains shall be accomplished in compliance with the California Public Resources Code Sections 5097.98(a) and (b). The term "human remains" encompasses more than human bones because the Tribe's traditions call for the burial of associated cultural items with the deceased (funerary objects), and/or the ceremonial burning of Native American human remains, funerary objects, grave goods and animals. Ashes, soils and other remnants of these burning ceremonies, as well as associated funerary objects and unassociated funerary objects buried with or found near the Native American	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	remains are to be treated in the same manner as bones or bone fragments that remain intact. **IV. Non-disclosure of Location of Reburials** Unless otherwise required by law, the site of any reburial of Native American human remains shall not be disclosed and will not be governed by public disclosure requirements of the California Public Records Act, California Government Code Section 6250 *et seq*. The Medical Examiner shall withhold public disclosure of information related to such reburial pursuant to the specific exemption set forth in California Government Code Section 6254(r). The Tribe will require that the location for reburial is recorded with the California Historic Resources Inventory System (CHRIS) on a form that is acceptable to the CHRIS center. The Tribe may also suggest that the landowner enter into an agreement regarding the confidentiality of site information that will run with title on the property. **V. Treatment of Cultural Resources** Treatment of all cultural items, including ceremonial items and archaeological items will reflect the religious beliefs, customs, and practices of the Tribe. All cultural items, including ceremonial items and archaeological items, which may be found at a project site should be turned over to the Tribe for appropriate treatment, unless otherwise ordered by a court or agency of competent jurisdiction. The project applicant should waive any and all claims to ownership of Tribal ceremonial and cultural items, including archaeological items, which may be found on a project site in favor of the Tribe. If any intermediary, (for example, an Archaeologist retained by the project applicant) is necessary, said entity or individual shall not possess those items for longer than is reasonably necessary, as determined solely by the Tribe. **VI. Inadvertent Discoveries** If additional significant sites or sites not identified as significant in a project environmental review process, but later determined to be significant, are located within a project impact area, such sites will be subjected to further archaeological and cultural significance evaluation by the project applicant, the Lead Agency, and the Tribe to determine	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	whether additional mitigation measures are necessary to treat sites in a culturally appropriate manner consistent with CEQA requirements for mitigation of impacts to cultural resources. If there are human remains present that have been identified as Native American, all work shall cease for a period of up to 30 days in accordance with federal law. **VII. Work Statement for Tribal Monitors** The description of work for Tribal Monitors of the grading and ground-disturbing operations at the development site is attached hereto as Addendum I and incorporated herein by reference.	
Section 3.5—Geology, Soils, and Seismicity		
Impact GEO-1: The proposed project may expose people or structures to potential substantial adverse effects associated with seismic hazards.	**MM GEO-1:** Prior to the issuance of a grading permit for each structure, the project applicant shall submit a design-level Geotechnical Investigation to the City of Suisun City for review and approval. The investigation shall be prepared by a qualified engineer and identify grading and building practices necessary to achieve compliance with the latest adopted edition of the California Building Standards Code (CBC) geologic, soils, and seismic requirements, including abatement of expansive soil conditions. The report shall also determine the final design parameters for walls, foundations, foundation slabs, and surrounding related improvements (e.g., utilities roadways, parking lots, and sidewalks). The measures identified in the approved report shall be incorporated into the project plans and all applicable construction-related permits.	Less than significant impact.
Impact GEO-2: The proposed project may result in substantial soil erosion or the loss of topsoil.	Implement MM HYD-1a.	Less than significant impact.
Impact GEO-3: The proposed project would not be located on an unstable geologic unit or soil.	No mitigation is necessary.	Less than significant impact.
Impact GEO-4: The proposed project may create substantial risks to life or property as a result of expansive soil conditions on the project site.	Implement MM GEO-1.	Less than significant impact.
Impact GEO-5: The proposed project may directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	**MM GEO-5:** Prior to the initial ground disturbance phases, a professional Paleontologist acceptable to the City of Suisun City's Development Services Director or the Director's designee shall provide training to construction	Less than significant impact.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	personnel regarding paleontological resources. During the initial ground disturbance phases, the professional Paleontologist shall be present to spot check excavations for paleontological resources. If potential fossils are discovered during project implementation, all earthwork or other types of ground disturbance within 100 feet of the find shall stop immediately until a qualified professional Paleontologist can assess the nature and importance of the find. The Paleontologist shall report his or her findings to the City of Suisun City. Based on the scientific value or uniqueness of the find, the Paleontologist shall either record the find and recommend that the City of Suisun City allow work to continue, or recommend salvage and recovery of the fossil. The City shall implement the recommended measures if the City determines that they are feasible in light of project design, logistics, and cost considerations. The Paleontologist, if requested by the City, may also propose modifications to the stop-work radius based on the nature of the find, site geology, and the activities occurring on the site. If treatment and salvage are required, recommendations will be consistent with Society of Vertebrate Paleontology guidelines and currently accepted scientific practice. If required, treatment for fossil remains shall include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection, and, if required, shall also include preparation of a report for publication describing the finds.	
Section 3.6—Greenhouse Gas Emissions and Energy		
Impact GHG-1: The proposed project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	**MM GHG-1a:** Prior to the issuance of any grading permits, the project applicant shall provide the Suisun City Planning Department with documentation (e.g., site plans) demonstrating project construction will include the following construction Best Management Practices (BMPs): • At least 15 percent of the construction fleet for each project phase shall be alternatively fueled or electric. • At least 10 percent of building materials used for project construction shall be sourced from local suppliers. • At least 65 percent of construction and demolition waste materials shall be recycled or reused. **MM GHG-1b:** Prior to the issuance of any building permits, the project applicant shall provide the Suisun City Planning Department with	Significant and unavoidable impact.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	documentation (e.g., site plans) demonstrating the proposed project is designed without the use of any natural gas -fueled appliances or natural gas plumbing. **MM GHG-1c:** The electricity demand for the project shall be supplied with 100 percent carbon-free electricity sources through the year 2045. Prior to the issuance of any certificate of occupancy for the proposed project, the project applicant shall provide the City with documentation, to the City's satisfaction, demonstrating the electricity demand will be supplied with 100 percent carbon-free electricity sources for a 30-year period. These sources may include, but are not limited to, on-site renewable generation system(s), Pacific Gas and Electric Company (PG&E) 100 Percent Solar Choice electricity service option, or Marin Clean Energy's (MCE) Deep Green 100 percent renewable electricity service option. If an on-site generation system (e.g., solar) is selected to satisfy this mitigation measure and the system will not be able to supply enough electricity to satisfy peak demand, the project applicant shall, prior to the issuance of the certificate of occupancy for the proposed project, provide the City with documentation demonstrating that the additional electricity demand will be supplied with 100 percent carbon-free electricity sources. These sources may include, but are not limited to, PG&E's 100 Percent Solar Choice electricity service option or MCE's Deep Green 100 percent renewable electricity service option. This documentation shall also demonstrate that 100 percent carbon-free electricity sources will be utilized for at least 30 years. To monitor and ensure that 100 percent of electricity demand generated by the proposed project is supplied with 100 percent carbon-free electricity sources, the project applicant shall maintain records for 30 years of all electricity consumption and supply associated with the proposed project's operation and make these records available to the City upon request. **MM GHG-1d:** Prior to the issuance of any building permits, the project applicant shall demonstrate to the satisfaction of the Suisun City Planning Department (e.g., shown on-site plans), that each loading dock is each outfitted with at least one 240-volt outlet to accommodate truck and	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	Transport Refrigeration Unit (TRU) charging and/or electrical power connection while trucks are loading and unloading goods	
Impact GHG-2: The proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.	No mitigation is necessary.	Less than significant impact.
Impact GHG-3: The proposed project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	No mitigation is necessary.	Less than significant impact.
Impact GHG-4: The proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency?	No mitigation is necessary.	Less than significant impact.
Section 3.7—Hazards and Hazardous Materials		
Impact HAZ-1: The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	No mitigation is necessary.	Less than significant impact.
Impact HAZ-2: The proposed project may create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.	**MM HAZ-2:** Prior to the first ground-disturbing activities, the applicant shall implement the following measures to protect underground pipelines: • The applicant shall notify the Underground Service Alert of Northern California (USA North 811) system (or successor) to mark the location of all pipelines. Pipelines shall be marked prior to ground-disturbing activities. • The location of all pipelines shall be shown on all relevant construction plans. • Notes shall be provided on these plans advising contractors of the presence of the pipelines, safety measures to protect the pipeline (e.g., excavation regulations), and contact information for the pipeline operator.	Less than significant impact.

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact HAZ-3: The proposed project may be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.	**MM HAZ-3a:** Prior to issuance of the first grading permit, the project applicant shall retain a qualified hazardous materials contractor to conduct soil testing for the presence of residual concentrations of pesticides and organochlorine termiticides. The testing shall occur in accordance with California Department of Toxic Substances Control (DTSC) "Proven Technologies and Remedies Guidance, Remediation of Organochlorine Pesticides in Soil" or equivalent guidance. If residual concentrations exceed applicable standards for nonresidential development, the applicant shall abate or remove impacted soil prior to the first grading activities. As part of the grading permit application, the applicant shall submit documentation to the City confirming that soil testing occurred and that any necessary abatement activities were successfully completed. **MM HAZ-3b:** Prior to issuance of the first grading permit, the project applicant shall retain a qualified hazardous materials contractor to investigate the presence or absence of asbestos-containing materials (ACM) and lead-based paint (LBP). If ACMs or LBP is found to be present, they should be removed prior to the first grading activities. As part of the grading permit application, the applicant shall submit documentation to the City confirming that an investigation occurred and that any necessary abatement activities were successfully completed. **MM HAZ-3c:** Prior to issuance of the first grading permit, the project applicant shall retain a qualified hazardous materials contractor to investigate the presence or absence of septic systems or wells. If septic systems or wells are found to be present, they shall be destroyed in accordance with the procedures set forth in Solano County Code Chapter 6.4 (septic systems) and Chapter 13.10 (wells) unless they are proposed to be retained. As part of the grading permit application, the applicant shall submit documentation to the City confirming that an investigation occurred and that any necessary abatement activities were successfully completed.	Less than significant impact.
Impact HAZ-4: The proposed project may result in a safety hazard for people residing or working the project area.	Implement MM AES-3	Less than significant impact.
Section 3.8—Hydrology and Water Quality		

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact HYD-1: Construction activities and changes to drainage patterns associated with the proposed project may degrade surface water quality in downstream water bodies.	**MM HYD-1a:** Prior to issuance of grading permits for the proposed project, Suisun City shall verify that the applicant has prepared a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the requirements of the statewide Construction General Permit. The SWPPP shall be designed to ensure that: (1) all pollutants and their sources, including sources of sediment associated with construction, construction site erosion, and all other activities associated with construction activity are controlled; (2) where not otherwise required to be under a Regional Water Quality Control Board (RWQCB) permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated; (3) site Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity; and (4) stabilization BMPs are installed to reduce or eliminate pollutants after construction is completed. The SWPPP shall be prepared by a qualified SWPPP developer. The SWPPP shall include the minimum BMPs required for the identified Risk Level. BMP implementation shall be consistent with the BMP requirements in the most recent version of the California Stormwater Quality Association (CASQA) Stormwater Best Management Handbook–Construction or the Caltrans Stormwater Quality Handbook Construction Site BMPs Manual. The SWPPP shall be implemented during construction. **MM HYD-1b:** Prior to the issuance of building permits, the project applicant shall submit a Stormwater Control Plan to the City of Suisun City for review and approval. The plan shall be developed using the California Stormwater Quality Association (CASQA) "New Development and Redevelopment Handbook" and reflect the applicable provisions of Section C.3 of the San Francisco Bay Regional Water Quality Control Board (RWQCB) Municipal Regional Permit (MRP) (Order No. R2-2015-0049, National Pollutant Discharge Elimination System [NPDES] Permit No. CAS612008) (or more recent permit). The Stormwater Control Plan shall identify pollution prevention measures and Best Management Practices (BMPs) necessary to control stormwater pollution from operational activities and facilities and provide for appropriate maintenance over time. The Stormwater Control Plan shall include Low Impact Development (LID) design concepts, as well as concepts that are intended to accomplish a "first flush" objective that	Less than significant impact.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	would remove contaminants from the first 2 inches of stormwater before it enters area waterways. The project applicant shall also prepare for City approval and enter into an Operations and Maintenance Agreement with the City identifying procedures to ensure that stormwater quality control measures work properly during operations.	
Impact HYD-2: The proposed project would not deplete groundwater supplies or interfere substantially with groundwater recharge.	No mitigation is necessary.	Less than significant impact.
Impact HYD-3: The proposed project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems.	No mitigation is necessary.	Less than significant impact.
Impact HYD-4: The proposed project would not place housing or structures within a 100-year flood hazard area.	No mitigation is necessary.	Less than significant impact.
Impact HYD-5: The proposed project would not be susceptible to inundation from dam failure.	No mitigation is necessary.	Less than significant impact.
Section 3.9—Land Use		
Impact LUP-1: The proposed project would not conflict with any applicable provisions of the City of Suisun City General Plan.	No mitigation is necessary.	Less than significant impact.
Impact LU-2: The proposed project would not conflict with any applicable provisions of the Suisun City Code.	No mitigation is necessary.	Less than significant impact.
Impact LU-3: The proposed project would not conflict with applicable provisions of the Travis Air Force Base Land Use Compatibility Plan.	No mitigation is necessary.	Less than significant impact.
Impact LU-4: The proposed project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance)	No mitigation is necessary.	Less than significant impact.

Impacts	Mitigation Measures	Level of Significance After Mitigation
adopted for the purpose of avoiding or mitigating an environmental effect.		
Section 3.10—Noise		
Impact NOI-1: The proposed project could generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	**MM NOI-1:** Implementation of the following multi-part mitigation measure is required to reduce potential construction-period noise impacts: • The construction contractor shall ensure that all equipment driven by internal combustion engines shall be equipped with mufflers, which are in good condition and appropriate for the equipment. • The construction contractor shall ensure that unnecessary idling of internal combustion engines (i.e., idling in excess of 5 minutes) is prohibited. • The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists. • At all times during project grading and construction, the construction contractor shall ensure that stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from adjacent residences. • The construction contractor shall ensure that the construction staging areas shall be located to create the greatest feasible distance between the staging area and noise-sensitive receptors nearest the project site. • The construction contractor shall ensure that general construction activity, including loading and unloading and warm up of equipment, shall be restricted to the hours of 7:00 a.m. and 8:00 p.m., Monday through Friday, and 8:00 a.m. and 8:00 p.m. on Saturday and Sunday. Construction activity for earthwork, trenching, concrete, or paving, the hours of work activity on the site shall be restricted to between the hours of 7:00 a.m. and 6:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 5:00 p.m. on Saturday.	Less than significant impact.
Impact NOI-2: The proposed project would not generate a substantial permanent increase in ambient noise levels in noise-sensitive locations in the project vicinity.	No mitigation is necessary.	Less than significant impact.
Impact NOI-3: The proposed project would not result in generation of excessive groundborne vibration or groundborne noise levels.	No mitigation is necessary.	Less than significant impact.

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact NOI-4: The proposed project would not expose people residing or working in the project area to excessive noise levels for a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport.	No mitigation is necessary.	Less than significant impact.
Section 3.11—Public Services		
Impact PS-1: The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire facilities.	No mitigation is necessary.	Less than significant impact.
Impact PS-2: The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities.	No mitigation is necessary.	Less than significant impact.
Section 3.12—Transportation		
Impact TRANS-1a: The proposed project may conflict with a program plan, ordinance or policy of the circulation system, With regard to intersection operations, roadway segment operations and queueing.	**MM TRANS-1a:** Prior and as a condition of issuance of certificates of occupancy for the proposed project, the applicant shall work with the City of Fairfield regarding the implementation of traffic signal timing optimization at the Air Base Parkway/Walters Road intersection. The applicant is responsible for the full cost required to implement the new traffic signal timing. This mitigation measure shall not apply if the overseeing agency does not support the proposed timing improvements. **MM TRANS-1b:** Prior to and as a condition of issuance of certificates of occupancy for the proposed project, the westbound left-turn lane storage at the intersection of Petersen Road/Walters Road intersection shall be restriped from 115 feet to 200 feet, and the traffic signal and signal phasing shall be modified so that the east–west approaches have protected left-turn phasing. In order to prevent conflicts between southbound left-turning drivers and gas station patrons exiting from the Walters Road driveway, the driveway egress shall be restricted to right-turn only, with associated signing and striping indicating this. The southbound left-turn lane at the Petersen Road/Walters Road intersection shall be extended from 100 feet	Significant and unavoidable impact.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	to 150 feet. The applicant is responsible for the full cost of the improvements. **MM TRANS-1c:** Prior to and as a condition of issuance of certificates of occupancy for the proposed project the applicant shall work with the City of Suisun City and the California Department of Transportation (Caltrans) to optimize the traffic signal timing splits at the intersection of Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway. The applicant is responsible for the full cost to implement the new signal timing. This mitigation measure shall not apply if Caltrans does not support the proposed changes. **MM TRANS-1d:** Future monitoring shall be conducted during shift change times to determine whether there is deficient queueing storage at Petersen Road/Walters Road, Walmart Driveway/Walters Road, and/or Rio Vista Road (SR-12)/Walters Road. If deficient queueing is observed, the applicant shall work with the City and the California Department of Transportation (Caltrans) to implement a traffic signal coordination plan for these shift time peak periods. In order to accommodate the projected queue lengths, if monitoring indicates that additional storage length is required, the westbound left-turn lane at Petersen Road/Walters Road shall be extended from 115 feet to 305 feet and the Rio Vista Road (SR-12)/Walters Road traffic signal shall be modified to include a southbound right-turn overlap phase. The applicant is responsible for the full cost of this mitigation measure. This mitigation measure shall not apply if Caltrans does not support the proposed improvements. **MM TRANS-1e:** Future monitoring shall be conducted to determine whether there is deficient queueing storage at Walmart Driveway/Walters Road, and/or Rio Vista Road (SR-12)/Walters Road. The applicant shall work with the City and the California Department of Transportation (Caltrans) to implement a traffic signal coordination plan. In order to accommodate the projected queue lengths, if monitoring determines that additional storage length is required, the Rio Vista Road (SR-12)/Walters Road signal be modified to include a southbound right-turn overlap phase. To address the northbound left-turn storage lane cumulative queueing deficiency, a second northbound left-turn storage lane shall be added at the intersection of Walmart Driveway/Walters Road; however, given that the improvement	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	would require acquisition of private property, the northbound queueing impact would be significant and unavoidable. The applicant is responsible for the full cost of this mitigation measure. This mitigation measure shall not apply if Caltrans does not support the proposed improvements.	
Impact Trans-1b: The proposed project may conflict with a program plan, ordinance or policy of the circulation system, in regard to transit, roadway, bicycle and pedestrian facilities.	None required.	Less than significant impact.
Impact TRANS-2: The proposed project may conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).	**MM TRANS-2a:** Prior to issuance of the first certificate of occupancy, the applicant shall prepare a Transportation Demand Management (TDM) and monitoring plan for review and acceptance by the City of Suisun City. TDM strategies shall include at least the following to achieve a 5.6 percent reduction in VMT. Additional TDM strategies that could further reduce VMT may become feasible and implementable later in the project development process. The City shall, at its discretion, require periodic reporting by the applicant to confirm the effectiveness of TDM strategies. 1. Showers and lockers to promote biking and walking as commute options; 2. Vanpool program; 3. Do-it-yourself bicycle repair stations; 4. Guaranteed Ride Home program; 5. Designating a Transportation Coordinator; 6. Preferential carpool and vanpool parking; 7. Web portal for carpooling.	Significant and unavoidable impact.
Impact TRANS-3: The proposed project may substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	**MM TRANS-3a:** Prior to issuance of building permits, the applicant shall prepare and submit improvement plans with truck turning movements for approval by the City of Suisun City demonstrating that all driveways intended for truck access are designed to meet standards for vehicles with large turning radii. The Walters Road driveway shall be designed, striped, and signed to discourage truck drivers from entering, although trucks could still maneuver through the driveway. **MM TRANS-3b:** Prior to issuance of building permits, the applicant shall prepare and submit improvement plans incorporating for each driveway on Petersen Road, “KEEP CLEAR” pavement markings in the dedicated	Less than significant impact.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	eastbound truck lane and "DO NOT BLOCK DRIVEWAY" signs facing eastbound traffic. The applicant shall coordinate with the City of Suisun City to install any devices within the City's right-of-way. **MM TRANS-3c:** Prior to issuance of building permits, the applicant shall prepare and submit improvement plans for approval by the City of Suisun City for a northbound right-turn lane at the Main Driveway/Walters Road intersection. **MM TRANS-3d:** Prior to issuance of building permits, the applicant shall prepare and submit improvement plans for approval by the City of Suisun City demonstrating that on-site available storage capacity at the northbound Driveway 3 shall be sufficient for at least five passenger vehicles (up to 125 feet). **MM TRANS-3e:** Prior to and as a condition of issuance of certificates of occupancy for the occupancy of the proposed project, the applicant shall work with the City to implement prepare the signal timing for the intersection of Petersen Road/Walters Road so that the east–west left-turning phases do not coincide. The applicant is responsible for the full cost of this improvement. **MM TRANS-3f:** Prior to issuance of building permits, the applicant shall prepare and submit on-site plans for approval by the City of Suisun City indicating the on-site signing, striping, and traffic control of the on-site intersection 50 feet to the east of the Walters Road/Main Driveway intersection. The intersection shall be striped per the most recent California Manual on Uniform Traffic Control Devices (CA-MUTCD) guidance and have two-way north–south stop control.	
Impact TRANS-4: The proposed project may result in inadequate emergency access.	Implement MM TRANS-3a.	Less than significant impact.
Section 3.13—Utilities and Service Systems		
Impact USS-1: The proposed project would not require new or expanded water supply entitlements that have physical impacts on the environment.	No mitigation is necessary.	Less than significant impact.

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact USS-2: The proposed project would not create a need for new or expanded wastewater collection or treatment facilities.	No mitigation is necessary.	Less than significant impact.
Impact USS-3: The proposed project would not create a need for new or expanded downstream storm drainage facilities.	No mitigation is necessary.	Less than significant impact.
Impact USS-4: The proposed project's solid waste would not create a need for additional landfill capacity.	No mitigation is necessary.	Less than significant impact.

CHAPTER 1: INTRODUCTION

1.1 - Overview of the CEQA Process

This Draft Environmental Impact Report (Draft EIR) is prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with the implementation of the Suisun Logistics Center Project (State Clearinghouse No. 2021010044). This document is prepared in conformance with CEQA (California Public Resources Code [PRC], § 21000, *et seq*.) and the CEQA Guidelines (California Code of Regulations [CCR], Title 14, § 15000, *et seq*.). This Draft EIR is intended to serve as an informational document for the public agency decision makers and the public regarding the proposed project.

1.1.1 - Overview

The proposed project consists of the annexation of the 167-acre project site into the Suisun City limits and the development of 2.1 million square feet of high-cube warehouse on 120 acres. The remaining 47 acres would be preserved as open space. Vehicular access would be taken from Walters Road and Petersen Road. Section 2, Project Description provides a complete description of the project.

1.1.2 - Purpose and Authority

This Draft EIR provides a project-level analysis of the environmental effects of the Suisun Logistics Center Project. The environmental impacts of the proposed project are analyzed in the EIR to the degree of specificity appropriate, in accordance with CEQA Guidelines Section 15146. This document addresses the potentially significant adverse environmental impacts that may be associated with the planning, construction, or operation of the project. This document also identifies potentially feasible mitigation measures and alternatives that agency decisionmakers may adopt to substantially reduce or avoid these significant impacts. (See, e.g., *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 981, 999 [alternatives set forth in an EIR should be considered only "potentially feasible," as the agency decision-making body, at the time of project approval, determines whether they are "actually feasible"]; *San Diego Citizenry Group v. County of San Diego* (2013) 219 Cal.App.4th 1, 18 [the same is true of mitigation measures, which decision-makers can also reject as infeasible].)

CEQA requires that an EIR contain, at a minimum, certain specific elements. These elements are contained in this Draft EIR and include:

- Table of Contents
- Introduction
- Executive Summary
- Project Description
- Environmental Setting, Significant Environmental Impacts, and Mitigation Measures
- Cumulative Impacts
- Significant Unavoidable Adverse Impacts
- Alternatives to the Proposed Project

- Growth-Inducing Impacts
- Effects Found not to be Significant
- Areas of Known Controversy

1.1.3 - Lead Agency Determination

The City of Suisun City is designated as the lead agency for the project. CEQA Guidelines Section 15367 defines the lead agency as ". . . the public agency, which has the principal responsibility for carrying out or approving a project." Other public agencies may use this Draft EIR in the decision-making or permit process and consider the information in this Draft EIR along with other information that may be presented during the CEQA process.

This Draft EIR was prepared by FirstCarbon Solutions (FCS), an environmental consultant. Prior to public review, it was extensively reviewed and evaluated by the City of Suisun City. This Draft EIR reflects the independent judgment and analysis of the City of Suisun City as required by CEQA. Lists of organizations and persons consulted, and the report preparation personnel is provided in Section 8, Persons and Organizations/List of Preparers, of this Draft EIR, respectively.

1.2 - Scope of the EIR

This Draft EIR addresses the potential environmental effects of the proposed project. The City of Suisun City issued a Notice of Preparation (NOP) for the proposed project on January 6, 2021, which was circulated between January 6, 2021 and February 4, 2021 for the statutory 30-day public review period. The scope of this Draft EIR includes the potential environmental impacts identified in the NOP and issues raised by agencies and the public in response to the NOP. The NOP is contained in Appendix A of this Draft EIR.

Nine comment letters were received in response to the NOP. They are listed in Table 1-1 and provided in Appendix A of this Draft EIR.

Table 1-1: NOP Comment Letter Summary

Status	Affiliation	Signatory	Date
Public Agencies	Native American Heritage Commission	Nancy Gonzalez-Lopez, Cultural Resources Analyst	January 6, 2021
	California Air Resources Board	Heather Arias, Chief, Transportation and Air Toxics	January 28, 2021
	California Department of Fish and Wildlife	Greg Erickson, Regional Manager, Bay Delta Region	January 29, 2021
	Solano County Department of Resource Management	Matt Walsh, Principal Planner	January 29, 2021
	Solano Local Agency Formation Commission	Michelle McIntyre, Senior Analyst	February 4, 2021
	California Department of Transportation, District 4	Mark Leong, District Branch Chief	February 4, 2021

Status	Affiliation	Signatory	Date
Private Parties	United Brotherhood of Carpenters and Joiners of America, Carpenters Local No. 180	Fidel Chavez, Senior Field Representative	February 3, 2021
	Center for Biological Diversity	Tiffany Yap, Staff Scientist; Mary Rassenfoss, Legal Fellow	February 3, 2021
	Solano County Orderly Growth Committee	Bob Berman	February 3, 2021
Source: City of Suisun City, 2021.			

1.2.1 - Scoping Meeting

Pursuant to CEQA Guidelines Section 15082(c)(1), the City of Suisun City held a virtual public scoping meeting for the proposed project on Tuesday, January 26, 2021. The meeting was recorded and is posted on the City of Suisun City's website: www.suisun.com.

1.2.2 - Environmental Issues Determined not to be Significant

The NOP identified topical areas that were determined not to be significant. Consistent with CEQA Guidelines Section 15128, an explanation of why each area is determined not to be significant is provided in Section 7, Effects Found not to be Significant. These topical areas are as follows:

- Agriculture and Forest Resources
- Mineral Resources
- Population and Housing
- Recreation
- Wildfire

In addition, certain subjects with various topical areas were determined not to be significant. Other potentially significant issues are analyzed in these topical areas; however, the following issues are not analyzed:

- State Scenic Highways
- Septic or Alternative Wastewater Disposal Systems
- Exposure of Schools to Hazardous Materials
- Private Airstrips
- Emergency Response or Evacuation Plan
- Wildland Fire
- Levee or Dam Failure
- Seiches, Tsunamis, or Mudflows
- Division of an Established Community
- Schools
- Parks
- Other Public Facilities

An explanation of why each issue is determined not to be significant is provided in Section 7, Effects Found not to be Significant.

1.2.3 - Potentially Significant Environmental Issues

The NOP found that the following topical areas may contain potentially significant environmental issues that will require further analysis in the EIR. These sections are as follows:

- Aesthetics, Light, and Glare
- Air Quality
- Biological Resources
- Cultural Resources and Tribal Cultural Resources
- Geology, Soils, and Seismicity
- Greenhouse Gas Emissions/Energy
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise
- Public Services
- Transportation
- Utility Systems

1.3 - Organization of the EIR

This Draft EIR is organized into the following main sections:

- **Executive Summary.** This chapter includes a summary of the proposed project and alternatives to be addressed in the Draft EIR. A brief description of the areas of controversy and issues to be resolved, and overview of the Mitigation Monitoring and Reporting Program (MMRP), in addition to a table that summarizes the impacts, mitigation measures, and level of significance after mitigation, are also included in this section.
- **Chapter 1: Introduction.** This chapter provides an introduction and overview describing the purpose of this Draft EIR, its scope and components, and its review and certification process.
- **Chapter 2: Project Description.** This chapter includes a detailed description of the proposed project, including its location, site, and project characteristics. A discussion of the project objectives, as well as intended uses of the Draft EIR, responsible agencies, and approvals that are needed for the proposed project are also provided.
- **Chapter 3: Environmental Impact Analysis.** This chapter analyzes the environmental impacts of the proposed project. Impacts are organized into major topic areas. Each topic area includes a description of the environmental setting, methodology, significance criteria, impacts, mitigation measures, and significance after mitigation. The specific environmental topics that are addressed within Section 3 are as follows:
  - **Section 3.1—Aesthetics, Light, and Glare:** Addresses the potential visual impacts of development intensification and the overall increase in illumination produced by the project.
  - **Section 3.2—Air Quality:** Addresses potential air quality impacts associated with project implementation and emissions of criteria pollutants. In addition, the section also evaluates project emissions of toxic air contaminants.
  - **Section 3.3—Biological Resources:** Addresses the project's potential impacts on habitat, vegetation, and wildlife; the potential degradation or elimination of important habitat; and impacts on listed, proposed, and candidate threatened and endangered species.

- **Section 3.4—Cultural and Tribal Cultural Resources:** Addresses potential impacts on historical resources, archaeological resources, paleontological resources, and burial sites.
- **Section 3.5—Geology, Soils, and Seismicity:** Addresses the potential impacts the project may have on soils and assesses the effects of project development in relation to geologic and seismic conditions.
- **Section 3.6—Greenhouse Gas Emissions and Energy:** Addresses potential project impacts related to energy usage and project emissions of greenhouse gases.
- **Section 3.7—Hazards and Hazardous Materials:** Addresses the potential for the presence of hazardous materials or conditions on the project site and in the project area that may have the potential to impact human health.
- **Section 3.8—Hydrology and Water Quality:** Addresses the potential impacts of the project on local hydrological conditions, including drainage areas, and changes in the flow rates.
- **Section 3.9—Land Use:** Addresses the potential land use impacts associated with division of an established community and consistency with the City of Suisun City General Plan, Suisun City Code, and the Travis Air Force Base Land Use Compatibility Plan.
- **Section 3.10—Noise:** Addresses the potential noise impacts during construction and at project buildout from mobile and stationary sources. The section also addresses the impact of noise generation on neighboring uses.
- **Section 3.11—Public Services:** Addresses the potential impacts upon public services, including fire protection, law enforcement, schools, parks, and recreational facilities.
- **Section 3.12—Transportation:** Addresses the impacts on the local and regional roadway system, public transportation, bicycle, and pedestrian access.
- **Section 3.13—Utilities and Services Systems:** Addresses the potential impacts upon service providers, including fire protection, law enforcement, water supply, wastewater, solid waste, and energy providers.

- **Chapter 4: Cumulative Effects.** This section discusses the cumulative impacts associated with the proposed project, including the impacts of past, present, and probable future projects.
- **Chapter 5: Alternatives to the Proposed Project.** This section compares the impacts of the proposed project with three land-use project alternatives: the No Project Alternative, the Reduced Density Alternative, and the Buildings A, B, and C Alternative. An environmentally superior alternative is identified. In addition, alternatives initially considered but rejected from further consideration are discussed.
- **Chapter 6: Other CEQA Considerations.** This section provides a summary of significant environmental impacts, including unavoidable and growth-inducing impacts. This section discusses the cumulative impacts associated with the proposed project, including the impacts of past, present, and probable future projects. In addition, the proposed project's energy demand is discussed.
- **Chapter 7: Effects Found not to be Significant.** This section contains analysis of the topical sections not addressed in Section 3.
- **Chapter 8: Persons and Organizations Consulted/List of Preparers.** This section also contains a full list of persons and organizations that were consulted during the preparation of this Draft

EIR. This section also contains a full list of the authors who assisted in the preparation of the Draft EIR, by name and affiliation.

- **Chapter 9: References**. This section contains a full list of references that were used in the preparation of this Draft EIR.
- **Appendices.** This section includes all notices and other procedural documents pertinent to the Draft EIR, as well as all technical material prepared to support the analysis.

1.4 - Documents Incorporated by Reference

As permitted by CEQA Guidelines Section 15150, this Draft EIR has referenced several technical studies, analyses, and previously certified environmental documentation. Information from the documents, which have been incorporated by reference, has been briefly summarized in the appropriate section(s). The relationship between the incorporated part of the referenced document and the Draft EIR has also been described. The documents and other sources that have been used in the preparation of this Draft EIR include but are not limited to:

- City of Suisun City General Plan
- Suisun City Code
- Travis Air Force Base Land Use Compatibility Plan

In accordance with CEQA Guidelines Section 15150(b), the General Plan, City Code, and the referenced documents and other sources used in the preparation of the Draft EIR are available for review at Suisun City Hall at the address shown in Section 1.6 below.

1.5 - Documents Prepared for the Project

The following technical studies and analyses were prepared for the proposed project:

- Air Quality/Greenhouse Gas Emissions Analysis, prepared by FirstCarbon Solutions (The analysis is wholly contained in Section 3.2, Air Quality/Greenhouse Gas Emissions and supporting information is provided in Appendix B.1.)
- Health Risk Assessment, prepared by FirstCarbon Solutions (Appendix B.2)
- Biological Resources Assessment, prepared by SWCA (Appendix C)
- Phase I Cultural Resources Assessment, prepared by FirstCarbon Solutions (Appendix D)
- Preliminary Soil Investigation, prepared by Raney Geotechnical, Inc. (Appendix E)
- Phase I Environmental Site Assessment, prepared by Youngdahl Consulting Group, Inc. (Appendix F)
- Hydrologic and Water Quality Modeling, Balance Hydrologics (Appendix G)
- Travis Air Force Base Land Use Compatibility Plan Consistency Evaluation, prepared by ESA Associates (Appendix H)
- Wildlife Hazards Assessment, prepared by AECOM (Appendix I)
- Fiscal Impact Analysis, prepared by Goodwin Consulting Group (Appendix J)

- Noise Analysis, prepared by FirstCarbon Solutions (The analysis is wholly contained in Section 3.9, Noise and supporting information is provided in Appendix K)
- Transportation Impact Analysis, prepared by W-Trans (The analysis is wholly contained in Section 3.11, Transportation and supporting information is provided in Appendix L).
- Water Supply Assessment, prepared by KSN (Appendix M) on behalf of the Suisun-Solano Water Authority.

1.6 - Review of the Draft EIR

The City of Suisun City filed a Notice of Completion (NOC) with the State Office of Planning and Research to begin the Draft EIR public review period (PRC § 21161). Concurrent with the NOC, this Draft EIR has been distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as all parties requesting a copy of the Draft EIR in accordance with Public Resources Code Section 21092(b)(3). During the public review period, the Draft EIR, including the technical appendices, is available for review online at www.suisun.com and at the following locations:

Suisun City Hall
701 Civic Center Boulevard
Suisun City, CA 94583
Hours:
Monday–Thursday: 9:00 a.m. to 5:00 p.m.
Friday–Saturday-Sunday: Closed

Joseph A. Nelson Center
611 Village Drive Suisun City,
CA 94585
Hours: 9:00 a.m. to 5:00 p.m

Suisun City Library
601 Pintail Drive
Suisun City, CA 94583
Hours:
Monday and Wednesday: 9:00 a.m. to 6:00 p.m.
Monday-Thursday: 9:00 a.m. to 8:88 p.m.
Friday and Saturday: 9 a.m. to 5 p.m.
Sunday: Closed

Agencies, organizations, and interested parties have the opportunity to comment on the Draft EIR during the 45-day public review period. Written comments on this Draft EIR should be addressed to:

Mr. Jim Bermudez, Development
Services Director
City of Suisun City
701 Civic Center Boulevard
Suisun City, CA 94583
Phone: 707.421.7333
Email: jbermudez@suisun.com

Submittal of electronic comments in Microsoft Word or Adobe PDF format is encouraged. Upon completion of the public review period, written responses to all significant environmental issues raised will be prepared and made available for review by the commenting agencies at least 10 days prior to the public hearings before the Suisun Planning Commission on the project, at which the certification of the Final EIR will be considered. Comments received and the responses to comments will be included as part of the record for consideration by decision-makers for the project.

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CHAPTER 2: PROJECT DESCRIPTION

This Draft Environmental Impact Report (Draft EIR) analyzes the potential environmental effects of the Suisun Logistics Center Project in Suisun City, California.

2.1 - Project Location and Setting

2.1.1 - Location

The 167.43-acre project site is located in unincorporated Solano County, California, within the existing Suisun City Sphere of Influence; refer to Exhibit 2-1. The project site is bounded by a service station and Walters Road (west), Petersen Road (north), grazing land (east), and State Route (SR) 12 (south); refer to Exhibit 2-2. Travis Air Force Base is located approximately 0.5 mile to the east. The project site is located on the Denverton, California United States Geological Survey 7.5-minute topographic quadrangle, Township 5 North, Range 1 West, Section 33 (Latitude 38° 14’ 22” North; Longitude 121° 58’ 48” West).

2.1.2 - Existing Conditions

Land Use Activities and Improvements

The project site is used for cattle grazing and contains grassy vegetation. The project site gently slopes from north to south and the elevation ranges from 18 feet in the northern portion to 10 feet above mean sea level in the southern portion. A windmill (or windpump) is located in the southern portion of the site that is used to pump groundwater from a well.

Two man-made drainage channels cross the site in a north–south direction. The southern portion of the project site overlaps with a 100-year flood plain extending north from Suisun Marsh. A 16-inch-diameter Pacific Gas and Electric Company (PG&E) underground natural gas transmission pipeline crosses through the project site in an east–west direction within a 15-foot-wide easement. A 100-foot power line easement crosses the project site in an east–west direction. A barbed wire fence surrounds the project site.

A photograph of the project site is provided in Exhibit 2-3.

Existing Conservation Easement

In 2021, the property owner recorded a conservation easement on approximately 45 acres of the southern portion of the project site (Petersen Ranch West Conservation Easement). The conservation easement deed is held by the Solano Land Trust, a California nonprofit public benefit corporation. The conservation easement is shown on Exhibit 2-4.

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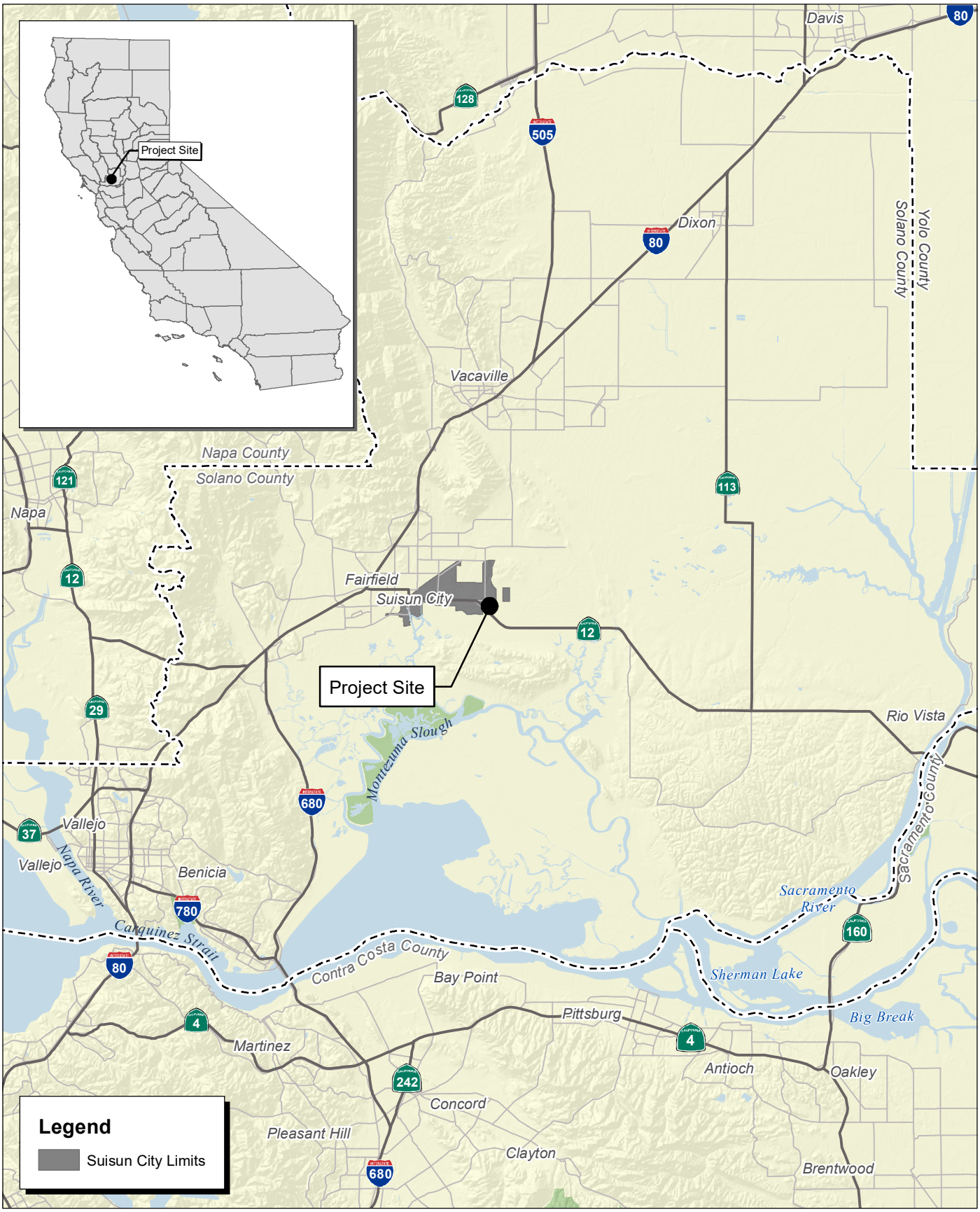

Source: Census 2000 Data, The California Spatial Information Library (CaSIL).

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5 2.5 0 5 Miles

Exhibit 2-1
Regional Location Map

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CITY OF SUISUN CITY
SUISUN LOGISTICS CENTER PROJECT
ENVIRONMENTAL IMPACT REPORT

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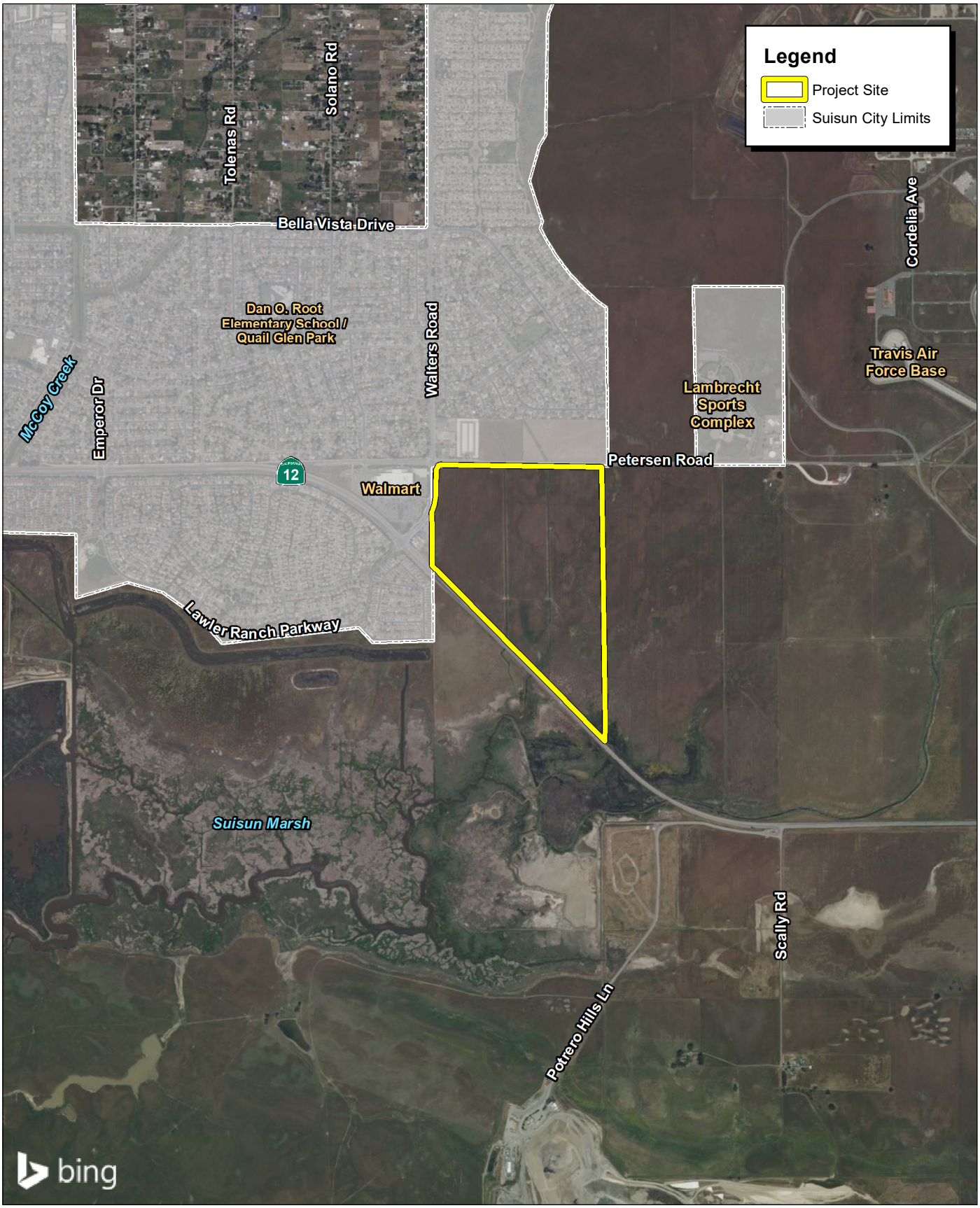

Source: Bing Aerial Imagery. Solano County Regional GIS Consortium.

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Exhibit 2-2
Local Vicinity Map
Aerial Base

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View of the project site from Petersen Road.

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Exhibit 2-3
Site Photograph

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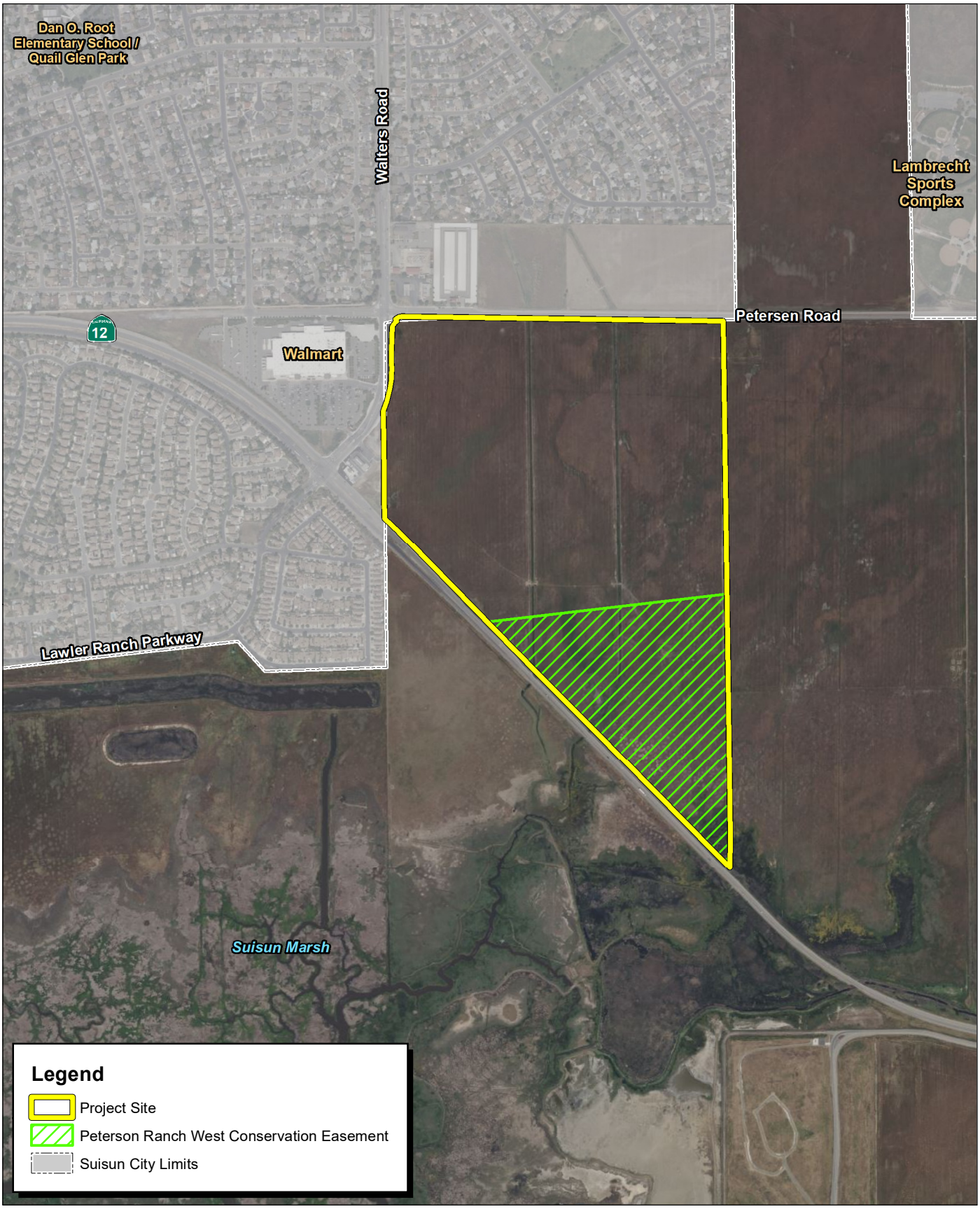

Source: Bing Aerial Imagery. Solano County Regional GIS Consortium.

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Exhibit 2-4
Conservation Easement

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CITY OF SUISUN CITY
SUISUN LOGISTICS CENTER PROJECT
ENVIRONMENTAL IMPACT REPORT

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The conservation easement coincides with Zone B1 (Inner Approach/Departure Zone) of the Travis Air Force Base Land Use Compatibility Plan. This zone effectively prohibits development and, thus, renders this area unbuildable due to its proximate relationship to Runway 03/21 Left. The conservation easement also contains freshwater emergent wetlands that support special-status plant species. Upland portions of this easement are suitable for livestock grazing, which has been a long-standing existing land use activity within this area.

2.1.3 - Surrounding Land Uses

West

A service station and Walters Road, a four-lane divided arterial roadway, forms the western boundary of the project site. West of Walters Road is a Walmart store.

North

Petersen Road, three-lane roadway with inbound stacking lane for the Travis Air Force Base South Gate, forms the northern boundary of the project site. North of Petersen Road are a fuel station/convenience market, Four Seasons RV Boat-Self Storage, undeveloped land, and the Irving Lambrecht Sports Complex.

East

Grazing land forms the eastern boundary of the project site. Further east, approximately 0.55 mile, is Travis Air Force Base and the South Gate entrance to the installation.

South

SR-12, a two-lane divided state highway, forms the southern boundary of the project site. South of SR-12 is marsh land and the Potrero Hills Landfill.

2.1.4 - Land Use Designations

The project site is currently designated “Agricultural” by the Solano County General Plan and zoned “Exclusive Agricultural 160 acres (A-160)” by the Solano County Zoning Ordinance.

The project site is currently designated “Special Planning Area” by the Suisun City General Plan, which is a non-binding designation. The project site is within the Suisun City Sphere of Influence. The General Plan provides guidelines to govern the planning and development of the area, along with a specific program for doing so. (See Program LU-4.5 [Special Planning Area – Comprehensive Suitability Analysis and Planning]).

The project site is within the boundaries of the Travis Air Force Base Airport Land Use Compatibility Plan. The majority of the site is within Zone 3 (Traffic Pattern), with a small portion within Zone B1 (Inner Approach/Departure Zone).

2.2 - Project Characteristics

2.2.1 - Project Summary

The applicant, Buzz Oates Construction, Inc., is proposing development of 2.1 million square feet of warehouse uses on approximately 120 acres. The remaining 47 acres would continue to be permanently preserved as open space.[1] The entire 167.43-acre project site and the right-of-way for Petersen Road abutting the project would be annexed into the Suisun City limits.

Six buildings ranging from 145,397 to 644,782 square feet would be developed on-site. Each building would provide docks, grade level roll-up doors, and trailer parking stalls. The facility would be enclosed with a secure perimeter and access would be restricted to authorized users. Table 2-1 summarizes the proposed project. Exhibit 2-5 depicts the preliminary site plan.

Table 2-1: Suisun Logistics Center Project Summary

Building	Square Feet	End Use/Characteristics
A	199,784	High-Cube Warehouse/36 feet clear height
B	199,784	High-Cube Warehouse/36 feet clear height
C	145,397	High-Cube Warehouse/36 feet clear height
D	224,138	High-Cube Warehouse/36 feet clear height
E	644,782	High-Cube Warehouse/36 feet clear height
F	644,782	High-Cube Warehouse/36 feet clear height
Total	**2,058,667**	–
Source: RMW Architecture Interiors. 2020.		

2.2.2 - Roadway Improvements and Vehicular Access

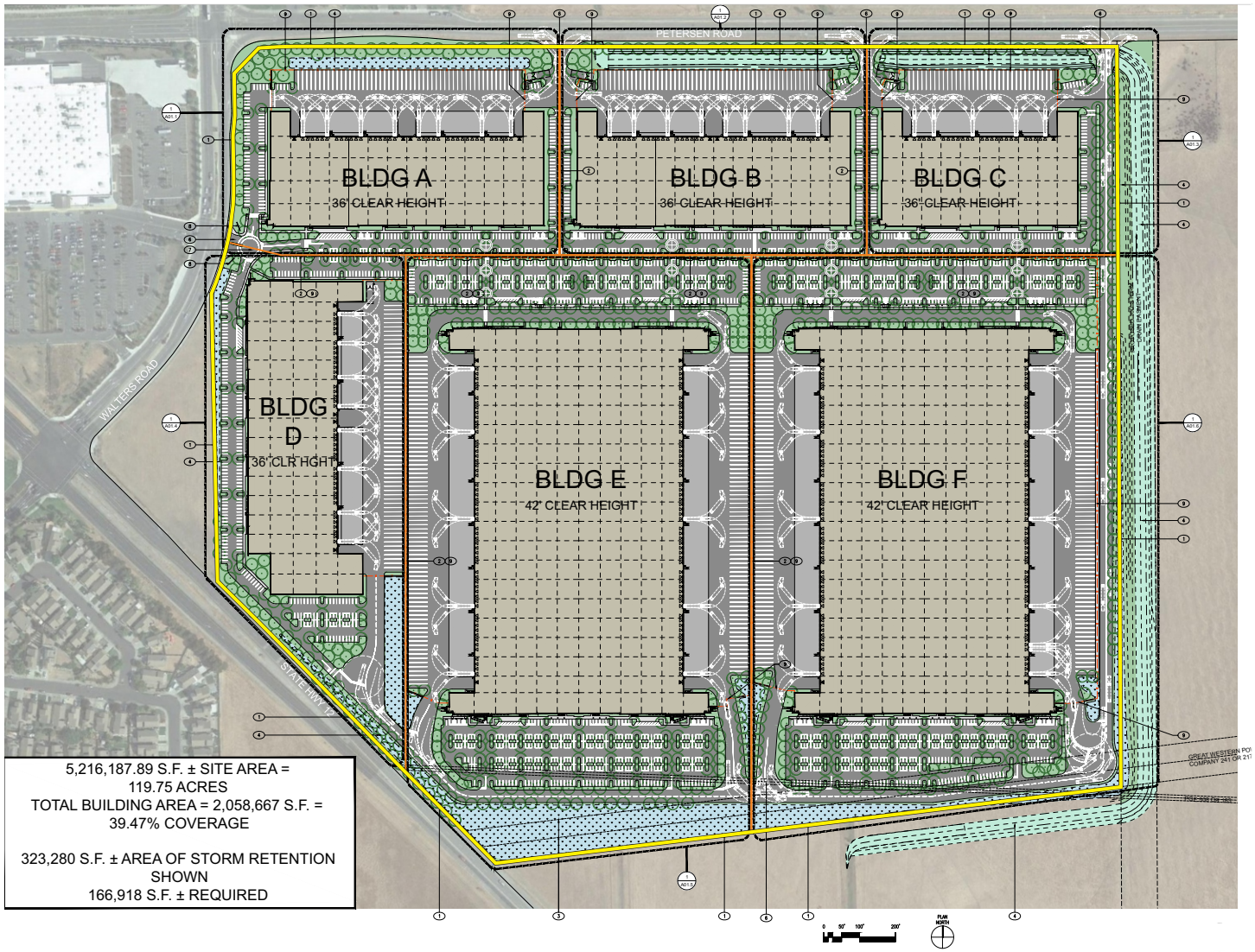
Petersen Road

The Petersen Road frontage would be improved curb, gutter, and sidewalk. Peterson Road would be widened to include three full access unsignalized driveways intended for trucks and an additional eastbound lane (see Appendix L). The existing Petersen Road westbound lane and Class I bike/pedestrian facility would be improved by the proposed project.

Walters Road

The fourth (east) leg of the existing signalized Walters Road/Walmart Driveway intersection would be improved to provide access to the proposed project. This access point is intended only for passenger vehicles, light-duty/utility trucks (i.e., two-axle), utility vans, and similar vehicles. This entrance would be designed and signed to discourage heavy vehicle access (i.e., 53-foot tractor trailers).

[1] Approximately 45 acres of this open space will continue to be preserved via a conservation easement enacted in 2021, and approximately 2 acres will continue to be preserved as open space reserved for drainage.



Source: RMW Architecture Interiors, 11/18/2020.

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Exhibit 2-5
Preliminary Site Plan

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The Walters Road frontage currently is improved with curb, gutter, and sidewalk. These existing improvements may be modified as part of the proposed project.

An internal reciprocal access point may be provided with the service station at the corner of SR-12/Walters Road. This access point may be restricted with a gate to allow access only to authorized users.

State Route 12

No improvements or access points are proposed along SR-12.

2.2.3 - Parking

Off-street parking spaces would include standard stalls for passenger vehicles and 55-foot-long stalls for empty truck trailers. Table 2-2 summarizes the assignment of parking spaces by building.

Table 2-2: Parking Summary

Building	Stalls	Notes
A	215	Includes eight ADA stalls, 13 electric vehicle charging stalls, and five Clean Air stalls
B	206	Includes eight ADA stalls, 13 electric vehicle charging stalls, and four Clean Air stalls
C	175	Includes 10 ADA stalls, 10 electric vehicle charging stalls, and six Clean Air stalls
D	285	Includes eight ADA stalls, 26 electric vehicle charging stalls, and nine Clean Air stalls
E	681	Includes 14 ADA stalls, 41 electric vehicle charging stalls, and 14 Clean Air stalls
F	645	Includes 15 ADA stalls, 39 electric vehicle charging stalls, and 13 Clean Air stalls
Total	**2,207**	**–**

Notes:
ADA = Americans with Disabilities Act
Clean Air stalls intended for vanpools and electric vehicles
Source: RMW Architecture Interiors 2020.

2.2.4 - Open Space Preservation

The applicant will continue to preserve approximately 47 acres of the project site as open space (see footnote 1). This area coincides with the portion of the site designated as Zone B1 (Inner Approach/Departure Zone) by the Travis Air Force Base Land Use Compatibility Plan and the Petersen Ranch West Conservation Easement.

2.2.5 - Storm Drainage

The proposed project would install a storm drainage system designed for a 15-year storm event. Inlets would capture surface runoff, where it would enter an underground piping system that would convey stormwater to one of four basins. The basins would provide 323,280 square feet (7.6 acres) of stormwater retention.

The two existing drainage channels that cross the project site would be abandoned. A new drainage channel would divert runoff from the west channel culvert at Petersen Road to a new east channel along the east project site boundary that would connect to the existing east culvert under SR-12.

2.2.6 - Utilities

Water

The proposed project would be served Suisun-Solano Water Authority (SSWA).[2] Service laterals would be extended to project buildings from existing SSWA facilities in Walters Road and Petersen Road.

In August 2022, the City of Suisun City and Solano Irrigation District (SID) entered into a second amended implementation/lease agreement that allows the City to transfer its State Water Project entitlement to SID in exchange for additional Solano Project water deliveries to SSWA. The additional 240 acre-feet of water from the Solano Project is needed to serve the proposed project and the proposed Highway 12 Logistics Center Project, which is being evaluated in separate EIR.

Wastewater

The proposed project would be served with wastewater collection and treatment service provided by Fairfield-Suisun Sewer District. Service laterals would be extended to project buildings from existing facilities in Petersen Road.

Electricity and Natural Gas

Electricity would be provided by PG&E. Service laterals would be extended to project buildings from existing facilities in Petersen Road.

The existing PG&E natural gas transmission pipelines within or near the project site would remain in place and protected in accordance with federal and state safety standards during construction activities. However, the proposed project would not include the use of natural gas appliances or the installation of natural gas plumbing.

2.2.7 - Grading and Earthwork

The project site would be graded to create building pads with finished floor elevations ranging from 17.5 to 19.0 feet above mean sea level. Rough grading would require 106,000 cubic yards of import.

2.2.8 - Design and Appearance

Architecture and Enhancements

The warehouse buildings would be of Type III-B construction, site cast, tilted concrete panels with a variety of architectural enhancements. The typical wall panels would be enhanced with reveals and a textured elastomeric, multicolored coating system. The areas around the building entries would also be enhanced with tinted glazing in aluminum frames with overhead steel-framed painted canopies.

[2] Suisun-Solano Water Authority (SSWA) is joint powers agency between the City of Suisun City and Solano Irrigation District (SID) that provides water to customers within the Suisun City limits and unincorporated areas of Solano County.

The placement of these enhancements would be focused on those locations most visible from the public roadways. Rooftops and light posts would be designed and maintained to minimize attractiveness for bird roosting and nesting to best enhance compatibility with Travis Air Force Base (see Appendix H for more details). Exhibit 2-6 depicts the building renderings.

Landscaping

The proposed project would be landscaped using native compatible plants or plants indigenous to the Suisun City area. Low water use plants would be used primarily, with moderate water use plants allowed if necessary for emphasis at accent points, such as driveways and building entries. Plants, including trees, that are attractive to wildlife (such as those that produce seeds, fruits, or berries or that provide dense roosting or nesting cover) would be avoided to best enhance compatibility with Travis Air Force Base (see Appendix H for more details).

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BUILDING D

BUILDING A

BUILDING E

BUILDING B

BUILDING F

BUILDING C

Source: RMW Architecture Interiors, 11/18/2020.

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Exhibit 2-6
Conceptual Renderings

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2.2.9 - Sustainability Features

The proposed project would incorporate a variety of sustainable materials and construction practices including:

- A Storm Water Pollution Prevention Plan (SWPPP) to minimize contamination, erosion, and dust pollution during construction. All stormwater runoff from impervious surfaces (roofs and paving) will be routed through a specially designed water quality detention and treatment basin. Additionally, on-site detention will be provided to meet the Suisun City standards.
- Storage and collection of recyclable materials.
- Construction waste management, including recycling.
- Environmental tobacco smoke control.
- Heat reflecting roof membranes.
- Full cut-off light fixtures or other shielding devices to prevent light trespass onto neighboring properties.
- Water efficient landscaping.
- Water use reduction methods.
- Low volatile organic compound (VOC) emitting sealants, adhesives, coatings, floorings, and wood materials.
- Roof structures will be designed to accommodate additional weight for roof-top photovoltaic electricity generation panel arrays.
- California Green Building Code compliant electric vehicle (EV) charging stations designed to accommodate, at a minimum, the number of charging stations required in the Tier 2 Nonresidential Voluntary Measures of CALGreen, Section A5.106.5.3.2.
- The application of United States Green Building Council Leadership in Energy and Environmental Design (LEED™) techniques and practices to the project design and construction.
- Installation of solar photovoltaic systems, if determined to be feasible at the design stage of planning considering possible glint and glare impacts on operations at Travis Air Force Base, as determined through modeling using the Solar Glare Hazard Analysis Tool (SGHAT) developed by Sandia National Laboratories and after review by the Solano County Airport Land Use Commission pursuant to Section 5.6 of the Travis Air Force Base Land Use Compatibility Plan.

2.2.10 - Employment

The proposed project would employ an estimated 910 workers during construction and an estimated 2,059 workers at buildout.

2.2.11 - Buildout Horizon

For the purpose of providing a conservative, reasonable worst-case scenario, this EIR will assume that the proposed project would buildout in a single phase over a period of 18 months. This approach allows for construction-related impacts (i.e., air quality and greenhouse gas emissions) to be compressed into a narrow time frame and, thus, results in the disclosure of the maximum amount of construction emissions. As a practical matter, the proposed project is expected to take years or decades to buildout.

2.2.12 - Project Activities Within Conservation Easement

The terms of Petersen Ranch West Conservation Easement allow for project-related stormwater infrastructure to be located within this area. Additionally, the terms of the Petersen Ranch West Conservation Easement allow for project-related biological mitigation to occur within this area.

2.3 - Project Objectives

The underlying purpose of the proposed project is to develop a high-quality financially feasible project that is responsive to market demands and supports a comprehensive range of benefits, include preservation of open space, increased local employment, improved transportation infrastructure, including good-neighbor roadway improvements benefiting Travis Air Force Base, and sustainable and healthy development measures for the surrounding community.

The specific objectives of the proposed project are to:

1. Promote economic growth through new capital investment, expansion of the tax base, creation of new employment opportunities, and payment of development fees.
2. Develop compatible land uses near Travis Air Force Base in the interests of avoiding interference with military operations and furthering the objectives of the Travis Sustainability Study.
3. Attract new employment-creating industries to Suisun City that generate new tax revenue and minimize demands on City services.
4. Improve Suisun City's jobs-housing ratio by locating new employment opportunities near residential areas.
5. Continue the orderly development of the eastern gateway of Suisun City with a well-designed project.
6. Further the goals and policies of the City of Suisun City General Plan by developing land contemplated to support urban development to its highest and best use.
7. Preserve the most biologically sensitive portions of the project site as open space.
8. Install circulation improvements along Walters Road and Petersen Road that provide efficient ingress and egress to the proposed project while also ensuring these facilities operate at acceptable levels.

9. Implement good-neighbor roadway widening, and other associated improvements, to Peterson Road beyond what is necessary to mitigate the impacts of the project for the benefit of Travis Air Force Base.
10. Promote public safety by incorporating security measures into the project design.
11. Mitigate impacts on the environment through implementation of feasible mitigation measures.

2.4 - Intended Uses of This Draft EIR

This Draft EIR is being prepared by the City of Suisun City to assess the potential environmental impacts that may arise in connection with actions related to implementation of the proposed project including annexation to the City of Suisun City. Consistent with the definition found in California Environmental Quality Act (CEQA) Guidelines Section 15367, Suisun City is the lead agency for the proposed project and has discretionary authority over the proposed project and project approvals. The Draft EIR is intended to address all public infrastructure improvements and all future development that are within the parameters of the proposed project.

2.4.1 - Discretionary and Ministerial Actions

Discretionary approvals and permits are required by Suisun City for implementation of the proposed project. Because the project site is located on property that is currently located within the unincorporated area of Solano County, the proposed project cannot go forward as a City of Suisun City project unless and until the Solano Local Agency Formation Commission (LAFCo) approves the annexation of the property into the City. The proposed project would require a number of discretionary approvals and actions by the City, some of which will precede action by LAFCo and others that would follow. These discretionary City approvals and actions include the following:

- General Plan Amendment
- Annexation Application
- Prezoning
- Planned Unit Development
- Tentative Subdivision Map
- Use Permit
- Site Plan/Architectural Review

If LAFCo approves the proposed annexation, subsequent ministerial actions by the City would be required for the implementation of the proposed project, including issuance of grading and building permits.

2.4.2 - Responsible and Trustee Agencies

A number of other agencies in addition to Suisun City will serve as Responsible and Trustee Agencies, consistent with the definitions found in CEQA Guidelines Section 15381 and Section 15386, respectively. This Draft EIR will provide environmental information to these agencies and other

public agencies, which may be required to grant approvals or coordinate with other agencies, as part of project implementation. These agencies may include, but are not limited to, the following:

- Solano Local Agency Formation Commission (LAFCo)
- California Department of Fish and Wildlife (CDFW)
- California Department of Transportation (Caltrans)
- San Francisco Bay Regional Water Quality Control Board (RWQCB)
- Solano County Airport Land Use Commission (ALUC)
- Solano Irrigation District (SID)
- County of Solano
- City of Fairfield

Actions that are necessary to implement the project that must be taken by other agencies are:

- Annexation approval and Reorganization (LAFCO)
- Land Use Compatibility Review (ALUC)
- Approval of Water Agreement (SID)
- Issuance of 404 Permit by United State Army Corps of Engineers (USACE)
- Issuance of Section 1602 Lake and Streambed Alteration Agreement (CDFW)
- Issuance of Section 401 Water Quality Certification (RWQCB)
- Issuance of Encroachment Permit (Caltrans)

CHAPTER 3: ENVIRONMENTAL IMPACT ANALYSIS

Organization of Issue Areas

This Draft Environmental Impact Report (Draft EIR) provides analysis of impacts for those environmental topics where it was determined in the Notice of Preparation or through subsequent analysis that the proposed project could result in "potentially significant impacts." Sections 3.1 through 3.13 discuss the environmental impacts that may result with approval and implementation of the proposed project.

Issues Addressed in this EIR

The following environmental issues are addressed in Section 3:

- Aesthetics, Light, and Glare
- Air Quality
- Biological Resources
- Cultural and Tribal Cultural Resources
- Geology, Soils, and Seismicity
- Greenhouse Gas Emissions and Energy
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise
- Public Services
- Transportation
- Utilities and Service Systems

Level of Significance

Determining the severity of project impacts is fundamental to achieving the objectives of the California Environmental Quality Act (CEQA). CEQA Guidelines Section 15091 requires that decision makers mitigate, as completely as is feasible, the significant impacts identified in the Draft EIR. If the EIR identifies any significant unmitigated impacts, CEQA Guidelines Section 15093 requires decision makers, in approving a project, to adopt a statement of overriding considerations that explains why the benefits of the project outweigh the adverse environmental consequences identified in the EIR.

The level of significance for each impact examined in this Draft EIR was determined by considering the predicted magnitude of the impact against the applicable threshold. Thresholds were developed using criteria from the CEQA Guidelines and checklist; state, federal, and local regulatory schemes; local/regional plans and ordinances; accepted practice; consultation with recognized experts; and other professional opinions.

Impact Analysis and Mitigation Measure Format

The format adopted in this Draft EIR to present the evaluation of impacts is described and illustrated below.

Summary Heading of Impact

Impact AES-1:	**An impact summary heading appears immediately preceding the impact description (Summary Heading of Impact in this example). The impact number identifies the section of the report (AES for Aesthetics, Light, and Glare in this example) and the sequential order of the impact (1 in this example) within that section. To the right of the impact number is the impact statement, which identifies the potential impact.**

Impact Analysis

A narrative analysis follows the impact statement.

Level of Significance Before Mitigation

This section identifies the level of significance of the impact before any mitigation is proposed.

Mitigation Measures

In some cases, following the impact discussion, reference is made to state and federal regulations and agency policies that would fully or partially mitigate the impact. In addition, policies and programs from applicable local land use plans that partially or fully mitigate the impact may be cited.

Project-specific mitigation measures, beyond those contained in other documents, are set off with a summary heading and described using the format presented below:

MM AES-1 Project-specific mitigation is identified that would reduce the impact to the lowest degree feasible. The mitigation number links the particular mitigation to the impact it is associated with (AES-1 in this example); mitigation measures are numbered sequentially.

Level of Significance After Mitigation

This section identifies the resulting level of significance of the impact following mitigation.

Abbreviations used in the mitigation measure numbering are:

Code	Environmental Issue
AES	Aesthetics, Light, and Glare
AIR	Air Quality
BIO	Biological Resources
CUL	Cultural and Tribal Cultural Resources
GEO	Geology, Soils, and Seismicity
GHG	Greenhouse Gas Emissions and Energy

Code	Environmental Issue
HAZ	Hazards and Hazardous Materials
HYD	Hydrology and Water Quality
LU	Land Use
NOI	Noise
PSU	Public Services
TRANS	Transportation
USS	Utilities and Service Systems

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3.1 - Aesthetics, Light, and Glare

3.1.1 - Introduction

This section describes the existing aesthetics, light, and glare setting and potential effects from project implementation on visual resources and the site and its surroundings. Descriptions and analysis in this section are based on-site reconnaissance as well as review of the Suisun City General Plan and the Travis Air Force Base Land Use Compatibility Plan.

3.1.2 - Environmental Setting

Visual Character

Regional Context

Suisun City, population 29,295, is located in central Solano County in the North Bay region of the San Francisco Bay Area. Suisun City, along with the neighboring City of Fairfield, are located on a flat plain between the Vaca Mountains and Cement Hill to the north and the Potrero Hills and Suisun Marsh to the south. Fairfield is much larger than Suisun City in terms of size and population and features tall, visually prominent buildings within the Downtown area and Solano Business Park.

Suisun City has a semi-triangular shape, with the historic downtown waterfront area located in the southwest corner and more recent residential and commercial development in the central and eastern portions of the city limits. State Route (SR) 12, a four-lane expressway, is the primary east–west transportation corridor through the City and serves most of the major commercial centers. Travis Air Force Base, a 6,455-acre military installation, is located approximately 0.5 mile to the east.

The Suisun City General Plan recognizes the Vaca Mountains, Cement Hill, Potrero Hills, and Suisun Marsh as significant visual features.

Local Vicinity

The 167-acre project site is used for cattle grazing and contains grassy vegetation. The project site is part of the continuous open bay plain north of Grizzly Bay, and gently slopes from north to south with elevations ranging from 18 feet above mean sea level (AMSL) in the northern portion to 10 feet AMSL in the southern portion. A windmill (or windpump) is located in the southern portion of the site and is used to pump groundwater from a well. Two man-made drainage channels cross the site in a north–south direction. A barbed wire fence surrounds the project site. A photograph of the project site is provided in Exhibit 2-3.

The most visible attributes are associated with agricultural activities (windpump, fencing, etc.). There are no notable aesthetic features.

Surrounding Land Uses

West

A service station[1] located in the Suisun City limits and Walters Road, a four-lane divided arterial roadway, form the western boundary of the project site. West of Walters Road are a Walmart store and associated parking areas.

Views of land uses to the west from the project site are unobstructed. These land uses also have unobstructed views of the project site. The sensitivity of these views is low because these areas are unoccupied or are part of a commercial land use.

North

Petersen Road, a three-lane undivided roadway, forms the northern boundary of the project site. North of Petersen Road is a fuel station/convenience store, Four Seasons RV Boat-Self Storage, undeveloped land, and the Lambrecht Sports Complex. Further north is the Montebello single-family residential neighborhood.

Views of land uses to the north from the project site are unobstructed. These land uses also have unobstructed views of the project site. For the fuel station/convenience store, storage facility, and undeveloped land, the sensitivity of these views is low because these areas are unoccupied or are part of a commercial land use. For the Sports Complex, the sensitivity of these views is high because it is a public facility and the Suisun City General Plan Policy CCD-6.2 calls for retention or enhancement of views from public properties and right-of-way. However, the Sports Complex is offset and not directly north of the project site. The Montebello single-family residential neighborhood is more than 650 feet from the project site and, thus, has distant views of the site.

East

Undeveloped privately owned land used for dry land farming (hay production) and grazing is located east of the project site. Further east is Travis Air Force Base. Runway 3 L/21 R is 0.75 mile east of the project site.

Views of land uses to the east from the project site are unobstructed. These land uses also have unobstructed views of the project site. The sensitivity of these views is low because these areas are unoccupied and part of a military installation.

South

SR-12, a four-lane divided State highway that transitions to two lanes east of Walters Road, forms the southern boundary of the project site. South of SR-12 is undeveloped marshland and the Potrero Hills Landfill. To the southwest is the Lawler Ranch single-family residential neighborhood.

Views of land uses to the south from the project site are unobstructed. These land uses also have unobstructed views of the project site. The sensitivity of these views is low because these areas are unoccupied or part of a solid waste facility. Views from Lawler Ranch are partially obstructed by a sound wall and vegetation along the SR-12 frontage.

[1] Two additional commercial buildings are planned for this site.

Light and Glare

The project site is undeveloped and does not have any existing sources of light and glare. Existing sources of light and glare in the project vicinity consist of street lighting on SR-12, Walters Road, and Petersen Road; athletic field lighting at the Lambrecht Sports Complex; lighting at the Travis Air Force Base gatehouse to the east; freestanding pole and building-mounted lighting at the commercial uses to the west and north; exterior lights from the Lawler Ranch neighborhood and vehicular head lamps and tail lamps on surrounding roadways. Overall, the project site is in a transition area between an urbanized area with nighttime light and glare and undeveloped areas without substantial nighttime light and glare.

3.1.3 - Regulatory Framework

Local

City of Suisun City

General Plan

The Suisun City General Plan sets forth the following goals, objectives, and policies relevant to aesthetics, light, and glare:

Goal CCD-1 Maintain and Strengthen the Character of Suisun City through Changes in the Built Environment.

Objective CCD-1 Enforce design policies and standards that ensure a unique sense of place in new developments so that the City's overall design character is improved between present and 2035.

Policy CCD-1.1 The City will review and condition new developments, as necessary, to ensure that development is consistent with the desired future character of the City. This review will take into consideration the size, location, orientation, and height of buildings, as well as proposed signs, fences, drainage, walls, landscaping, and lighting.

Policy CCD-1.2 The City will require the use of durable, high-quality building materials to reduce maintenance and replacement needs and ensure the aesthetic appeal of new developments.

Policy CCD-1.3 The architectural style, exterior materials, and other design features of accessory buildings, including garages, shall complement the primary structure.

Policy CCD-1.5 New developments should locate and size proposed surface parking areas in a way that reduces the visual dominance of parking as viewed from the front property line. In general, street frontages should be composed of building fronts and complementary landscaping, with parking located to the side or rear of the site.

Policy CCD-1.6 Proposed buildings of more than 20,000 square feet in gross floor area shall use balconies, bay windows or other window treatments, pitched roofs, arcades, or other architectural features to provide visual interest.

Policy CCD-1.17 Trash bins, HVAC equipment, and other required mechanical equipment should be located in areas that are accessible for their intended use and screened from view along public rights-of-way.

Policy CCD-1.18 Colors and logos associated with a company shall not be a significant architectural element in any new development. Commercial signage should be restrained in size and height and shall not involve any more than one square foot of building signage for each linear foot of building frontage facing a public street.

Goal CCD-3 Increase the Visual Attractiveness of Key Community Gateways.

Objective CCD-3 Provide a visual environment at important gateways that gives visitors an immediate positive impression of Suisun City.

Policy CCD-3.1 Key Community Gateways include SR-12 east of the City limits, Sunset Avenue at the Southern Pacific Railroad tracks, Walters Road between Tabor Avenue and Prosperity Lane, SR-12 near Ledgewood Creek, Cordelia Road in the western edge of the Planning Area, Pennsylvania Avenue at SR-12, the pedestrian crossing from Downtown Fairfield, and the Suisun Slough.

Policy CCD-3.2 Key Community Gateways should provide distinctive entrances to Suisun City that enhance the image of and reflect the natural environment, history, culture, and identity of the community.

Policy CCD-3.3 New developments visible from Key Community Gateways should provide an attractive streetscape environment; preserve healthy native vegetation and add new landscaping to enhance aesthetics; and frame views of waterways and surrounding hills and mountains, where possible.

Policy CCD-3.4 The City will support construction of attractive civic landmarks, public artwork, and other public improvements in areas near Key Community Gateways.

Policy CCD-3.5 New private developments shall provide attractive building façades and locate surface parking in a way that reduces the visual dominance in areas adjacent to and visible from Key Community Gateways.

Policy CCD-3.6 The City will support the installation of attractive signage and lighting in Key Community Gateways that directs visitors to the Downtown, parks, schools, and other important civic areas.

Goal CCD-4 Design Streetscapes to Create Attractive and Comfortable Spaces for People.

Objective CCD-4 Provide a comfortable visual environment along streetscapes throughout the community.

Policy CCD-4.4 The City will require visually attractive streetscapes with street trees, planting strips, attractive transit shelters, benches, pedestrian-scale streetlights in appropriate locations, and landscaping along fences and low walls, if present.

Policy CCD-4.8 New utilities shall be installed underground. Aboveground utilities along public rights-of-way should be undergrounded, as feasible.

Policy CCD-4.10 The City will work with Caltrans to install aesthetic and functional improvements along the SR-12 corridor, including landscaping, trees, pedestrian and bicycle pathways separated from the travelway, and noise attenuation improvements.

Goal CCD-6 Preserve and Enhance Scenic Views in Suisun City.

Objective CCD-6 Increase visual access to the Suisun Marsh, the Coastal Range, Cement Hill, the Potrero Hills, and the Vaca Mountains.

Policy CCD-6.1 Locally important scenic resources include the Suisun Marsh, the Coastal Range, Cement Hill, the Potrero Hills, and the Vaca Mountains. Locally important scenic vistas are those available from public properties and rights-of-way of locally important scenic resources.

Policy CCD-6.2 New developments shall be designed to retain or enhance views along existing public rights-of-way of locally important scenic resources, to the extent feasible.

Policy CCD-6.3 New developments should be designed, where feasible, to frame views of locally important scenic resources by providing direct lines of sight along public rights-of-way and open space in areas where these features are prominently visible.

Policy CCD-6.4 The City will not consider urban development that is consistent with General Plan community design policies to represent a degradation of visual character for the purpose of environmental impact analysis.

Policy CCD-6.5 The City will preserve and enhance visual connections to Suisun Marsh, including the development of environmentally sensitive recreational facilities, as funding is available.

Goal CCD-7 Promote casual surveillance of public and semi-public spaces.

Policy CCD-7.1 Windows and active rooms in new buildings should allow occupants to view yards, corridors, entrances, streets, alleys, and other public and semi-public places.

Policy CCD-7.2 New developments should front onto adjacent parks and open space or provide windows, outdoor seating areas, or other orientation to these features.

Policy CCD-7.3 New commercial development shall provide secure locking of bicycles in locations that can be observed from inside proposed buildings.

Goal CCD-8 Avoid light spillage and adverse effects of glare.

Objective CCD-8 Incorporate design approaches, as necessary, to provide attractive lighting and ensure that new developments do not create significant effects related to light or glare.

Policy CCD-8.1 Low, pedestrian-scaled, ornamental lighting should be emphasized in new developments in order to avoid adverse effects on adjacent uses.

Policy CCD-8.2 New developments shall use attractive lighting that is complementary to the design of proposed structures.

Policy CCD-8.4 Light fixtures shall aim light sources downward and provide shielding to prevent glare and reflection.

Policy CCD-8.5 Permanent lighting cannot blink, flash, or be of unusually high intensity or brightness. Lighting standards shall avoid the use of harsh mercury vapor, low-pressure sodium, or fluorescent bulbs for lighting of public areas or for lighting within residential neighborhoods.

Policy CCD-8.6 New developments shall not include reflective surfaces that could cast glare toward pedestrians, bicyclists, or motorists. Bare metallic surfaces, such as pipes, vents, and light fixtures shall be painted to minimize reflectance.

City Code

Suisun City Code Title 18 contains the Zoning Code, which sets forth development standards by zoning district. New development projects are subject to development standards that pertain to building height, lot coverage, setbacks, and related items. City staff confirms that applicable Zoning Code development standards are met during the application review process.

County of Solano

Travis Air Force Base Land Use Compatibility Plan

The Travis Air Force Base Land Use Compatibility Plan establishes that land uses that may cause visual hazards to aircraft in flight are not permitted within 14,500 feet of the Travis Air Force Base runways. (The project site is within 14,500 feet of Runway 3 L/21 R). Specific examples include glint, glare, or distracting lights that could be mistaken for airport lights; and sources of dust, steam, high-velocity exhaust plumes, or smoke that may impair pilot visibility. Any commercial-scale solar applications require special review to ensure compatibility with aviation activities.

3.1.4 - Methodology

FirstCarbon Solutions (FCS) evaluated aesthetics, light, and glare impacts through site reconnaissance, review of the Suisun City General Plan and the Travis Air Force Base Land Use Compatibility Plan, and review of project plans and development standards. FCS personnel conducted site reconnaissance in December 2019 and documented visual conditions with digital photographs. The site has not visually changed between that 2019 site visit and the publication of the NOP. FCS personnel reviewed the Suisun City General Plan for relevant goals, objectives, and policies that pertain to aesthetics, light, and glare impacts. Finally, FCS reviewed project plans and development standards for compliance with the General Plan and Travis Air Force Base Land Use Compatibility Plan, as well as visual compatibility with surrounding land uses.

3.1.5 - Thresholds of Significance

Appendix G of the CEQA Guidelines is a sample Initial Study checklist that includes a number of factual inquiries related to the subject of aesthetics, as it does on a whole series of additional environmental topics. Notably, lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance on the subject of aesthetics, or indeed on any subject addressed in the checklist. (*Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1068). Rather, with few exceptions, "CEQA grants agencies discretion to develop their own thresholds of significance" (Id.). Even so, it is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G and to use that language in fashioning thresholds. The City has done so here. Thus, for purposes of this Draft EIR, aesthetics impacts resulting from the implementation of the proposed project would be considered significant if the proposed project would:

a) Have a substantial adverse effect on a scenic vista.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway. (Refer to Section 7, Effects Found not to be Significant).

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, if the project would conflict with applicable zoning and other regulations governing scenic quality.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

3.1.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the proposed project and provides mitigation measures where appropriate.

Scenic Vistas

Impact AES-1: The proposed project would not have a substantial adverse effect on a scenic vista.

Impact Analysis

The Suisun City General Plan Policy CCD-6.1 identifies Suisun Marsh, the Coastal Range, Cement Hill, the Potrero Hills, and the Vaca Mountains as locally important scenic resources and defines "locally important scenic vistas" as those available from public properties and right-of-way of locally important scenic resources. Policy CCD-6.2 calls for retention or enhancement of locally important scenic vistas from public properties and right-of-way "to the extent feasible."

In the case of the project site, views of the Potrero Hills from the Petersen Road right-of-way, and views of a limited portion the Potrero Hills from the Lambrecht Sports Complex on the north side of Petersen Road, which is owned by the City, would meet the policy's definition of a locally important scenic vista. The Potrero Hills stand as tall as 425 feet AMSL, while Petersen Road and the Lambrecht Sports Complex are at an elevation of 14 feet AMSL. From Petersen Road, views of the hills are unobstructed. From within the Sports Complex, views of the hills due south are currently partially obscured by trees, fencing, light standards, and other improvements. (Note that the Potrero Hills are most prominent when looking due south; refer to Exhibit 2-3). Visual simulations showing before and after views from Peterson Road to and through the project site toward Potrero Hills are included as Exhibits 3.1-1, 3.1-1a through 3.1-1f.

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Exhibit 3.1-1
Visual Simulation Viewpoints

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Existing

Proposed

Source: RMW Architecture Interiors, 04/2024.

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Exhibit 3.1-1a
View 1: View South From Petersen Road at Walters Road

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Existing

Proposed

Source: RMW Architecture Interiors, 04/2024.

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Exhibit 3.1-1b
View 2: View South From Petersen Road at First Entry

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Existing

Proposed

Source: RMW Architecture Interiors, 04/2024.

FIRSTCARBON SOLUTIONS™

Exhibit 3.1-1c
View 3: View South From Petersen Road at Second Entry

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Existing

Proposed

Source: RMW Architecture Interiors, 04/2024.

FIRSTCARBON SOLUTIONS™

Exhibit 3.1-1d
View 4: View South From Petersen Road at East Entry

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Existing

1. EXISTING SIDEWALK
2. EXISTING WESTBOUND RIGHT TURN LANE
3. EXISTING WESTBOUND THRU TRAFFIC LANE
4. EXISTING WESTBOUND LEFT TURN LANE
5. EXISTING TRUCK / VEHICLE LANE
6. EXISTING TAFB TRUCK ONLY LANE

Proposed

1. EXISTING SIDEWALK
2. NEW WESTBOUND RIGHT TURN LANE
3. NEW WESTBOUND THRU TRAFFIC LANE
4. NEW WESTBOUND LEFT TURN LANE
5. NEW EASTBOUND VEHICLE LANE
6. NEW EASTBOUND TRUCK ONLY LANE 1
7. NEW EASTBOUND TRUCK ONLY LANE 2
8. DEDICATED SUISUN LOGISTICS LANE
9. NEW SUISUN LOGISTICS CENTER

Source:

FIRSTCARBON SOLUTIONS™

Exhibit 3.1-1e
View 5: View at Petersen Road Intersection Looking East

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Existing

1. EXISTING ROADSIDE DITCH
2. EXISTING BICYCLE LANE
3. EXISTING PEDESTRIAN PATH
4. EXISTING WESTBOUND TRUCK / VEHICLE LANE
5. EXISTING EASTBOUND VEHICLE LANE
6. EXISTING EASTBOUND DEDICATED TRUCK LANE
7. EXISTING ROADSIDE DITCH

Proposed

1. REALIGNED ROADSIDE DITCH
2. NEW PEDESTRIAN / BICYCLE PATHWAY
3. NEW WESTBOUND VEHICLE / TRUCK LANE
4. NEW EASTBOUND VEHICLE LANE
5. NEW EASTBOUND TRUCK ONLY LANE 1
6. NEW EASTBOUND TRUCK ONLY LANE 2
7. DEDICATED SUISUN LOGISTICS LANE. (TERMINATES AT LAST DRIVEWAY INTO THE SUISUN LOGISTICS SITE)
8. NEW SUISUN LOGISTICS DRIVEWAY

Source:

FIRSTCARBON SOLUTIONS™

Exhibit 3.1-1f
View 6: View at Petersen Road Intersection Looking East

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The proposed warehouse buildings would only partially obstruct views of the Potrero Hills from certain locations on one segment of Petersen Road, with setbacks between buildings that would create view corridors. As well, because the Lambrecht Sports Complex is located to the northeast of the project site (Exhibit 2-2), due south views of the Potrero Hills from the main entrance would not be altered by the proposed project.

Furthermore, neither Petersen Road nor the Lambrecht Sports Complex function as scenic viewing locations for the public. The segment of Petersen Road adjacent to the project site is less than 0.5 mile in length and serves the Sports Complex and the service entrance to Travis Air Force Base; thus, it is primarily used by persons traveling to these destinations for purposes specific to those locations, but not for the purpose of consuming views of the Potrero Hills. In addition, there are no viewing areas or turnouts along Petersen Road that allow for the public to enjoy views. Thus, any view of Potrero Hills from this stretch of roadway is seen fleetingly for less than 0.5 mile from a vehicle traveling presumably at the speed limit. The layout of the Sports Complex also does not lend itself to scenic viewing as the athletic fields are surrounded by fencing, landscaping, and signage that create visual obstructions. The Sports Complex is closed to the public at times when athletic events are not scheduled as its primary purpose is to provide a venue for sports activities and not for viewing Potrero Hills. Accordingly, the proposed project would only partially obstruct less than 0.5 mile of fleeting views of the Potrero Hills, out of 1.35+ miles of currently unobstructed views along Peterson Road, that might be seen by persons primarily driving to and from Travis Air Force Base and the Sports Complex for reasons specific to those facilities (i.e., not as intentional viewers of Potrero Hills). Moreover, City policy calling for retention of views of Potrero Hills along existing public right-of-way is non-mandatory in that retention is predicated on feasibility. Here, the proposed project cannot feasibly be constructed in a manner that fulfills its purpose and need and that also retains every foot of visibility of Potrero Hills from this segment of Peterson Road. The project has been designed, however, to retain some intermittent views for any passersby that might be inclined toward viewing Potrero Hills from their moving vehicle. Despite the fleeting and only partially obstructed views of Potrero Hills, and despite the non-mandatory nature of the applicable policy, views from the approximate 0.5-mile stretch of Peterson Road along the project site would be degraded in a manner that may be considered substantially adverse by certain individuals. As a result, this impact is considered potentially significant, with no known feasible mitigation to lessen it.

Finally, as shown in Exhibit 2-3, views of Suisun Marsh are not available from Petersen Road and, thus, by extension, from the Lambrecht Sports Complex. Thus, the proposed project would not have any potential to obstruct views of the marsh from the Sports Complex, and impacts from this view point would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact (from Peterson Road).

Mitigation Measures

No feasible mitigation.

Level of Significance After Mitigation

Significant and unavoidable impact.

Visual Character

Impact AES-2: The proposed project would not degrade the existing visual character or quality of public views of the site and its surroundings.

Impact Analysis

The 167-acre project site is mostly used for dry land farming (hay production) and grazing. A dilapidated barn structure is located in the northeastern portion of the project site. Two man-made drainage channels cross the site in a north–south direction and convey runoff to the marshland south of SR-12 via culverts. Both channels are enclosed with chain-link fences. Union Creek meanders across the southern portion of the project site in an east–west direction and exits under SR-12. The southern portion of the project site contains depressions that are occupied by emergent wetlands. A barbed wire fence surrounds the project site.

Overall, the project site displays a functional, if unremarkable, visual character. The most visible attributes are associated with agricultural activities (fencing, hay bales, livestock, etc.), which are not activities considered to be inherently visually significant. There are no notable aesthetic features. The dilapidated barn structure is partially collapsed and does not appear to have been used for agricultural purposes in years. The water and wetland features located on the southern portion of the project site are slightly more visually significant than activities and elements on the northern portion.

The proposed project would develop approximately 120 acres of the project site along Walters Road and Petersen Road and continue to preserve the remaining 47 acres (or 28 percent) along SR-12 as open space. The developed acreage would coincide with the areas currently used for grazing, which are the least visually significant portions of the project site, while the preserved acreage contains that most visually significant portions of the site.

The proposed project would be guided by a Planned Unit Development (PUD) document that would establish development standards. For example, buildings would be limited in height to no more than 50 feet above finished grade. Allowable construction methods include concrete tilt-up panel warehouse structures.

Although these would be the largest buildings in Suisun City, they would not be out of character in terms of how they visually compare with other buildings along the SR-12 corridor in Solano County, notably the Solano Business Park in Fairfield. The Solano Business Park contains a number of large commercial and industrial buildings such as the Anheuser-Busch Brewery, the Jelly Belly factory, the Meyer distribution center, and a number of other warehouse/distribution facilities.

Furthermore, two recent large commercial developments—Walmart (2015) and the Four Seasons RV Boat-Self Storage (2008)—are located on the opposite sides of Walters Road and Petersen Road from the project site, respectively. These developments signify that large nonresidential buildings are part of the existing visual landscape in the project vicinity and new ones are anticipated in the near

future. Thus, these types of buildings are not inherently visually incompatible with the visual character of the project site and existing surroundings.

Moreover, the proposed project would be developed in accordance with adopted development standards and design guidelines. The warehouse buildings would be set back approximately 100 to 150 feet from Petersen Road. Landscaping would be located along project frontages with Walters Road, Petersen Road, and SR-12. (The open space portion of the site that fronts SR-12 would remain in a natural state.) Buildings would be required to incorporate elements that create architectural interest such as projections, treatments, or variations in colors and textures. Architecture and site design would be reviewed by the City of Suisun City for conformance with design guidelines.

Pursuant to General Plan Policy CCD-6.4, listed above in Section 3.1.3, Regulatory Framework, the City does not consider urban development that is consistent with General Plan community design policies to represent a degradation of visual character for the purpose of environmental impact analysis.

The proposed project would irreversibly change the visual character of the project site by developing urban uses on it. However, this in itself is not a significant impact, as the proposed project would continue to preserve 28 percent of the site as open space and locate development in the portions of the site that are contiguous to other existing developments within Suisun City and that currently do not host visually significant elements. Additionally, the project's proposed buildings would be compatible with other recent and planned developments in the project vicinity and would be consistent with applicable General Plan Policy CCD-6.4, which does not consider urban development that is consistent with design policies, as is the proposed project, to constitute a degradation of visual character in environmental analysis. Lastly, the Zoning Code's development standards and the PUD's design guidelines would ensure that the proposed project would employ high-quality design. Therefore, there would be less than significant impacts associated with degradation of the existing visual character or quality of public views of the site and its surroundings.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Light and Glare

Impact AES-3:	**The proposed project may create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.**

Impact Analysis

The project site is currently used for grazing and does not have any existing sources of light and glare.

Temporary sources of light glare would be used during construction of the proposed project, such as mobile light towers. New permanent sources of light and glare would be introduced, including freestanding lights, building-mounted lights, and illuminated signage. The PUD sets forth development standards for the proposed project that require that lighting employ full cut-off fixtures or other shielding devices to prevent light trespass onto neighboring properties.

The City's Travis Air Force Base Airport Land Use Compatibility Plan sets forth policies that concern light and glare. Of particular concern are land uses that emit glint, glare, or distracting lights that could be mistaken for airport lights; and sources of dust, steam, high-velocity exhaust plumes, or smoke that may impair pilot visibility. Additionally, commercial-scale solar applications require special review to ensure compatibility with aviation activities. Thus, there is a potential for a significant impact to occur.

To ensure that the proposed project is compatible with Travis Air Force Base, Mitigation Measure AES-3 requires the City to review all building designs prior to issuing building permits to determine consistency with the Travis Air Force Base Airport Land Use Compatibility Plan and whether or not any designs have the potential to create hazards to flight. If a potential hazard to flight is noted, the City shall require the applicant to modify the proposed project design to ensure the potential hazard is removed. With the implementation of mitigation, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AES-3 Prior to issuance of building permits for each structure, the City of Suisun City shall review the design of each warehouse to ensure that it is compatible with Travis Air Force Base aviation operations and consistency with the Travis Air Force Base Airport Land Use Compatibility Plan. Proposed structures shall be assessed to determine whether they emit glint, glare, or distracting lights that could be mistaken for airport lights or emit dust, steam, high-velocity exhaust plumes, or smoke that may impair pilot visibility. Additionally, any proposals for photovoltaic solar systems shall be evaluated with a solar glare analysis. If a potential hazard to flight is noted, the City shall require the applicant to modify the proposed project design to remove the hazard. As part of its process for reviewing proposed building permits, the City shall provide Travis Air Force Base representatives with copies of all building plans and the opportunity to comment on compatibility with aviation operations. The City shall not approve building permits prior to receipt of any timely input from such Base representatives. Input shall be considered timely if provided to the City within 30 days after Base representatives have received proposed building plans.

Level of Significance After Mitigation

Less than significant impact.

3.2 - Air Quality

3.2.1 - Introduction

This section describes existing air quality conditions regionally and locally as well as the relevant regulatory framework. This section also evaluates the possible impacts related to air quality that could result from implementation of the project. Information included in this section is based on project-specific air quality modeling results utilizing California Emissions Estimator Model (CalEEMod) Version 2022.1, the American Meteorological Society/United States Environmental Protection Agency (EPA) Regulatory Model (AERMOD, Version 23132) air dispersion model. Complete modeling output is provided in Appendix B1, within the appendices to the Suisun Logistics Center Air Quality/Health Risk Technical Report prepared by Ramboll Americas Engineering Solution, Inc (AQ/HRA Report). The following comments related to Air Quality were received during the Notice of Preparation (NOP) scoping period:

- The Draft Environmental Impact Report (Draft EIR) should carefully assess and mitigate the project's impacts on air quality.
- Because of the project's proximity to residences and schools already disproportionately burdened by multiple sources of air pollution, the Draft EIR should address the potential cumulative health impacts associated with the construction and operation of the project.
- The Draft EIR should specifically quantify and discuss the potential cancer risks from on-site Transport Refrigeration Units (TRUs).
- The final design of the project should include existing and emerging zero-emission technologies to minimize diesel particulate matter (DPM) and oxides of nitrogen (NO_X) emissions, as well as emissions of greenhouse gases.

3.2.2 - Environmental Setting

San Francisco Bay Area Air Basin

The project site is in the unincorporated area of Solano County, adjacent to Suisun City, which is within the San Francisco Bay Area Air Basin (Air Basin), and under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The Air Basin consists of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties; the western portion of Solano County; and the southern portion of Sonoma County.

Air quality in the Air Basin is regulated by the United States Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and BAAQMD. The regulatory responsibilities of these agencies are discussed below in the Regulatory Framework and Rules Section. Regional and local air quality within the Air Basin is impacted by dominant airflows, topography, atmospheric inversions, location, season, and time of day. These characteristics are discussed below.

Local Climate

A semi-permanent, high-pressure area centered over the northeastern Pacific Ocean dominates the summer climate of the West Coast of the United States. This high-pressure cell called the Pacific High is relatively persistent in influencing the regional weather particularly during the summer months. Consequently, storms rarely affect the California coast during the summer. Thus, the conditions that persist along the coast of California during summer are winds from the northwest direction and negligible precipitation. A thermal low-pressure area located over the Central Valley of California and the southeastern desert areas also causes air to flow onshore over the San Francisco Bay Area much of the summer. This summertime pattern can be interrupted by local rainfall events caused by the movement of warm moist air from the Gulf of Mexico into California.

The steady northwesterly flow around the eastern edge of the Pacific High exerts wind-caused stress on the ocean surface along the West Coast. This stress induces upwelling of cold water from below. Upwelling produces a band of cold water off San Francisco that is approximately 80 miles wide. During July, the surface waters off San Francisco are 3 degrees Fahrenheit (°F) cooler than those off Vancouver, British Columbia, more than 900 miles to the north. Air approaching the California coast, already cool and moisture-laden from its long trajectory over the Pacific, is further cooled as it flows across this cold bank of water near the coast, thus accentuating the temperature contrast across the coastline. This cooling is often sufficient to produce condensation—a high incidence of fog and stratus clouds along the Northern California coast in summer.

In summer, the northwest winds to the west of the Pacific coastline are drawn into the interior through the gap in the western Coast Ranges, known as the Golden Gate, and over the lower portions of the San Francisco Peninsula. Immediately to the south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more nearly from the west as they stream through the Golden Gate. This channeling of the flow through the Golden Gate produces a jet that sweeps eastward but widens downstream, producing southwest winds at Berkeley and northwest winds at San Jose; a branch curves eastward through the Carquinez Straits and into the Central Valley. Wind speeds may be locally strong in regions where air is channeled through a narrow opening such as the Golden Gate, the Carquinez Strait, or San Bruno Gap. For example, the average wind speed at San Francisco International Airport from 3:00 a.m. to 4:00 p.m. in July is about 20 miles per hour (mph), compared with only about 8 mph at San Jose and less than 7 mph at the Farallon Islands, 30 miles to the west of San Francisco.

The sea breeze between the coast and the Central Valley commences near the surface along the coast in late morning or early afternoon; it may first be observed only through the Golden Gate. Later in the day, the layer deepens and intensifies while spreading inland. As the breeze intensifies and deepens, it flows over the lower hills farther south along the peninsula. This process frequently can be observed as a bank of stratus clouds “rolling over” the coastal hills on the west side of the bay. The depth of the sea breeze depends in large part upon the height and strength of the inversion. The generally low elevation of this stable layer of air prevents marine air from flowing over the coastal hills. It is unusual for the summer sea breeze to flow over terrain exceeding 2,000 feet in elevation.

In winter, the Air Basin experiences periods of storminess, moderate-to-strong winds, and periods of stagnation with very light winds. Winter stagnation episodes are characterized by outflow from the Central Valley, nighttime drainage flows in coastal valleys, weak onshore flows in the afternoon, and otherwise light and variable winds.

A primary factor in air quality is the mixing depth (the vertical air column available for dilution of contaminant sources). Generally, the temperature of air decreases with height, creating a gradient from warmer air near the ground to cooler air at elevation. This is caused by most of the sun's energy being converted to sensible heat at the ground, which in turn warms the air at the surface. The warm air rises in the atmosphere, where it expands and cools. Sometimes, however, the temperature of air increases with height. This condition is known as temperature inversion because the temperature profile of the atmosphere is "inverted" from its usual state. Over the Air Basin, the frequent occurrence of temperature inversions limits mixing depth and, consequently, limits the availability of air for dilution resulting in elevated pollutant levels.

Air Pollutant Types, Sources, and Effects

Criteria Air Pollutants

Air pollutants are termed "criteria air pollutants" if they are regulated by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. Table 3.2-1 provides a summary of the types, sources, and effects of criteria air pollutants.

Table 3.2-1: Description of Criteria Pollutants of National and California Concern

Criteria Pollutant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
Ozone	Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), nitrous oxides (NO_X), and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.	Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and NO_X) are mobile sources (on-road and off-road vehicle exhaust).	Irritate respiratory system; reduce lung function; change breathing pattern; reduce breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; induce some immunological changes; increase mortality risk; damage to vegetation and property.
Particulate matter (PM_{10}) Particulate matter ($PM_{2.5}$)	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} refers to particulate matter that is between 2.5 and	Suspended particulate matter sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; the use of metals, minerals, and	• Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravate existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can

Criteria Pollutant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
	10 microns in diameter, (one micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.	petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal, and recycling. Mobile or transportation-related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.	suffer heart attacks and arrhythmias. • Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death.
Nitrogen dioxide (NO_2)	During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides—NO_X (NO, NO_2, NO_3, N_2O, N_2O_3, N_2O_4, and N_2O_5). NO_X is a precursor to ozone, PM_{10}, and $PM_{2.5}$ formation. NO_X can react with compounds to form nitric acid and related small particles and can result in PM-related health effects.	NO_X is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Nitrogen dioxide forms quickly from NO_X emissions. NO_2 concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.	Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; contributions to atmospheric discoloration; increased visits to hospital for respiratory illnesses.
Carbon monoxide (CO)	CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.	CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood-burning, and natural sources.	Ranges depending on exposure: slight headaches; nausea; aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; decreased exercise tolerance in persons with peripheral vascular disease and lung disease; impairment of central nervous system functions; possible increased risk to fetuses; death.
Sulfur dioxide (SO_2)	Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 parts per million (ppm), the gas has a strong odor similar to rotten eggs. Sulfur oxides (SO_X) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources	Human caused sources include fossil fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethyl sulfide and	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with

Criteria Pollutant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
	and materials. Although sulfur dioxide concentrations have been reduced to levels well below State and federal standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and PM_{10}.	hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum standards.	ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically, or one pollutant alone is the predominant factor.
Lead (Pb)	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded State or federal standards at any monitoring station since 1982.	Lead ore crushing, lead ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQs.

Sources:

California Air Resources Board (ARB). 2021. Vinyl Chloride & Health. Website: https://ww2.arb.ca.gov/resources/vinyl-chloride-and-health. Accessed February 9, 2023.

California Office of Environmental Health Hazard Assessment (OEHHA). 2001. Health Effects of Diesel Exhaust. Website: https://oehha.ca.gov/media/downloads/calenviroscreen/indicators/diesel4-02.pdf. Accessed February 9, 2023.

National Archives and Records Administration. 2009. Part II, Environmental Protection Agency. 40 Code of Federal Regulations Parts 50 and 58, Primary National Ambient Air Quality Standard for Nitrogen Dioxide; Proposed Rule. July 15. Website: https://www.gpo.gov/fdsys/pkg/FR-2009-07-15/pdf/E9-15944.pdf. Accessed February 9, 2023.

National Toxicology Program. 2016. Report on Carcinogens, 14th Edition; U.S. Department of Health and Human Services, Public Health Service. Benzene. November 3. Website: http://ntp.niehs.nih.gov/ntp/roc/twelfth/profiles/Benzene.pdf. Accessed February 9, 2023.

National Toxicology Program. 2016. Report on Carcinogens, 14th Edition; U.S. Department of Health and Human Services, Public Health Service. Diesel Exhaust Particles. November 3. Website: https://ntp.niehs.nih.gov/ntp/roc/content/profiles/dieselexhaustparticulates.pdf. Accessed February 9, 2023.

South Coast Air Quality Management District (South Coast AQMD). 2007. Final 2007 Air Quality Management Plan. June. Website: https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2007-air-quality-management-plan/2007-aqmp-final-document.pdf?sfvrsn=2. Accessed February 9, 2023.

United States Environmental Protection Agency (EPA). 2016. Nitrogen Dioxide (NO_2) Pollution. Basic Information about NO_2. Website: https://www.epa.gov/no2-pollution/basic-information-about-no2#What%20is%20NO2. Accessed February 9, 2023.

United States Environmental Protection Agency (EPA). 2020. Particulate Matter (PM) Pollution. Health and Environmental Effects of Particulate Matter. Website: https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm. Accessed February 9, 2023.

United States Environmental Protection Agency (EPA). 2020. Health Effects Notebook for Hazardous Air Pollutants. Website: www.epa.gov/ttn/atw/hlthef/hapindex.html. Accessed February 9, 2023.

Criteria Pollutant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
United States Environmental Protection Agency (EPA). 2021. Indoor Air Quality (IAQ). Volatile Organic Compounds' Impact on Indoor Air Quality. Website: https://www.epa.gov/indoor-air-quality-iaq/volatile-organic-compounds-impact-indoor-air-quality. Accessed February 9, 2023. United States Environmental Protection Agency (EPA). 2021. Health Effects of Ozone Pollution. Website: https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution. Accessed February 9, 2023.			

Toxic Air Contaminants

Concentrations of toxic air contaminants (TACs) are also used as indicators of air quality conditions. Air pollutant human exposure standards are identified for many TACs, including the following common TACs relevant to development projects: particulate matter, lead, and asbestos. These air pollutants are called TACs because they are air pollutants that may cause or contribute to an increase in mortality or in serious illness or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health impact may pose a threat to public health even at low concentrations. TACs can cause long-term health effects (such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage) or short-term acute affects (such as eye watering, respiratory irritation, runny nose, throat pain, or headaches).

TACs are separated into carcinogens and noncarcinogens based on the nature of the physiological effects associated with exposure to a particular TAC. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. Cancer risk is typically expressed as excess cancer cases per million exposed individuals over a lifetime exposure or other prolonged duration. For noncarcinogenic substances, there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels may vary depending on the specific pollutant. Acute and chronic exposure to noncarcinogens is expressed as a hazard index (HI), which is the ratio of expected exposure levels to an acceptable Reference Exposure Level (REL). Table 3.2-2 provides a summary of the types, sources, and effects of TACs.

Table 3.2-2: Description of Toxic Air Contaminants of National and California Concern

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
Diesel Particulate Matter (DPM)	DPM is a source of $PM_{2.5}$—diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds	Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. Typically, the main source of DPM is from combustion of diesel fuel in diesel-powered engines. Such engines are in on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various	Some short-term (acute) effects of DPM exposure include eye, nose, throat, and lung irritation, coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
	such as hydrocarbons and their derivatives and polycyclic aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, several which are found in diesel exhaust.	pieces of stationary construction equipment.	studies on the carcinogenicity of DPM demonstrate an increased risk of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure.
VOCs	Reactive organic gases (ROGs), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably.	Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.	Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as toxic air contaminants (TACs).
Benzene	Benzene is a VOC. It is a clear or colorless light-yellow, volatile, highly flammable liquid with a gasoline-like odor. The EPA has classified benzene as a "Group A" carcinogen.	Benzene is emitted into the air from fuel evaporation, motor vehicle exhaust, tobacco smoke, and from burning oil and coal. Benzene is used as a solvent for paints, inks, oils, waxes, plastic, and rubber. Benzene occurs naturally in gasoline at 1 to 2 percent by volume. The primary route of human exposure is through inhalation.	Short-term (acute) exposure of high doses from inhalation of benzene may cause dizziness, drowsiness, headaches, eye irritation, skin irritation, and respiratory tract irritation, and at higher levels, loss of consciousness can occur. Long-term (chronic) occupational exposure of high doses has caused blood disorders, leukemia, and lymphatic cancer.
Asbestos	Asbestos is the name given to several naturally occurring fibrous silicate minerals that have been mined for their useful properties, such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of	Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States.	Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
	asbestos are chrysotile, amosite, and crocidolite.		lung disease that causes scarring of the lungs). Exposure to asbestos can occur during demolition or remodeling of buildings that were constructed prior to the 1977 ban on asbestos for use in buildings. Exposure to naturally occurring asbestos can occur during soil-disturbing activities in areas with deposits present.
Hydrogen Sulfide	Hydrogen sulfide (H_2S) is a flammable, colorless, poisonous gas that smells like rotten eggs.	Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide. Anthropogenic sources include the combustion of sulfur containing fuels (oil and coal).	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.
Sulfates	Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water.	Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel.	Sulfates can cause a decrease in ventilatory function, aggravation of asthmatic symptoms; and aggravation of cardiopulmonary disease, as well as vegetation damage, degradation of visibility, property damage.
Visibility-Reducing Particles	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} refers to particulate matter that is between 2.5 and 10 microns in diameter (1 micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.	Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal; and recycling. Mobile or transportation-related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.	Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravates existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias. Long-term exposure can result in reduced lung function, chronic bronchitis, changes in lung morphology, and death.
Vinyl Chloride	Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In	Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and	Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
	1990, the ARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.	cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites.	dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.
Lead (Pb)	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded State or federal standards at any monitoring station since 1982.	Lead ore crushing, lead ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQs.

Sources:

California Air Resources Board (ARB). 2021. Vinyl Chloride & Health. Website: https://ww2.arb.ca.gov/resources/vinyl-chloride-and-health. Accessed February 9, 2023.

California Office of Environmental Health Hazard Assessment (OEHHA). 2001. Health Effects of Diesel Exhaust. Website: https://oehha.ca.gov/media/downloads/calenviroscreen/indicators/diesel4-02.pdf. Accessed February 9, 2023.

National Archives and Records Administration. 2009. Part II, Environmental Protection Agency. 40 Code of Federal Regulations Parts 50 and 58, Primary National Ambient Air Quality Standard for Nitrogen Dioxide; Proposed Rule. July 15. Website: https://www.gpo.gov/fdsys/pkg/FR-2009-07-15/pdf/E9-15944.pdf. Accessed February 9, 2023.

National Toxicology Program. 2016. Report on Carcinogens, 14th Edition; U.S. Department of Health and Human Services, Public Health Service. Benzene. November 3. Website: http://ntp.niehs.nih.gov/ntp/roc/twelfth/profiles/Benzene.pdf. Accessed February 9, 2023.

National Toxicology Program. 2016. Report on Carcinogens, 14th Edition; U.S. Department of Health and Human Services, Public Health Service. Diesel Exhaust Particles. November 3. Website: https://ntp.niehs.nih.gov/ntp/roc/content/profiles/dieselexhaustparticulates.pdf. Accessed February 9, 2023.

South Coast Air Quality Management District (South Coast AQMD). 2007. Final 2007 Air Quality Management Plan. June. Website: https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2007-air-quality-management-plan/2007-aqmp-final-document.pdf?sfvrsn=2. Accessed February 9, 2023.

United States Environmental Protection Agency (EPA). 2016. Nitrogen Dioxide (NO_2) Pollution. Basic Information about NO_2. Website: https://www.epa.gov/no2-pollution/basic-information-about-no2#What%20is%20NO2. Accessed February 9, 2023.

Air Quality

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features. Atmospheric conditions such as wind speed, wind direction, and air temperature inversions interact with the physical features of the landscape to

determine the movement and dispersal of air pollutant emissions and, consequently, their effect on air quality.

Regional Air Quality

The BAAQMD is the regional agency regulating air quality within the nine-county Air Basin, which includes Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, the western portion of Solano County, and the southern portion of Sonoma County.

Air Pollutant Standards and Attainment Designations

Air pollutant standards have been adopted by the EPA and the ARB for the following six criteria air pollutants that affect ambient air quality: ozone, NO_2, CO, SO_2, lead, and particulate matter (PM), which is subdivided into two classes based on particle size: PM with aerodynamic diameters equal to or less than 10 microns (PM_{10}), and PM with aerodynamic diameters equal to or less than 2.5 microns ($PM_{2.5}$). These air pollutants are called "criteria air pollutants" because they are regulated by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. California has also established standards for TACs such as visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. Table 3.2-3 presents the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) for these aforementioned air pollutants. Note that there are no State or federal ambient air quality standards for ROGs, benzene, or DPM.

Table 3.2-3: Federal and State Air Quality Standards in the Air Basin

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]
Ozone	1 Hour	0.09 ppm	—
	8 Hour	0.070 ppm	0.070 ppm[f]
Nitrogen dioxide[b] (NO_2)	1 Hour	0.18 ppm	0.100 ppm
	Annual	0.030 ppm	0.053 ppm
Carbon monoxide (CO)	1 Hour	20 ppm	35 ppm
	8 Hour	9.0 ppm	9 ppm
Sulfur dioxide[c] (SO_2)	1 Hour	0.25 ppm	0.075 ppm
	3 Hour	—	0.5 ppm
	24 Hour	0.04 ppm	0.14 (for certain areas)
	Annual	—	0.030 ppm (for certain areas)
Lead[e]	30-day	1.5 µg/m^3	—
	Quarter	—	1.5 µg/m^3
	Rolling 3-month average	—	0.15 µg/m^3

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]
Particulate matter (PM_{10})	24 hour	50 µg/m^3	150 µg/m^3
	Mean	20 µg/m^3	—
Particulate matter ($PM_{2.5}$)	24 Hour	—	35 µg/m^3
	Annual	12 µg/m^3	12.0 µg/m^3
Visibility-reducing particles	8 Hour	See note below[d]	
Sulfates	24 Hour	25 µg/m^3	—
Hydrogen sulfide	1 Hour	0.03 ppm	—
Vinyl chloride[e]	24 Hour	0.01 ppm	—

Notes:
ppm = parts per million (concentration) µg/m^3 = micrograms per cubic meter Annual = Annual Arithmetic Mean
30-day = 30-day average Quarter = Calendar quarter

[a] Federal standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3-Hour SO_2, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[b] To attain the 1-hour nitrogen dioxide national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (0.100 ppm).

[c] On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 parts per billion (ppb). The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[d] Visibility-reducing particles: In 1989, the ARB converted both the general Statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the Statewide and Lake Tahoe Air Basin standards, respectively.

[e] The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for implementing control measures at levels below the ambient concentrations specified for these pollutants.

[f] The EPA Administrator approved a revised 8-hour ozone standard of 0.07 ppb on October 1, 2015. The new standard went into effect 60 days after publication the Final Rule in the Federal Register. The Final Rule was published in the Federal Register on October 26, 2015, and became effective on December 28, 2015.

Source: California Air Resources Board (ARB). 2016. Ambient Air Quality Standards. May 4. Website: https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf. Accessed February 9, 2023.

Air quality monitoring stations operated by the ARB and BAAQMD measure ambient air pollutant concentrations in the Air Basin. In general, the Air Basin experiences low concentrations of most pollutants compared to federal or State standards.

Both the EPA and ARB use ambient air quality monitoring data to designate areas according to their attainment status for criteria air pollutants. These designations identify the areas with air quality problems and initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. "Attainment" status refers to those regions that are meeting federal and/or State standards for a specified criteria pollutant. "Nonattainment" refers to regions that do not meet federal and/or State standards for a specified criteria pollutant. "Unclassified" refers to regions with insufficient data to determine the region's attainment status for a specified criteria air pollutant. Each standard has a different definition, or "form" of what

constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the three-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

Table 3.2-4 displays the current attainment designations for the Air Basin. As shown therein, the Air Basin is designated as nonattainment for the State ozone, PM_{10}, and $PM_{2.5}$ standards and the national ozone and $PM_{2.5}$ standards.

Table 3.2-4: San Francisco Bay Area Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	N/A
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Nonattainment	Nonattainment
Sulfates	Attainment	N/A
Hydrogen Sulfates	Unclassified	N/A
Visibility-reducing Particles	Unclassified	N/A
Lead	N/A	Attainment

Notes:
N/A = information not available.
Source: Bay Area Air Quality Management District (BAAQMD). 2017. Air Quality Standards and Attainment Status. January 5. Website: http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status. Accessed February 9, 2023.

Air Quality Index

The health impacts of the various air pollutants of concern can be presented in several ways. The clearest comparison is to the State and federal ozone standards. If concentrations are below the standard, it is safe to say that no health impact would occur to anyone. When concentrations exceed the standard, impacts will vary based on the amount by which the standard is exceeded. The EPA developed the Air Quality Index (AQI) as an easy-to-understand measure of health impacts compared with concentrations in the air. Table 3.2-5 provides a general description of the health impacts of ozone at different concentrations.

Table 3.2-5: Air Quality Index and Health Effects from Ozone

Air Quality Index/ 8-hour Ozone Concentration	Health Effects Description
AQI—0–50—Good	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
Concentration 0–54 ppb	**Health Effects Statements**: None.
	Cautionary Statements: None.
AQI—51–100—Moderate	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
Concentration 55–70 ppb	**Health Effects Statements**: Unusually sensitive individuals may experience respiratory symptoms.
	Cautionary Statements: Unusually sensitive people should consider limiting prolonged outdoor exertion.
AQI—101–150—Unhealthy for Sensitive Groups	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
Concentration 71–85 ppb	**Health Effects Statements**: Increasing likelihood of respiratory symptoms and breathing discomfort in active children and adults, and people with respiratory disease, such as asthma.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.
AQI—151–200—Unhealthy	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
Concentration 86–105 ppb	**Health Effects Statements**: Greater likelihood of respiratory symptoms and breathing difficulty in active children and adults and people with respiratory disease, such as asthma; possible respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
AQI—201–300—Very Unhealthy	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
Concentration 106–200 ppb	**Health Effects Statements**: Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasing likelihood of respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.
Source: Air Now. N.d. AQI Calculator: AQI to Concentration Calculator. Website: https://www.airnow.gov/aqi/aqi-calculator. Accessed February 9, 2023.	

Local Air Quality

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features. Atmospheric conditions such as wind speed, wind direction, and air temperature inversions interact with the physical features of the landscape to determine the movement and dispersal of air pollutant emissions and, consequently, their effect on air quality.

The local air quality can be evaluated by reviewing relevant air pollutant concentrations near the project area. Table 3.2-6 summarizes 2017–2019 published monitoring data, which is the most recent 3-year period available, at the nearest air monitoring station to the project site for the respective pollutant. The 1-hour ozone data was collected from the Fairfield-Chadbourne Road Monitoring Station (approximately 5.2 miles east of the project site), and the nitrogen dioxide (NO_2), sulfur dioxide (SO_2), 8-hour ozone and fine particulate matter ($PM_{2.5}$) were collected from the Vallejo-304 Tuolumne Street Monitoring Station (approximately 16.5 miles southwest of the project site). PM_{10} data were taken from the Vacaville-Merchant Street air monitoring station (approximately 7.5 miles north of the project site). The data shows that during the past few years, the project area has exceeded the standards for ozone (State and national), and $PM_{2.5}$ (national).

Table 3.2-6: Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Item	2017	2018	2019
Ozone[(1)]	1 Hour	Max 1 Hour (ppm)	**0.105**	0.083	**0.095**
		Days > State Standard (0.09 ppm)	**1**	0	**1**
	8 Hour	Max 8 Hour (ppm)	**0.089**	0.068	**0.076**
		Days > State Standard (0.07 ppm)	**2**	0	**2**
		Days > National Standard (0.070 ppm)[(2)]	**2**	0	**2**
CO	8 Hour	Max 8 Hour (ppm)	ND	ND	ND
		Days > State Standard (9.0 ppm)	ND	ND	ND
		Days > National Standard (9 ppm)	ND	ND	ND
NO_2[(1)]	Annual	Annual Average (ppm)	0.008	ND	0.001
	1 Hour	Max 1 Hour (ppm)	0.049	0.040	0.040
		Days > State Standard (0.18 ppm)	0	0	0
SO_2	Annual	Annual Average (ppm)	ND	ND	ND
	24 Hour	Max 24 Hour (ppm)	ND	ND	ND
		Days > State Standard (0.04 ppm)	ND	ND	ND
Inhalable coarse particles (PM_{10})[(1)]	Annual	Annual Average (µg/m^3)	11.5	12.7	13.5
	24 Hour	Max 24 Hour (µg/m^3)	ND	26.0	39.0
		Days > State Standard (50 µg/m^3)	ND	ND	ND
		Days > National Standard (150 µg/m^3)	ND	ND	0

Air Pollutant	Averaging Time	Item	2017	2018	2019
Fine particulate matter ($PM_{2.5}$)[(1)]	Annual	Annual Average (µg/m^3)	11.7	ND	6
	24 Hour	24 Hour (µg/m^3)	**101.9**	**117.9**	21.5
		Days > National Standard (35 µg/m^3)	**9**	ND	0

Notes:
> = exceed ppm = parts per million µg/m^3 = micrograms per cubic meter
ID = insufficient data ND = no data max = maximum
Bold = exceedance
State Standard = California Ambient Air Quality Standard
National Standard = National Ambient Air Quality Standard
[1] Fairfield—Chadbourne Road Air Monitoring Station
[2] Vallejo—304 Tuolumne Street Air Monitoring Station
[3] Vacaville-Merchant Street Air Monitoring Station
Source: California Air Resources Board (ARB). 2018. iADAM: Top 4 Summary. Website: https://www.arb.ca.gov/adam/select8/sc8start.php. Accessed February 9, 2023.

Based on the AQI scale for the 8-hour ozone standard, the nearest monitoring station experienced two days in 2017 that would be categorized as unhealthy and two days in 2019 that would be considered unhealthy for sensitive groups, as measured at the Fairfield-Chadbourne Road Monitoring Station.

Sensitive Receptors

Air pollution does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others are. Land uses such as residences, schools, day care centers, hospitals, nursing and convalescent homes, and parks are considered the most sensitive to poor air quality, because the population groups associated with these uses have increased susceptibility to respiratory distress or, as in the case of residential receptors, their exposure time is greater than that for other land uses. Therefore, these groups are referred to as sensitive receptors. Exposure assessment guidance typically assumes that residences would receive exposure to air pollution 24 hours per day, 350 days per year, for 70 years. The BAAQMD defines sensitive receptors as children, adults, and seniors occupying or residing in residential dwellings, schools, day care centers, hospitals, senior-care facilities, and off-site workers.

Project Vicinity

The closest off-site air pollution sensitive receptors near the project site in each direction include the following:

- One single-family residence approximately 2,000 feet southeast of the project site.
- One single-family residence approximately 3,610 feet east of the project site.
- Residential neighborhood approximately 695 feet north of the project site.
- Dan O. Root Health & Wellness Academy approximately 2,800 feet northwest of the project site.

- Residential neighborhood approximately 250 feet northwest of the project site.
- Residential neighborhood approximately 160 feet southwest of the project site.
- Workers located in commercial and retail buildings approximately 180 feet north of the project site.

No areas adjacent to the project site are identified as Disadvantaged Communities by the California Environmental Protection Agency.[1]

Project Site

The project site is vacant, and no sensitive receptors currently exist on the project site.

Existing Emission Sources

Project Site Vicinity

The primary sources of air pollutants (both criteria air pollutants and TACs) in the project site vicinity include sources at various surrounding properties, including building-related energy use and motor-related vehicle trips associated with local businesses and facilities. Nearby residential neighborhoods, the Walmart supercenter, and the Travis Airforce Base all present existing emission sources in the project vicinity. In addition, the project site is approximately 30 feet northeast of Highway 12. Other activities which result in emissions include space and water heating, landscape maintenance, and any surrounding industrial uses which have the potential to store, produce, decommission, or otherwise handle hazardous materials.

Project Site

The project site itself is currently vacant and does not produce any air pollutants.

3.2.3 - Regulatory Framework

Federal

Clean Air Act

Congress established much of the basic structure of the Clean Air Act (CAA) in 1970 and made major revisions in 1977 and 1990. Six common air pollutants (also known as criteria pollutants) are addressed in the CAA. These are particulate matter, ground level ozone, CO, sulfur oxides, nitrogen oxides, and lead. The EPA calls these pollutants criteria air pollutants because it regulates them by developing human health-based and/or environmentally based criteria (science-based guidelines) for setting permissible levels. The set of limits based on human health are called primary standards. Another set of limits intended to prevent environmental and property damage are called secondary standards.[2] The federal standards are called NAAQS. The air quality standards provide benchmarks

[1] California Environmental Protection Agency (Cal/EPA). 2022. SB 535 Disadvantaged Communities 2022. Website: https://experience.arcgis.com/experience/1c21c53da8de48f1b946f3402fbae55c/page/SB-535-Disadvantaged-Communities/. Accessed December 19, 2023. See also Appendix B1 (AQ/HRA Report), Section 7.4.

[2] United States Environmental Protection Agency (EPA). 2014. Clean Air Act Requirements and History. Website: https://www.epa.gov/clean-air-act-overview/clean-air-act-requirements-and-history. Accessed February 9, 2023.

for determining whether air quality is healthy at specific locations and whether development activities will cause or contribute to a violation of the standards. The criteria pollutants are:

- Ozone
- Nitrogen dioxide (NO_2)
- Lead
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Carbon monoxide (CO)
- Sulfur dioxide

The federal standards were set to protect public health, including that of sensitive individuals; thus, the EPA is tasked with updating the standards as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health.

The CAA also requires each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). 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. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies.

EPA Emission Standards for New Off-Road Equipment

Before 1994, there were no standards to limit the amount of emissions from off-road equipment. In 1994, the EPA established emission standards for hydrocarbons, NO_X, CO, and PM to regulate new pieces of off-road equipment. These emission standards came to be known as Tier 1. Since that time, increasingly more stringent Tier 2, Tier 3, and Tier 4 (interim and final) standards were adopted by the EPA, as well as by the ARB. Each adopted emission standard was phased in over time. New engines built in and after 2015 across all horsepower sizes must meet Tier 4 final emission standards. In other words, new manufactured engines cannot exceed the emissions established for Tier 4 final emissions standards.

State

California Air Quality Control Plan (State Implementation Plan)

An SIP is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal air quality standards. The ARB, which has overall responsibility for Statewide air quality maintenance and air pollution prevention, administers the SIP for the State of California. California's SIP incorporates individual federal attainment plans for regional air districts—an air district prepares their federal attainment plan, which is sent to the ARB to be approved and incorporated into the California SIP. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms for attaining and maintaining air quality standards.

Areas designated nonattainment must develop air quality plans and regulations to achieve standards by specified dates, depending on the severity of the exceedances. For much of the country, implementation of federal motor vehicle standards and compliance with federal permitting

requirements for industrial sources are adequate to attain air quality standards on schedule. For many areas of California, however, additional State and local regulation is required to achieve the standards.

California Clean Air Act

The California Legislature enacted the California Clean Air Act (CCAA) in 1988 to address air quality issues of concern not adequately addressed by the federal CAA at the time. California's air quality problems were and continue to be some of the most severe in the nation and required additional actions beyond the federal mandates. The ARB administers the CAAQS for the 10 air pollutants designated in the CCAA. The 10 State air pollutants are the six federal standards listed above as well as visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The EPA authorized California to adopt its own regulations for motor vehicles and other sources that are more stringent than similar federal regulations implementing the CAA. Generally, the planning requirements of the CCAA are more stringent than the federal CAA; therefore, consistency with the CCAA will also demonstrate consistency with the CAA.

Other ARB responsibilities include, but are not limited to, overseeing local air district compliance with California and federal laws; approving local air quality plans; submitting SIPs to the EPA; monitoring air quality; determining and updating area designations and maps; conducting basic research aimed at providing a better understanding between emissions and public well-being, and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

California Health and Safety Code Section 39655 and California Code of Regulations Title 17 Section 93000 (Substances Identified as Toxic Air Contaminants)

The ARB identifies substances as TACs as defined in Health and Safety Code Section 39655 and listed in Title 17, Section 93000 of the California Code of Regulations, "Substances Identified as Toxic Air Contaminants." A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. In general, for those TACs that may cause cancer, there are thresholds set by regulatory agencies below which adverse health impacts are not expected to occur. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the State and federal governments have set ambient air quality standards. According to the California Almanac of Emissions and Air Quality, the majority of the estimated health risk from TACs for the State of California can be attributed to relatively few compounds, the most important of which is DPM from diesel-fueled engines.

California Low-Emission Vehicle Program

The ARB first adopted Low-Emission Vehicle (LEV) program standards in 1990. These first LEV standards ran from 1994 through 2003. LEV II regulations, running from 2004 through 2010, represent continuing progress in emission reductions. As the State's passenger vehicle fleet continues to grow and more sport utility vehicles and pickup trucks are used as passenger cars rather than work vehicles, more stringent LEV II standards were adopted to provide reductions necessary for California to meet federally mandated clean air goals outlined in the 1994 SIP. In 2012, the ARB adopted the LEV III amendments to

California's LEV regulations. These amendments, also known as the Advanced Clean Car Program, include more stringent emission standards for model years 2017 through 2025 for criteria pollutants and greenhouse gas (GHG) emissions for new passenger vehicles. Most recently, the Advanced Clean Cars II regulation adopted by the ARB on November 30, 2022, requires that, by 2035, new passenger vehicles sold in California be zero-emissions, and further amends the LEV Regulations to require increasingly stringent standards for gasoline-powered cars and passenger trucks.[3]

California On-Road Heavy-Duty Vehicle Program

The ARB has adopted standards for emissions from various types of new on-road heavy-duty vehicles. Section 1956.8, Title 13, California Code of Regulations contains California's emission standards for on-road heavy-duty engines and vehicles, and test procedures. The ARB has also adopted programs to reduce emissions from in-use heavy-duty vehicles including the Heavy-Duty Diesel Vehicle Idling Reduction Program, the Heavy-Duty Diesel In-Use Compliance Program, the Public Bus Fleet Rule and Engine Standards, and the School Bus Program and others.[4]

California In-Use Off-Road Diesel Vehicle Regulation

On July 26, 2007, the ARB adopted a regulation to reduce DPM and NO_X emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. The ARB is enforcing that part of the rule with fines up to $10,000 per day for each vehicle in violation. Performance requirements of the rule are based on a fleet's average NO_X emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirements, making the first compliance deadline January 1, 2014, for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501-5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less). As of January 1, 2020, heavy-duty diesel vehicles that are not in compliance with the Truck and Bus regulation will be unable to register their vehicle with Department of Motor Vehicles.

The latest amendments to the Truck and Bus regulation became effective on December 31, 2014. The amended regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses were required to meet PM filter requirements beginning January 1, 2012. As of January 1, 2023, nearly all trucks and buses are required to have 2010 model year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses and privately and publicly owned school buses with a gross vehicle weight of greater than 14,000 pounds. The regulation provides various flexibility options tailored to fleets operating low-use

[3] California Air Resources Board (ARB). 2022. Advanced Clean Cars II Regulations: All New Passenger Vehicles Sold in California to be Zero-Emissions by 2035. Website: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii. Accessed February 9, 2023.

[4] California Air Resources Board (ARB). 2013. The California Almanac of Air Quality and Emissions—2013 Edition. Website: http://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm. Accessed February 9, 2023.

vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks.[5]

California Airborne Toxic Control Measures for Asbestos

The ARB has adopted Airborne Toxic Control Measures (ATCM) for sources that emit a particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology to minimize emissions.

In July 2001, the ARB approved an ATCM for construction, grading, quarrying and surface mining operations to minimize emissions of naturally occurring asbestos. The regulation requires applying Best Management Practices (BMPs) to control fugitive dust in areas known to have naturally occurring asbestos and requires notification to the local air district before ground-disturbing activities. The measure establishes specific testing, notification, and engineering controls before grading, quarrying, or surface mining in construction zones where naturally occurring asbestos is located on projects of any size. There are additional notification and engineering controls at work sites larger than one acre in size. These projects require the submittal of a "Dust Mitigation Plan" and approval by the air district before the start of a project.

Construction sometimes requires the demolition of existing buildings where construction occurs. Asbestos is also found in a natural state, known as naturally occurring asbestos. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers into the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

The ARB has an ATCM for construction, grading, quarrying, and surface mining operations, requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. The measure applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the Air Pollution Control Officer or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally occurring asbestos on the site. The measure also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity. Review of the Department of Conservation maps indicates that no ultramafic rock has been found near the project site.[6]

[5] California Air Resources Board (ARB). 2015. On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation. Website: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed February 9, 2023.

[6] United State Geologic Survey (USGS). Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California. Website: https://pubs.usgs.gov/of/2011/1188/. Accessed February 9, 2023.

California Airborne Toxic Control Measures for Transport Refrigerated Units

The ARB also has an ATCM for in-use diesel-fueled TRUs and generator sets, which establishes performance targets for TRUs. TRUs are trailer-mounted units, powered by small diesel-fueled engines, which provide chilled air to trailers carrying perishable goods (e.g., produce, meats, and prescription drugs). The measure regulates PM emissions rates from TRUs powered by diesel internal combustion engines that range from 9 to 36 horsepower. According to the regulation, facilities with over 20 loading docks must submit a detailed report specifying the types of models and quantities of TRUs that would operate at the facility. The report is filed by the equipment operator and is submitted electronically to the ARB. By July 31, 2009, owners and operators of California-based TRUs were required to submit an application for an ARB identification number as part of the ARB Identification Numbering Requirements. By December 31, 2021, owners and operators of California-based TRUs must submit documentation demonstrating that TRUs with a model year 2013 or newer meet the Ultra-Low-Emission TRU in-use standard by the end of the seventh year after the engine model year. Additionally, transitioning diesel TRUs to zero-emissions technologies is a priority because of Executive Order N-79-20, which sets a goal of 100 percent zero-emission off-road vehicles and equipment in California by 2035.

Verified Diesel Emission Control Strategies

The EPA and the ARB tiered off-road emission standards only apply to new engines, and off-road equipment can last several years. The ARB has developed Verified Diesel Emission Control Strategies (VDECS), which are devices, systems, or strategies used to achieve the highest level of pollution control from existing off-road vehicles, to help reduce emissions from existing engines. VDECS are designed primarily for the reduction of DPM emissions and have been verified by ARB. There are three levels of VDECS, the most effective of which is the Level 3 VDECS. Tier 4 engines are not required to install VDECS because they already meet the emissions standards for lower tiered equipment with installed controls.

California Diesel Risk Reduction Plan

The ARB Diesel Risk Reduction Plan has led to the adoption of new State regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce DPM emissions in 2020 by about 90 percent overall from year 2000 levels. The projected emission benefits associated with the full implementation of this plan, including federal measures, are reductions in DPM emissions and associated cancer risks of 75 percent by 2010 and 85 percent by 2020.[7]

Tanner Air Toxics Act and Air Toxics Hot Spots Information and Assessment Act

TACs in California are primarily regulated through the Tanner Air Toxics Act (Assembly Bill [AB] 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588), also known as the Hot Spots Act. To date, the ARB has identified more than 21 TACs, and has adopted the EPA's list of Hazardous Air Pollutants (HAPs) as TACs.

[7] California Air Resources Board (ARB). 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles.

Carl Moyer Memorial Air Quality Standards Attainment Program

The Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program), a partnership between the ARB and local air districts, issues grants to replace or retrofit older engines and equipment with engines and equipment that exceed current regulatory requirements to reduce air pollution. Money collected through the Carl Moyer Program complements California's regulatory program by providing incentives to effect early or extra emission reductions, especially from emission sources in environmental justice communities and areas disproportionately affected by air pollution. The program has established guidelines and criteria for the funding of emissions reduction projects. Within the Air Basin, BAAQMD administers the Carl Moyer Program. The program has established guidelines and criteria for the funding of emissions reduction projects. The program establishes cost-effectiveness criteria for funding emission reductions projects, which under the final 2017 Carl Moyer Program Guidelines are $30,000 per weighted ton of NO_X, ROG, and PM.[8]

California Refrigerant Management Program

California's Refrigerant Management Program (RMP) regulates refrigerants used in larger facilities, primarily industrial and supermarket land uses. Refrigerants regulated under the RMP include any refrigerant that is an ozone depleting substance as defined in Title 40 of the Code of Federal Regulation, Part 82, and any compound with a global warming potential (GWP) value equal to or greater than 150 according to the GWPs specified in the Intergovernmental Panel on Climate Change's (IPCC) Fourth Assessment Report of 2007. According to the RMP, all supermarket and industrial refrigeration systems with a full recharge capacity of 50 pounds (22.7 kilograms) or greater will be required to limit the refrigerants used to no greater than 150 GWP beginning in 2022. Similarly, according to the RMP, all room air conditioning unit systems with a full recharge capacity of 50 pounds or greater will be required to limit the refrigerants used to no greater than 750 GWP beginning in 2023.[9]

Regional

BAAQMD CEQA Air Quality Guidelines

The BAAQMD is the primary agency responsible for ensuring that air quality standards (NAAQS and CAAQS) are attained and maintained in the Air Basin through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The BAAQMD prepares plans to attain ambient air quality standards in the Air Basin. The BAAQMD prepares ozone attainment plans for the national ozone standard, Clean Air Plans for the California standard, and PM plans to fulfill federal air quality planning requirements. The BAAQMD also inspects stationary sources of air pollution; responds to citizen complaints; monitors ambient air quality and meteorological conditions; and implements programs and regulations required by the CAA, the CAA Amendments of 1990, and the CCAA.

The BAAQMD developed quantitative thresholds of significance for its California Environmental Quality Act (CEQA) Guidelines in 2010, which were also included in its updated subsequent

[8] California Air Resources Board (ARB). 2017. 2017 Carl Moyer Program Guidelines. Website: https://ww2.arb.ca.gov/resources/fact-sheets/carl-moyer-program. Accessed February 9, 2023.

[9] California Air Resources Board (ARB). 2020. Proposed Amendments to ARB's HFC Regulation. December 10. Website: https://ww3.arb.ca.gov/board/books/2020/121020/20-13-4pres.pdf. Accessed February 9, 2023.

guidelines. BAAQMD's adoption of the 2010 thresholds of significance was later challenged in court. In an opinion issued on December 17, 2015, related to BAAQMD CEQA Guidelines, the California Supreme Court held that CEQA does not generally require an analysis of the impacts on project residents and users of locating development in areas subject to environmental hazards unless the project would exacerbate those existing environmental hazards. The Supreme Court also found that specific legislation within CEQA requires the analysis of exposing people to environmental hazards in specific circumstances, including the location of development near airports, schools near sources of toxic contamination, and certain exemptions for infill and workforce housing (*Id*. at pp. 391-392). On remand from the California Supreme Court, the Court of Appeal later held that public agencies remain free to voluntarily conduct this analysis not required by CEQA for their own public projects (*CBIA v. BAAQMD* [2016] 2 Cal.App.5th 1067, 1083).

In view of the California Supreme Court's opinion, BAAQMD published a new version of its CEQA Guidelines in May 2017, updated again with a 2022 version (adopted in 2023). The BAAQMD CEQA Guidelines state that local agencies may rely on thresholds designed to reflect the impact of locating development near areas of toxic air contamination where CEQA requires such an analysis or where the agency has determined that such an analysis would assist in making a decision about the proposed project. However, the thresholds are not mandatory, and agencies should apply them only after determining that they reflect an appropriate measure of a project's impacts. The BAAQMD's guidelines for implementing the thresholds are for informational purposes only, to assist local agencies. Additionally, although neither CEQA, the CEQA Guidelines, nor CEQA case law requires that impacts to environmental justice communities be assessed, BAAQMD CEQA Guidelines also contain advisory guidance on how environmental justice might be considered for a project-level impact analysis.

BAAQMD Particulate Matter Plan

To fulfill federal air quality planning requirements, BAAQMD adopted a $PM_{2.5}$ emissions inventory for year 2010 at a public hearing on November 7, 2012. The Bay Area Clean Air Plan also included several measures for reducing PM emissions from stationary sources and wood-burning. On January 9, 2013, the EPA issued a final rule determining that the Bay Area has attained the 24-hour $PM_{2.5}$ NAAQS, suspending federal SIP planning requirements for the Air Basin.[10] Despite this EPA action, the Air Basin will continue to be designated as nonattainment for the national 24-hour $PM_{2.5}$ standard until BAAQMD submits a redesignation request and a maintenance plan to the EPA and the EPA approves the proposed redesignation.

The Air Basin is designated nonattainment for the State PM_{10} and $PM_{2.5}$ standards, but it is currently unclassified for the federal PM_{10} standard and nonattainment for federal $PM_{2.5}$ standards. The EPA lowered the 24-hour $PM_{2.5}$ standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$ in 2006 and designated the Air Basin as nonattainment for the new $PM_{2.5}$ standard effective December 14, 2009.

[10] United States Environmental Protection Agency (EPA). 2013. Determination of Attainment for the San Francisco Bay Area Nonattainment Area for the 2006 Fine Particle Standard; California; Determination Regarding Applicability of Clean Air Act Requirements. January 9. Website: https://www.govinfo.gov/content/pkg/FR-2013-01-09/pdf/2013-00170.pdf. Accessed February 9, 2023.

On December 8, 2011, the ARB submitted a "clean data finding" request to the EPA on behalf of the Bay Area. If the clean data finding request is approved, then EPA guidelines provide that the region can fulfill federal $PM_{2.5}$ SIP requirements by preparing either a redesignation request and a $PM_{2.5}$ maintenance plan, or a "clean data" SIP submittal. Because peak $PM_{2.5}$ levels can vary from year to year based on natural, short-term changes in weather conditions, BAAQMD believes that it would be premature to submit a redesignation request and $PM_{2.5}$ maintenance plan at this time. Therefore, BAAQMD will prepare a "clean data" SIP to address the required elements, including:

- An emission inventory for primary $PM_{2.5}$, as well as precursors to secondary PM formation
- Amendments to BAAQMD's New Source Review regulation to address $PM_{2.5}$

BAAQMD 2017 Clean Air Plan

On May 2017, BAAQMD adopted the final 2017 Bay Area Clean Air Plan. The BAAQMD prepared the 2017 Clean Air Plan in cooperation with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG). The goals of the 2017 Clean Air Plan are to reduce regional air pollutants and climate pollutants to improve the health of Bay Area residents for the next decades. The 2017 Clean Air Plan aims to lead the region into a post-carbon economy, continue progress toward attaining all State and federal air quality standards, and eliminate health risk disparities from air pollution exposure in Bay Area communities. The Plan includes 85 distinct control measures to help the region reduce air pollutants and has a long-term strategic vision that forecasts what a clean air Bay Area will look like in year 2050. The 2017 Clean Air Plan envisions a future whereby the year 2050:

- Buildings will be energy efficient—heated, cooled and powered by renewable energy.
- Transportation will be a combination of electric vehicles, both shared and privately owned, and autonomous public transit fleets, with a large share of trips by bicycling, walking, and transit.
- The Bay Area will be powered by clean, renewable electricity and will be a leading incubator and producer of clean energy technologies leading the world in the carbon-efficiency of our products.
- Bay Area residents will have developed a low carbon lifestyle by driving electric vehicles, living in zero-net-energy homes, eating low carbon foods, and purchasing goods and services with low carbon content.
- Waste will be greatly reduced, waste products will be re-used or recycled, and all organic waste will be composted and put to productive use.

The focus of control measures includes aggressively targeting the largest source of GHG, ozone pollutants and PM emissions: transportation. This includes more incentives for electric vehicle infrastructure, off-road electrification projects such as Caltrain and shore power at ports, and reducing emissions from trucks, school buses, marine vessels, locomotives, and off-road equipment. Additionally, BAAQMD will continue to work with regional and local governments to reduce vehicle miles traveled through the further funding of rideshare, bike and shuttle programs.

BAAQMD Regulations

Regulation 2, Rule 1 (Permits–General Requirements)

The BAAQMD regulates new sources of air pollution and the modification and operation of existing sources through the issuance of authorities to construct and permits to operate. Regulation 2, Rule 1 provides an orderly procedure with which the project would be required to comply to receive authorities to construct or permits to operate from BAAQMD for new sources of air pollutants, as applicable.

Regulation 2, Rule 5 (New Source Review Permitting)

The BAAQMD regulates backup emergency generators, fire pumps, and other sources of TACs through its New Source Review (Regulation 2, Rule 5) permitting process.[11] Although emergency generators are intended for use only during periods of power outages, monthly testing of each generator is required; however, BAAQMD limits testing to no more than 50 hours per year. Each emergency generator installed is assumed to meet a minimum of Tier 2 emission standards (before control measures). As part of the permitting process, BAAQMD limits the excess cancer risk from any facility to no more than 10 per 1-million-population for any permits that are applied for within a 2-year period and would require any source that would result in an excess cancer risk greater than 1 per 1 million to install Best Available Control Technology (BACT) for Toxics.

Regulation 6, Rule 1 (Particulate Matter–General Requirements)

The BAAQMD regulates particulate matter emissions through Regulation 6 by means of establishing limitations on emission rates, emissions concentrations, and emission visibility and opacity. Regulation 6, Rule 1 provides existing standards for particulate matter emissions that could result during project construction or operation that the project would be required to comply with, as applicable, such as the prohibition of emissions from any source for a period or aggregate periods of more than three minutes in any hour which are equal to or greater than 20 percent opacity.

Regulation 6, Rule 6, (Particulate Matter–Prohibition of Trackout)

One rule by which BAAQMD regulates particulate matter includes Regulation 6, Rule 6, which prohibits particulate matter trackout during project construction and operation. Regulation 6, Rule 6 requires the prevention or timely cleanup of trackout of solid materials onto paved public roads outside the boundaries of large bulk material sites, large construction sites, and large disturbed surface sides such as landfills.

Regulation 8, Rule 3 (Architectural Coatings)

This rule governs the manufacture, distribution, and sale of architectural coatings and limits the reactive organic gases (ROG) content in paints and paint solvents. Although this rule does not directly apply to the proposed project, it does dictate the ROG content of paint available for use during the construction.

[11] Bay Area Air Quality Management District (BAAQMD). 2016. NSR [New Source Review] Permitting Guidance. Website: http://www.baaqmd.gov/permits/permitting-manuals/nsr-permitting-guidance. Accessed February 9, 2023.

Regulation 8, Rule 15 (Emulsified and Liquid Asphalts)

Although this rule does not directly apply to the proposed project, it does dictate the reactive organic gases content of asphalt available for use during the construction through regulating the sale and use of asphalt and limits the ROG content in asphalt.

Regulation 9, Rule 8 (Inorganic Gaseous Pollutants–Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines)

Under Regulation 9, Rule 8, BAAQMD regulates the emissions of nitrogen oxides and carbon monoxide from stationary internal combustion engines with an output rated by the manufacturer at more than 50 brake horsepower. As such, any proposed stationary source equipment (e.g., backup generators, fire pumps) which would be greater than 50 horsepower would require a BAAQMD permit under Regulation 9, Rule 8 to operate.

Regulation 11, Rule 2 (Hazardous Pollutants–Asbestos Demolition, Renovation, and Manufacturing)

Under Regulation 11, Rule 2, BAAQMD regulates emissions of asbestos to the atmosphere during demolition, renovation, milling, and manufacturing and establishes appropriate waste disposal procedures. Any of these activities which pose the potential to generate emissions of airborne asbestos are required to comply with the appropriate provisions of this regulation.

Regulation 1, Rule 301 (Odorous Emissions)

BAAQMD is responsible for investigating and controlling odor complaints in the Bay Area. The agency enforces odor control by helping the public to document a public nuisance. Upon receipt of a complaint, BAAQMD sends an investigator to interview the complainant and to locate the odor source if possible. BAAQMD typically brings a public nuisance court action when there are a substantial number of confirmed odor events within a 24-hour period. An odor source with five or more confirmed complaints per year, averaged over 3 years, is considered to have a substantial effect on receptors.

Several BAAQMD regulations and rules apply to odorous emissions. Regulation 1, Rule 301 is the nuisance provision that states that sources cannot emit air contaminants that cause nuisance to several people. Regulation 7 specifies limits for the discharge of odorous substances where BAAQMD receives complaints from 10 or more complainants within a 90-day period. Among other things, Regulation 7 precludes discharge of an odorous substance that causes the ambient air at or beyond the property line to be odorous after dilution with four parts of odor-free air and specifies maximum limits on the emission of certain odorous compounds.

Lastly, BAAQMD enforces the Portable Equipment Registration Program (PERP) ATCM on behalf of the ARB. Under the PERP, owners or operators of portable engines and other types of equipment which meet the qualifications of the ATCM can register their equipment to operate throughout California. However, owners and operators of portable engines which meet the qualifications of this ATCM who do not register their equipment under the PERP must obtain individual permits from local air districts. Permits issued under the PERP must be honored by all air districts throughout California.

Plan Bay Area

As the latest version of the Regional Transportation Plan (RTP) for the Bay Area region, Plan Bay Area 2050 was adopted by ABAG and the MTC on October 21, 2021. The Plan Bay Area includes integrated land use and transportation strategies for the region and was developed through OneBayArea, a joint initiative between ABAG, BAAQMD, MTC, and the San Francisco Bay Conservation and Development Commission (BCDC). The plan's transportation policies focus on maintaining the extensive existing transportation network and utilizing these systems more efficiently to handle density in Bay Area transportation cores.[12] Assumptions for land use development come from local and regional planning documents. Emission forecasts in the Bay Area Clean Air Plan rely on projections of vehicle miles traveled, population, employment, and land use projections made by local jurisdictions during development of Plan Bay Area.

Plan Bay Area 2050 further functions as the Sustainable Communities Strategy (SCS) mandated by Senate Bill (SB) 375. As a regional land use plan, Plan Bay Area 2050 aims to reduce per capita GHG emissions by promoting more compact, mixed-use residential and commercial neighborhoods located near transit. Plan Bay Area 2050 is a limited and focused update that builds upon a growth pattern and strategies developed in the original Plan Bay Area (adopted by MTC in 2013) but with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last 4 years.

Local

County of Solano

Climate Action Plan

Solano County adopted the Climate Action Plan (CAP) in June 2011 to address climate change and reduce the community's GHG at the local level. The CAP sets forth the following goals, objectives, and policies relevant to air quality and GHG emissions:

Energy Efficiency Objective

Minimize energy consumption, increase energy efficiencies, and transition to clean renewable energy sources.

E-4 Adopt green building and energy efficiency ordinances to require green building practices, programs and design elements.

E-6 Partner with Solano Economic Development Corporation, Pacific Gas & Electric, and agricultural processing and industrial energy businesses to increase building and process energy efficiency.

Transportation and Land Use Objective

Support a transportation system and land use pattern that promotes carpooling, walking, biking, and using public transit.

[12] Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC). 2021. Website: https://mtc.ca.gov/planning/long-range-planning/plan-bay-area-2050. Plan Bay Area 2050. Accessed February 6, 2023.

Waste Reduction and Recycling Objective

Develop a zero-waste to achieve 75 percent diversion.

If the project area is annexed into the City of Suisun, the County's CAP would not apply to the proposed project.

City of Suisun City

General Plan

The Suisun City General Plan sets forth the following goals, objectives, and policies relevant to air quality and GHG emissions:

Goal T-3 Manage travel demand in order to reduce up-front and ongoing cost of transportation infrastructure, enhance local mobility, improve air quality, and improve the local quality of life.

Objective T-3 Vehicle Miles Traveled (VMT) by Suisun City residents and to Suisun City destinations should increase at a lower rate than that of population and employment growth.

Policy T-3.1 The City will collaborate with other local, regional, and State agencies, as well as employers to encourage carpooling, carpool parking, flexible work schedules, ride sharing, and other strategies to reduce commute period travel demand.

Policy T-3.2 The City will encourage new developments and public facility investments designed to minimize vehicle trips and vehicle miles traveled.

Policy T-3.6 New developments that would accommodate 100 full or part time employees or more are required to incorporate feasible travel demand management strategies, such as contributions to transit/bike/pedestrian improvements; flex time and telecommuting; a carpool program; parking management, cash out, and pricing; or other measures, as appropriate, to reduce travel demand.

Policy T-3.7 The City will support regional goals to reduce per capita GHG emissions reductions from automobiles and light-duty trucks in a way that also promotes 2035 General Plan objectives.

Goal PHS-3 Minimize Exposure to Air Pollutants

Objective PHS-3 Reduce emissions that produce harmful air pollutants.

Policy PHS-3.1 The City will ensure that new industrial, manufacturing, and processing facilities that may produce toxic or hazardous air pollutants are located at an adequate distance from residential areas and other sensitive receptors, considering weather patterns, the quantity and toxicity of pollutants emitted, and other relevant parameters.

Policy PHS-3.2 The City will communicate with the Bay Area Air Quality Management District to identify sources of toxic air contaminants and determine the need for health risk assessments prior to approval of new developments.

Policy PHS-3.3 The City will require projects that could result in significant air pollutant emissions impacts to reduce operational emissions from vehicles, heating and cooling, lighting, equipment use, and other proposed new sources.

Policy PHS-3.4 The City will require implementation of applicable emission control measures recommended by the Bay Area Air Quality Management District for construction, grading, excavation, and demolition.

Goal PHS-4 Reduce Local Greenhouse Gas Emissions and Reduce the Local Effects of Global Climate Change

Objective PHS-4 Reduce the City's contribution to global climate change effects.

Policy PHS-4.2 The City will guide land use change, direct investments, and apply its fees and programs to encourage more GHG-efficient development patterns, as feasible.

Policy PHS-4.3 The City will actively pursue funding for transportation systems that promote public transit, bicycling, and pedestrian travel and other needed infrastructure, building and public realm energy efficiency upgrades, renewable energy production, land use transportation modeling, and other projects to reduce local GHG emissions.

3.2.4 - Thresholds of Significance

Appendix G to the CEQA Guidelines is a sample Initial Study Checklist that includes questions for determining whether impacts to air quality are significant. These questions reflect the input of planning and environmental professionals at the Governor's Office of Planning and Research (OPR) and the California Natural Resources Agency (CNRA), based on input from stakeholder groups and experts in various other governmental agencies, nonprofits, and leading environmental consulting firms. On the subject of air quality, Appendix G states that, "[w]here available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations." As a result, many lead agencies derive their significance criteria from the questions posed in Appendix G and input from relevant air districts. The City has chosen to do so for this project.

Additional guidance on the significance of air quality impacts is found in CEQA Guidelines Section 15065, subdivision (a)(4), which provides that a lead agency shall find that a project may have a significant effect on the environment if "the environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly." According to the California Supreme Court, this "mandatory finding of significance" applies to potential effects on public health from environmental impacts such as those associated with air pollutant emissions from projects. (*California Business Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, 386-392.)

In light of the foregoing, the proposed project would have a significant effect related to air quality if the project would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard;

c) Expose sensitive receptors to substantial pollutant concentrations;

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Significance Criteria

The preceding thresholds of significance are stated in general terms. It is therefore desirable to formulate additional, more precise thresholds based on guidance from BAAQMD, as is encouraged in Appendix G to the CEQA Guidelines. As explained earlier, BAAQMD's 2022 CEQA Air Quality Guidelines were prepared to assist in evaluating air quality impacts of projects and plans proposed within the Bay Area.[13] The guidelines provide recommended procedures for evaluating potential air quality impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and GHGs. The analysis below was prepared using these BAAQMD CEQA Guidelines.

Regional Significance Criteria

Table 3.2-7 shows BAAQMD's criteria for regional significance for project construction and operation.

Table 3.2-7: BAAQMD Regional (Mass Emissions) Air Pollutant Significance Thresholds

Pollutant	Construction	Operation	
	Average Daily Emissions (pounds/day)	Average Daily Emissions (pounds/day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NO_X	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
PM_{10} and $PM_{2.5}$ Fugitive Dust	Best Management Practices	None	None

Notes:
ROG = reactive organic gases NO_X = oxides of nitrogen
PM_{10} = particulate matter, including dust, 10 micrometers or less in diameter
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
Source: Bay Area Air Quality Management District (BAAQMD) 2022. May. California Environmental Quality Act Air Quality Guidelines.

[13] Bay Area Air Quality Management District (BAAQMD). 2022. California Environmental Quality Act Air Quality Guidelines.

In developing the above significance thresholds, BAAQMD considers the emission levels for which a project's individual emissions would be cumulatively considerable. If a project were to exceed the emission thresholds in Table 3.2-7, that project's emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.[14] Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants. However, for projects that exceed the emissions thresholds shown in Table 3.2-7, it is speculative to determine how exceeding regional thresholds would affect the number of days the region is in nonattainment—as mass emissions are not linearly correlated with concentrations of emissions—or how many additional individuals in the Air Basin would be affected by the health effects cited above.

In *Sierra Club v. County of Fresno (Friant Ranch, LP)* (2018) 6 Cal.5th 502, 510, 517-522*,* the California Supreme Court held generally that an EIR should "make a reasonable effort to substantively connect a project's air quality impacts to likely health consequences." A possible example of such a connection would be to calculate a project's "impact on the days of nonattainment per year" (*Id*. at pp. 521). But the court recognized that there might be scientific limitations on an agency's ability to make the connection between air pollutant emissions and public health consequences in a credible fashion, given limitations in technical methodologies (*Id*. at pp. 520-521). Thus, the court acknowledged that another option for an agency preparing an EIR might be "to explain why it was not feasible to provide an analysis that connected the air quality effects to human health consequences" (*Id*. at p. 522).

Here, BAAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of emissions in the Air Basin. At present, BAAQMD has not provided any methodology to assist local governments in reasonably and accurately assessing the specific connection between mass emissions of ozone precursors (e.g., ROG and NO_X) and other pollutants of concern on a *regional* basis and any specific effects on public health or regional air quality concentrations that might result from such mass emissions.

Ozone concentrations, for instance, depend upon various complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground level ozone concentrations related to the NAAQS and CAAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds. To achieve the health-based standards established by the EPA, the air districts prepare air quality management plans that detail regional programs to attain the Ambient Air Quality Standards (AAQS). However, if a project within BAAQMD exceeds the regional significance thresholds, the proposed project could contribute to an increase in health effects in the basin until the attainment standards are met in the Air Basin.

[14] Bay Area Air Quality Management District (BAAQMD). 2022. California Environmental Quality Act Air Quality Guidelines.

Notably, during the litigation process that led to the California Supreme Court decision in *Sierra Club v. County of Fresno*, the San Joaquin Valley Air Pollution Control District (SJVAPCD) submitted an amicus curiae brief that provided scientific context and expert opinion regarding the feasibility of performing regional dispersion modeling for ozone. In the brief, SJVAPCD states that "CEQA does not require an EIR to correlate a project's air quality emissions to specific health impacts, because such an analysis is not reasonably feasible." As SJVAPCD explains (SJVAPCD 2015b [footnotes omitted]):

> Attainment of a particular NAAQS occurs when the concentration of the relevant pollutant remains below a set threshold on a consistent basis throughout a particular region. For example, the San Joaquin Valley attained the 1-hour ozone NAAQS when ozone concentrations remained at or below 0.124 parts per million Valley-wide on 3 or fewer days over a 3-year period. Because the NAAQS are focused on achieving a particular concentration of pollution region-wide, the Air District's tools and plans for attaining the NAAQS are regional in nature.
>
> For instance, the computer models used to simulate and predict an attainment date for the ozone or particulate matter NAAQS in the San Joaquin Valley are based on regional inputs, such as regional inventories of precursor pollutants (NO_X, SO_X and VOCs) and the atmospheric chemistry and meteorology of the Valley. At a very basic level, the models simulate future ozone or PM levels based on predicted changes in precursor emissions Valley wide. Because the NAAQS are set levels necessary to protect human health, the closer a region is to attaining a particular NAAQS, the lower the human health impact is from that pollutant.
>
> The goal of these modeling exercises is not to determine whether the emissions generated by a particular factory or development project will affect the date that the Valley attains the NAAQS. Rather, the Air District's modeling and planning strategy is regional in nature and based on the extent to which all of the emission-generating sources in the Valley (current and future) must be controlled in order to reach attainment.
>
> Accordingly, the Air District has based its thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the [SJVAB] can accommodate without affecting the attainment date for the NAAQS. The Air District has tied its CEQA significance thresholds to the level at which stationary pollution sources must "offset" their emissions . . . Thus the CEQA air quality analysis for criteria air pollutants is not really a localized, project-level impact analysis but one of regional cumulative impacts.

The brief explains that these CEQA thresholds of significance are not intended to be applied such that any localized human health impact associated with a project's regional pollutant emissions could be identified. Rather, CEQA thresholds of significance are used to determine whether a project's emissions would obstruct a region's capability of attaining the NAAQS and CAAQS according to the emissions inventory prepared in a SIP, which is then submitted and reviewed by the ARB and EPA. This sentiment is corroborated in an additional brief submitted by the South Coast Air Quality Management District (SCAQMD 2015). The City has therefore concluded that it is not scientifically feasible to predict in a meaningful manner how mass emissions of pollutants of regional concern

from the proposed project could lead to specific public health consequences, changes in pollutant concentrations, or changes in the number of days for which the Air Basin will be in nonattainment for regional pollutants.

On the other hand, it is technically feasible to predict with reasonable accuracy the potential *localized* health consequences of localized pollutants such as TACs and $PM_{2.5}$. As discussed below, the consultants who prepared this section prepared a Health Risk Assessment (HRA) that addresses the potential for additional incidences of cancer resulting from both the construction-related emissions and the operational emissions of the proposed project.

Consistency with Air Quality Plan

The applicable air quality plan is BAAQMD's 2017 Bay Area Clean Air Plan, which identifies measures to:

- Reduce emissions and reduce ambient concentrations of air pollutants.
- Safeguard public health by reducing exposure to the air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most heavily affected by air pollution.
- Reduce GHG emissions to protect the climate.

A project would be determined to conflict with or obstruct implementation of an applicable air quality plan if it would result in substantial new regional emissions not foreseen in the air quality planning process.

Local CO Hotspots

Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots. The significance criteria for CO hotspots are based on the CAAQS for CO, which is 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average). However, with the turnover of older vehicles, the introduction of cleaner fuels, and implementation of emission control technology, the Air Basin is considered in attainment of the CAAQS and NAAQS, and CO concentrations in the Air Basin have steadily declined. Because CO concentrations have improved, BAAQMD does not require a CO hotspot analysis if the following criteria are met:

- The project is consistent with an applicable congestion management program established by the County Congestion Management Agency for designated roads or highways, the Regional Transportation Plan, and local congestion management agency plans.
- The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g.,

tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).[15]

Community Risk and Hazards

The BAAQMD's significance thresholds for local community risk and hazard impacts apply to both the siting of a new source and to the siting of a new receptor. Local community risk and hazard impacts are associated with TACs and $PM_{2.5}$ because emissions of these pollutants can have significant health impacts at the local level.

- The proposed project would generate TACs and $PM_{2.5}$ during construction activities that could elevate concentrations of air pollutants at the nearby school and residential sensitive receptors. The thresholds for construction-related local community risk and hazard impacts are the same as for project operations. The BAAQMD has adopted screening tables for air toxics evaluation during construction.[16] Construction-related TAC and $PM_{2.5}$ impacts should be addressed on a case-by-case basis, considering each project's specific construction-related characteristics and proximity to off-site receptors, as applicable.[17]
- The proposed project involves the construction of new industrial warehouse facilities and would be a source of operational TACs and $PM_{2.5}$ from trucking activity. The BAAQMD thresholds related to siting new sources of TACs and $PM_{2.5}$ near existing or planned sensitive receptors are applicable.

Since Suisun City does not have a qualified risk reduction plan, a site-specific analysis of TACs and $PM_{2.5}$ impacts on sensitive receptors was conducted. The thresholds identified below are applied to the proposed project's construction and operational phases.

Community Risk and Hazards: Project

Project-level emissions of TACs or $PM_{2.5}$ from individual sources that exceed any of the thresholds listed below are considered a potentially significant community health risk:

- An excess cancer risk level of more than 10 in one million, or a non-cancer (i.e., chronic or acute) HI greater than 1.0 would be a significant cumulatively considerable contribution.
- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$ from a single source would be a significant cumulatively considerable contribution.

Community Risk and Hazards: Cumulative

Cumulative sources represent the combined total risk values of each of the individual sources within the 1,000-foot evaluation zone. A project would have a cumulatively considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from

[15] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May.
[16] Bay Area Air Quality Management District (BAAQMD). 2010. Air Toxics NSR Program, Health Risk Screening Analysis Guidelines.
[17] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May.

the fence line of a source or location of a receptor, plus the contribution from the proposed project, meets any of these conditions:

- Has excess cancer risk levels of more than 100 in one million or a chronic non-cancer HI (from all local sources) greater than 10.0.
- Exceeds 0.8 µg/m^3 annual average $PM_{2.5}$.

In February 2015, the Office of Environmental Health Hazard Assessment (OEHHA) adopted new HRA guidance that includes several efforts to be more protective of children's health. These updated procedures include age sensitivity factors to account for the higher sensitivity of infants and young children to cancer-causing chemicals, and age-specific breathing rates.[18]

Odors

The BAAQMD thresholds for odors are qualitative and based on BAAQMD Regulation 7, Odorous Substances. This rule places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health, or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury, or damage to business or property. Under BAAQMD Rule 1-301, BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants. Table 3.2-8 shows the screening distances for various land uses that are considered to have objectionable odors.[19]

Table 3.2-8: BAAQMD Odor Screening-level Distances Thresholds

Land Use/Type of Operation	Project Screening Distance
Wastewater Treatment Plant	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	2 miles
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile

[18] Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments. February.
[19] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May.

Land Use/Type of Operation	Project Screening Distance
Painting/Coating Operations	1 mile
Rendering Plant	2 miles
Coffee Roaster	1 mile
Food Processing Facility	1 mile
Confined Animal Facility/Feed Lot/Dairy	1 mile
Green Waste and Recycling Operations	1 mile
Metal Smelting Plants	2 miles
Source: Bay Area Air Quality Management District (BAAQMD) 2023.	

Approach to the Analysis

Emission factors represent the emission rate of a pollutant over a given time or activity; for example, grams of NO_X per Vehicle Miles Traveled (VMT) or grams of NO_X per horsepower-hour of equipment operation. The ARB has published emission factors for on-road mobile vehicles/trucks in the Emission Factors (EMFAC) mobile source emissions model and emission factors for off-road equipment and vehicles in the OFFROAD emissions model. Activity levels measure how active a piece of equipment is and can be represented as the amount of material processed, elapsed time that a piece of equipment is in operation, horsepower of a piece of equipment used, or VMT per day. An air emissions model (or calculator) combines the emission factors and the various levels of activity and outputs the emissions for the various pieces of equipment.

The California Emissions Estimator Model (CalEEMod) Version 2022.1 was developed in collaboration with the South Coast Air Quality Management District and other air districts throughout the State. CalEEMod is designed as a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant emissions associated with construction and operation from various land uses.

The modeling follows BAAQMD guidance where applicable from its CEQA Air Quality Guidelines. The following criteria air pollutants and precursors are assessed in this analysis:

- ROG
- Nitrogen oxides (NO_X)
- Carbon monoxide (CO)
- Particulate matter equal to or less than 10 microns in diameter (PM_{10})
- Particulate matter equal to or less than 2.5 microns in diameter ($PM_{2.5}$)

Note that the proposed project would emit ozone precursors ROG and NO_X. However, the proposed project would not directly emit ozone since it is formed in the atmosphere via photochemical reactions between and among ozone precursor pollutants.

At the time of this analysis, construction of the proposed project was anticipated to begin in Spring 2025, and to be completed in July 2026. This schedule results in a conservative estimate of emissions from the proposed project, because if the construction schedule moves to later years, then construction emissions would decrease because of improvements in technology and more stringent regulatory requirements. In general, this analysis also included estimated project trip generation and trip length provided in Section 3.12–Transportation. As the proposed project is a speculative warehouse development which could accommodate cold storage and accompanying TRUs, this analysis considers two project scenarios: a cold warehouse project scenario and a dry warehouse project scenario. Where appropriate, both project scenarios are presented herein to determine project impacts.

Construction-related Criteria Pollutants

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from both on-site and off-site activities. On-site emissions consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Additionally, paving operations and the application of architectural coatings would release ROG emissions. Off-site emissions result from motor vehicle exhaust from delivery vehicles, worker traffic and road dust (PM_{10} and $PM_{2.5}$).

Equipment Tiers and Emission Factors

Equipment tiers refer to a generation of emission standards established by the EPA and ARB that apply to diesel engines in off-road equipment. The “tier” of an engine depends on the model year and horsepower rating; generally, the newer a piece of equipment is, the greater the tier it is likely to have. Excluding engines greater than 750 horsepower, Tier 1 engines were manufactured generally between 1996 and 2003. Tier 2 engines were manufactured between 2001 and 2007. Tier 3 engines were manufactured between 2006 and 2011. Tier 4 engines are the newest and some incorporate hybrid electric technology; they have been manufactured since 2007.

Construction emissions are generally calculated as the product of an activity factor and an emission factor. The activity factor for construction equipment is a measure of how active a piece of equipment is and can be represented as the amount of material processed, elapsed time that a piece of equipment is in operation, horsepower of a piece of equipment used, or the amount of fuel consumed in a given amount of time. The emission factor relates the process activity to the amount of pollutant emitted. Examples of emission factors include grams of emissions per VMT and grams of emissions per horsepower-hour. The operation of a piece of equipment is tempered by its load factor, which is the average power of a given piece of equipment while in operation compared with its maximum rated horsepower. A load factor of 1.0 indicates that a piece of equipment continually operates at its maximum operating capacity. This analysis uses the CalEEMod default load factors for off-road equipment.

Operation-related Criteria Pollutants

The operational-phase emissions are based on the development of the proposed industrial park. The modeling accounts for the average daily vehicle and truck trips and VMT and area sources. For

purposes of this analysis, hours of operation for the proposed project are 24 hours per day, 7 days per week.

Transportation

On-road transportation sources are based on passenger vehicle and truck trip generation rates and VMT contained in a January 17, 2024, report prepared by Fehr & Peers entitled, *Big Data Passenger Vehicle and Light Duty Truck Trip Lengths and Project Generated VMT Comparison Assessment for the Suisun Logistics Center Project in Suisun City, California*. According to the VMT information provided therein, the proposed project would result in an average employee vehicle one-way trip length of 13.2 miles. As also provided therein, the proposed project would also generate truck traffic for deliveries and shipments. Truck travel distances utilized in this analysis were assumed to be 39.5 miles per one-way trip.

CalEEMod's methodologies (Version 2022.1) were used to quantify passenger vehicle emissions using vehicle emission rates based on vehicle emissions data obtained from the ARB's OFFROAD2017 and EMFAC2021 web database and adjusted based on methodology provided in Appendix B of the CalEEMod User's Guide.[20] The passenger vehicle trips were assumed to be distributed among the light-duty auto (LDA), light-duty truck 1 (LDT1), light-duty truck 2 (LDT2), and medium-duty vehicle (MDV) EMFAC2007 vehicle categories proportional to that respective vehicle category's share between those four passenger vehicle categories within the CalEEMod for Solano County.

Truck and TRU emissions were calculated utilizing the ARB's EMFAC2021and OFFROAD2021 web databases, respectively The same databases were also used to calculate emissions from on-site equipment (forklifts and yard trucks).

Other Operational Emissions

Area Sources

Area sources are based on the CalEEMod defaults for landscaping equipment activities, use of consumer products and cleaning supplies, and architectural coating.

Energy

Criteria Air Pollutants emissions from this sector are from the combustion of natural gas for space and water heating at the proposed buildings. However, the proposed project would not include any natural gas consumption.

Stationary Sources

Stationary sources are based on the anticipated stationary source equipment included in the proposed project. Given the type and size of the proposed project, the project applicant anticipates the use of a backup diesel generator and diesel-fueled fire pump for each of the six proposed buildings; however, the exact specifications for this equipment are unknown at the time of this analysis. To account for potential operational emissions generated from the emergency and non-emergency use of this equipment, the proposed project was assumed to include six backup diesel

[20] California Air Pollution Control Officers Association (CAPCOA). 2017. California Emissions Estimator Model (CalEEMod). Version 2022.1 Prepared by: BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts.

generators and six diesel-fueled fire pumps, each assumed to be rated at 50 horsepower and operate for an estimated 150 hours per year, consistent with BAAQMD's CEQA Air Quality Guidelines.

Construction- and Operation-related Toxic Air Contaminants

TACs are air pollutants in minuscule amounts in the air that could increase the chances of experiencing health problems if a person is exposed to them. Exposures to TAC emissions can have both chronic long-term (over a year or longer) and acute short-term (over a period of hours) health impacts. Construction-period TAC emissions could contribute to increased health risks to nearby residents or sensitive receptors.

This analysis assesses the potential health impacts to surrounding sensitive receptors resulting from TAC emissions during project construction. The TACs of greatest concern are those that cause serious health problems or affect many people. Health problems can include cancer, respiratory irritation, nervous system problems, and birth defects. Some health problems occur soon after a person inhales TACs. These immediate effects may be minor, such as watery eyes; or they may be serious, such as life-threatening lung damage. Other health problems may not appear until many months or years after a person's first exposure to the TAC. Cancer is one example of a delayed health problem.

Fine particle pollution can be emitted directly or formed secondarily in the atmosphere. $PM_{2.5}$ health impacts are important because their size can be deposited deep in the lungs, causing respiratory effects. For purposes of this analysis, exhaust emissions of DPM are conservatively represented as exhaust emissions of PM_{10}. Studies indicate that DPM poses the greatest health risk among airborne TACs. A 10-year ARB research program demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic long-term health risk. DPM differs from other TACs in that it is not a single substance but a complex mixture of hundreds of substances. Although diesel-fueled internal combustion engines emit DPM, the composition of the emissions varies, depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. The CalEEMod emissions model and methodologies have been used to estimate DPM emissions during construction and operation of the proposed project.

Odors

The impact analysis qualitatively evaluates the types of land uses proposed to evaluate whether major sources of anticipated odors would be present and, if so, whether those sources would likely generate objectionable odors. According to BAAQMD's CEQA Air Quality Guidelines, a project that involves the siting of a new odor source should consider the screening-level distances and the complaint history of the odor sources. Projects that would site a new odor source farther than the screening-level distances from the nearest receptor provided in Table 3.2-8 would not likely result in a significant odor impact.

3.2.5 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the proposed project and provides mitigation measures where appropriate.

Consistency with Air Quality Management Plan

Impact AIR-1: The proposed project would conflict with or obstruct implementation of the applicable air quality plan.

Impact Analysis

The BAAQMD is responsible for reducing emissions from area, stationary, and mobile sources in the Air Basin to achieve National and California AAQS. The BAAQMD 2017 Clean Air Plan is a regional and multiagency effort to reduce air pollution in the Air Basin. A consistency determination with the Air Quality Management Plan (AQMP) plays an important role in local agency project review by linking local planning and individual projects to the 2017 Clean Air Plan. It fulfills the CEQA goal of informing decision-makers of the proposed project's environmental effects under consideration early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to the clean air goals in the 2017 Clean Air Plan.

The BAAQMD compiles the regional emissions inventory for the Air Basin. In part, the regional population, housing, and employment projections developed by the ABAG are based on cities' general plan land use designations. These projections form the foundation for the emissions inventory of the 2017 Clean Air Plan. These demographic trends are incorporated into Plan Bay Area, compiled by ABAG and the MTC, to determine priority transportation projects and VMT in the Bay Area. The 2017 Clean Air Plan strategy is based on projections from local general plans. Projects consistent with the local general plan are considered consistent with the regional air quality plan. Large projects that exceed regional employment, population, and housing planning projections have the potential to be inconsistent with the regional inventory compiled as part of the 2017 Clean Air Plan.

The proposed project would build an approximately 2.1-million-square-foot logistics center on the approximately 120-acre project site. The proposed project would support six warehouse buildings totaling 2,058,667 square feet. The Solano County General Plan designation for the project site is "Extensive Agriculture" and the zoning designation is "Exclusive Agriculture 160 Acres" by Solano County.[21,22] As such, the proposed project would constitute greater employment growth and subsequent population growth as well as greater transportation activity (e.g., passenger vehicles and trucks) than what was envisioned by the Solano County General Plan. At the same time, however, the City of Suisun General Plan as of 2017 clearly contemplated future development on the site. The City's General Plan identifies the project site as a "Special Planning Area" governed by General Plan Policy LU-4.9 and General Plan Program LU-4.5 (see Section 3.9.3 [Regulatory Setting portion of Land Use Section]). Under this City policy and program, the planning process for the proposed project must, among other things, "[p]repare a basic land use and circulation plan framework that implements the 2035 General Plan" and "[c]onduct detailed site analysis, master planning, and infrastructure and service finance plans." In short, the proposed project would be considered

[21] City of Suisun. N.d. General Plan Chapter 12 Land Use Background Report. Website: https://www.suisun.com/wp-content/files/Background_Reports_Fin_-_Vol_2_-_Ch_12_-_Land_Use.pdf. Accessed February 9, 2023.
[22] Solano County. N.d. 13-N Zoning Map. Website: https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=17718. Accessed February 9, 2023.

inconsistent with the underlying County general plan land use designation but would be generally consistent with the development expectations of the City General Plan. The project seeks annexation into the City, making the City General Plan the operative document.

Table 3.2-9 identifies the applicable control measures[23] in the 2017 Clean Air Plan required by BAAQMD to reduce emissions for a wide range of emission sources and the proposed project's consistency with these control measures. As shown in Table 3.2-9, the proposed project would not conflict with the applicable control measures of the 2017 Clean Air Plan. For detail on measures that are not applicable, refer to Appendix B1 (AQ/HRA Report), Table 8-1.

Table 3.2-9: Consistency with 2017 Clean Air Plan Control Measures

Type	Applicable Measure	Consistency Analysis
Stationary Source Control Measure	SS 21–New Source Review for Toxics SS 32–Emergency Backup Generators	**Consistent**. Stationary sources are regulated directly by BAAQMD, which routinely adopts/revises rules or regulations to implement the Stationary Source (SS) control measures to reduce stationary source emissions. Therefore, any new stationary sources associated with the proposed project would be required to comply with BAAQMD's regulations. Based on the proposed warehousing use for the project site, it is not anticipated that the proposed project would result in any new major stationary source emissions; therefore, the majority of SS control measures are inapplicable here. However, in the event that stationary equipment is installed on-site, it is anticipated that the equipment would be small-quantity emitters and would require review by BAAQMD for permitted sources of air pollutants which would ensure consistency with the 2017 Clean Air Plan.
	SS 25–Coatings, Solvents, Lubricants, Sealants and Adhesives	**Consistent.** The project would limit architectural coating to building exteriors, and would apply super compliant low-VOC paint during construction.
	SS 36–PM from Trackout	**Consistent.** The project would comply with BAAQMD's Best Management Practices (BMPs) for fugitive dust emissions to prevent mud/dirt and other solid trackout from construction.
Transportation Control Measures	TR 2–Trip Reduction Programs TR 8–Ride Sharing, Last-Mile Connection TR 10–Land Use Strategies TR 19–	**Consistent.** Transportation (TR) control measures are strategies to reduce vehicle trips, vehicle use, Vehicle Miles Traveled (VMT), vehicle idling, and traffic congestion to reduce

[23] For example, policies focused on stationary sources are not applicable to the proposed project, which would not include any such sources.

Type	Applicable Measure	Consistency Analysis
	Medium and Heavy-Duty Trucks TR 22–Construction, Freight and Farming Equipment	motor vehicle emissions. Although most of the TR control measures are implemented at the regional level—that is, by MTC or California Department of Transportation (Caltrans), and therefore, the majority of TR control measures are inapplicable here—the 2017 Clean Air Plan relies on local communities to assist with the implementation of some measures. As discussed in Section 3.12 of the EIR, a Transportation Demand Management (TDM) Plan would be prepared that includes, but may not be limited to, bike facilities, vanpool programs, preferential parking, etc. The mitigation measures presented in this EIR also require heavy-duty trucks accessing the project site to use 2014 and newer model year engines, and use Tier 4 engines on construction equipment of 50 horsepower or greater ratings. Furthermore, electrical conduits would be provided in the parking lot to accommodate future electric vehicle parking spaces. The proposed project would also be subject to the Bay Area's Commuter Benefits Program, which requires all employers in BAAQMD's jurisdiction that have 50 or more full-time employees to offer commuter benefits to their employees.
Energy and Climate Control Measures	EN 1–Decarbonize Electricity Production EN 2–Renewable Energy Decrease Electricity Demand	**Inapplicable but Consistent**. The Energy and Climate (EN) control measures are intended to reduce energy use as a means of reducing adverse air quality emissions. The project is a private development and will use electricity from the existing grid. Nevertheless, the proposed project would comply with the applicable solar power generation requirements in the 2022 Building Energy Efficiency Standards, at a minimum.
Buildings Control Measures	BL 1–Green Buildings BL 2–Decarbonize Buildings	**Consistent**. The Buildings (BL) control measures focus on working with local governments to adopt the best greenhouse gas (GHG) emissions control practices and policies. The two that may apply here can potentially be achieved by individual projects. As discussed above for the EN control measures, the proposed buildings would comply with applicable solar requirements in the 2022 Building Energy Efficiency Standards.
Natural and Working Lands Control Measures	None Applicable	**Inapplicable but Consistent**. The project is not located in an urban area it does not include any changes to existing rangelands or

Type	Applicable Measure	Consistency Analysis
		wetlands; therefore, the Natural and Working Lands (NW) control measures are inapplicable here. Nevertheless, the proposed project would include the planting of various ornamental and shade trees throughout the developed portion of the project site and would maintain the existing 47-acre open space area.
Waste Management Control Measures	WA 4–Recycling and Waste Reduction	**Consistent**. The Waste Management (WA) control measures include strategies to increase waste diversion rates through efforts to reduce, reuse, and recycle. The majority of the WA control measures require BAAQMD regulatory actions and, therefore, are inapplicable here. The proposed project would comply with Assembly Bill (AB) 341, which requires mandatory commercial recycling for businesses that generate four cubic yards or more of commercial solid waste per week. Additionally, the proposed project would be required to reduce construction waste by 75 percent and use 30 percent recycled content during the construction of the proposed facility. Lastly, the project's operations are subject to the local jurisdiction's requirements for Senate Bill (SB) 1383 waste diversion, which requires individual cities and other jurisdictions to achieve 75 percent organic waste reduction goal by 2025.
Water Control Measures	WR 2–Support Water Conservation	**Consistent.** The 2017 Clean Air Plan includes control measures to reduce water use—one of which is not applicable here as it requires regulatory action by public entities. The proposed project would include water efficiency measures required under CALGreen and Title 24 codes, such as water-efficient indoor plumbing fixtures and water-efficient landscaping.
Super GHG Control Measures	SL 1–Short-Lived Climate Pollutants SL 2–Guidance for Local Planners SL 3–GHG Monitoring and Emissions Measurements Network	**Consistent**. Super-GHGs include methane, black carbon, and fluorinated gases. These compounds are sometimes referred to as short-lived climate pollutants because their lifetime in the atmosphere is generally fairly short. Measures to reduce super-GHGs are addressed on a sector-by-sector basis in the 2017 Clean Air Plan. As discussed under Impact AIR-2, the proposed project would be required to implement mitigation that would require the installation of transportation infrastructure that would encourage the use of alternative

Type	Applicable Measure	Consistency Analysis
		fuel passenger vehicles and limit truck idling on-site. In addition, the proposed project would comply with AB 341, which mandates commercial recycling for businesses that generate four cubic yards or more of commercial solid waste per week, which could contribute to reducing methane by diverting waste from landfills. Moreover, if the proposed project utilizes the warehouse buildings to accommodate cold storage, the refrigerant systems would be required to comply with California's Refrigerant Management Program (RMP), which would limit the global warming potential (GWP) of refrigerants in stationary refrigeration systems greater than 50 pounds in recharge capacity to no greater than 150 GWP. Lastly, although super-GHG control measures are directed toward landfills and farming activities and would be implemented by BAAQMD and/or local jurisdictions, the proposed project is subject to SB 1206, which prohibits the sale of hydrofluorocarbons, which has been in commercial refrigeration.
Further Study Control Measures	None Applicable	**Consistent**. The majority of the Further Study Control Measures (FSM) apply to sources regulated directly by BAAQMD or to project types unlike the one proposed here (residential and wineries); therefore, the FSM control measures are inapplicable here. Because BAAQMD is the implementing agency, any new sources of stationary and area sources in the project site would be required to comply with these additional study control measures in the 2017 Clean Air Plan.

Notes:
AG = Agricultural BL = Buildings EN = Energy and Climate
FSM = Further Study Measures NW = Natural and Working Lands
SL = Super GHG (Short-Lived) SS = Stationary Sources
TR = Transportation WA = Waste Management
WR = Water Control Measures
Source: BAAQMD. 2017, April 19. Final 2017 Clean Air Plan, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area; see also Appendix B1 (AQ/HRA Report), Table 8-1.

As shown in Table 3.2-9, the proposed project would not conflict with the applicable clean air control measures contained in the Clean Air Plan. However, as discussed below with respect to Impact AIR-2, the proposed project would generate some operational emissions which exceed BAAQMD's significant thresholds for NOx after the implementation of applicable mitigation. (The effectiveness of available mitigation measures is further discussed under Impact AIR-2.) BAAQMD's significance thresholds are established to identify projects that have the potential to generate a substantial

amount of criteria air pollutants. Moreover, as previously discussed, the proposed project was not contemplated in the Solano County General Plan, though development along the lines proposed for the project was assumed in the City of Suisun City General Plan. Thus, it is not clear whether the ARB, in preparing the 2017 Clean Air Plan, assumed development of the project site. Because the operational emissions for the proposed project would exceed the BAAQMD NO_x thresholds even after implementation of identified mitigation and because, further, the emissions inventory prepared for the 2017 Clean Air Plan may not have included emissions from the project site, the proposed project would be considered by BAAQMD to be a substantial emitter of criteria air pollutants and may, as a result, conflict with implementation of its 2017 Clean Air Plan. For both of these reasons, this impact is conservatively considered to be significant and unavoidable.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement all mitigation measures listed under Impact AIR-2.

Level of Significance After Mitigation

Significant unavoidable impact.

Cumulative Criteria Pollutant Emissions Impacts

Impact AIR-2:	**The proposed project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard.**

Impact Analysis

This impact is related to the cumulative effect of a project's regional criteria pollutant emissions. By its nature, air pollution is largely a cumulative impact resulting from emissions generated over a large geographic region. The nonattainment status of regional pollutants results from past and present development within the Air Basin, and this regional impact is a cumulative impact. Therefore, new development projects (such as the proposed project) within the Air Basin would contribute to this impact only on a cumulative basis. No single project would be sufficient in size, by itself, to result in nonattainment of regional air quality standards. Instead, a project's emissions may be individually limited, but cumulatively considerable when evaluated in combination with past, present, and future development projects.

Potential localized and regional impacts would result in exceedances of State or federal standards for NO_X, particulate matter (PM_{10} and $PM_{2.5}$), or CO. NO_X emissions are of concern because of potential health impacts from exposure to NO_X emissions during both construction and operation and as a precursor in the formation of airborne ozone. PM_{10} and $PM_{2.5}$ are of concern during construction because of the potential to emit exhaust emissions from the operation of off-road construction equipment and fugitive dust during earth-disturbing activities (construction fugitive dust). CO emissions are of concern during project operation because operational CO hotspots are related to increases in on-road vehicle congestion and potential health effects.

ROG emissions are also important because of their participation in the formation of ground level ozone. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, elderly, and young children.

The cumulative analysis focuses on whether a specific project would result in cumulatively considerable emissions. According to Section 15064(h)(4) of the CEQA Guidelines, the existence of significant cumulative impacts caused by other projects alone does not constitute substantial evidence that the project's incremental effects would be cumulatively considerable. Rather, the determination of cumulative air quality impacts for construction and operational emissions is based on whether the project would result in regional emissions that exceed BAAQMD regional thresholds of significance for construction and operations on a project level. The significance thresholds represent the allowable emissions each project can generate without generating a cumulatively considerable contribution to regional air quality impacts. Therefore, a project that would not exceed BAAQMD thresholds of significance on the project level also would not be considered to result in a cumulatively considerable contribution to these regional air quality impacts. Construction and operational emissions are discussed separately below.

Construction

During construction, fugitive dust would be generated from site grading and other earthmoving activities. The majority of this fugitive dust would remain localized and deposited near the project site; however, potential fugitive dust impacts exist unless control measures are implemented to reduce these emissions. Exhaust emissions would also be generated from the operation of the off-road construction equipment and on-road construction vehicles.

Construction Fugitive Dust

The BAAQMD does not recommend a numerical threshold for fugitive dust particulate matter emissions. Instead, BAAQMD bases the determination of significance for fugitive dust on a consideration of the control measures to be implemented, referred to as BMPs. If all appropriate emissions control measures are implemented for a project as recommended by BAAQMD, then fugitive dust emissions during construction are not considered significant. Therefore, BAAQMD determines a project to result in a potentially significant impact if that project were not to implement construction BMPs to minimize the extent of fugitive dust emissions, such as soil erosion, sediment migration, roadway dust re-entrainment, and soil trackout, during project construction. In the absence of specific information related to the proposed project's intended implementation of construction BMPs to minimize fugitive dust emissions, the proposed project is assumed to not include any construction BMPs. Therefore, mitigation would be required to ensure implementation of construction BMPs recommended by BAAQMD irrespective of the emissions reductions achieved by those BMPs. With the incorporation of this mitigation, short-term construction impacts associated with violating an air quality standard or contributing substantially to an existing or projected air quality violation would be less than significant for fugitive dust.

Construction Air Pollutant Emissions: ROG, NO_X, PM_{10}, and $PM_{2.5}$

CalEEMod methodologies (Version 2022.1), were used to estimate the proposed project's construction emissions. CalEEMod provides a consistent platform for estimating construction and operational emissions from various land use projects and is the model recommended by BAAQMD for estimating project emissions. Estimated construction emissions are compared with the applicable thresholds of significance established by BAAQMD to assess ROG, NO_X, exhaust PM_{10}, and exhaust $PM_{2.5}$ construction emissions to determine significance for this impact.

At the time of this analysis, the construction of the proposed project was anticipated to begin in Spring 2022 and be completed 20 months later. If the construction schedule moves to later years, construction emissions would likely decrease because of improvements in technology and more stringent regulatory requirements.

Construction activities such as grading, excavation, and travel on unpaved surfaces would generate dust and lead to elevated concentrations of PM_{10} and $PM_{2.5}$. According to the project applicant, approximately 106,000 cubic yards of soil is anticipated to be imported during grading activities. As BAAQMD dust control measures would be required to ensure fugitive dust impacts are less than significant, the emission estimates shown below account for the implementation of mitigation. The operation of construction equipment results in exhaust emissions, which include ROG and NO_X. Table 3.2-10 presents unmitigated construction-period emissions that would result from the development of the proposed project. Each construction activity includes the combined emissions of the following construction elements, as applicable: on-site exhaust, mobile exhaust, roadway dust, paving, and architectural coating. For more detail, refer to Table 4-12 in Appendix B1 (AQ/HRA Report).

Table 3.2-10: Unmitigated Average Daily Construction Emissions

Period	Criteria Pollutant Emissions (Pounds/Day)			
	ROG	NO_X	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
Year 2025	8	56	2	2
Year 2026	64	32	1	0.9
BAAQMD Significance Thresholds	54	54	82	54
Exceedance?	**Yes (for 2026)**	**Yes (for 2025)**	**No**	**No**

Notes:
This analysis relies on an 18-month, five-days-per-week, construction schedule, consistent with the construction schedule and modeling results contained in Appendix B1 (AQ/HRA Report), Section 4.2.
ROG = reactive organic gases
NOx = nitrogen oxides
PM_{10} = particulate matter, including dust, 10 micrometers or less in diameter
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
BAAQMD = Bay Area Air Quality Management District
Source: Appendix B1 (AQ/HRA Report), Table 4-12.

ROG emissions (generated in largest quantities during architectural coating activities, see Appendix B1 (AQ/HRA Report), Table 4-12) during project construction for year 2026 would exceed BAAQMD

significance thresholds. MM AIR-2d, however, would require the use of low-VOC (i.e., ROG) architectural coating products during project construction, which would significantly reduce ROG emissions. Table 3.2-11 displays ROG emissions generated during project construction incorporating the implementation of mitigation. As shown therein, mitigation would reduce ROG emissions to below the applicable BAAQMD significance thresholds during project construction, primarily, by implementing the use of architectural coating products that contain no greater than 50 grams of VOC (i.e., ROG) per liter of product. As a result, ROG emissions would be reduced from 64 average pounds per day in 2026 to 27 average pounds per day, which is below BAAQMD's significance threshold of 54 pounds per day for ROG emissions during project construction. ROG would be reduced in year 2025 as well, although the project does not exceed the threshold for that year. Therefore, construction ROG emissions would be less than significant with the implementation of mitigation.

NOx also would exceed BAAQMD significance thresholds by only 2 pounds per day for year 2025 (generated in largest quantities during building construction activities). MM AIR-2a through MM AIR-2c would require the use of some EPA-approved Tier 4 off-road equipment and other emissions reducing measures, which would significantly reduce NO_x emissions. Table 3.2-11 displays NOx emissions generated during project construction incorporating the implementation of mitigation. As shown therein, mitigation would reduce NOx emissions to below the applicable BAAQMD significance thresholds during project construction by requiring the use of EPA-approved Tier 4 offroad equipment along with other emissions reducing measures. As a result, NO_x emissions would be reduced from 56 average pounds per day in 2025 to 25 average pounds per day, which is below BAAQMD significance threshold of 54 pounds per day for NO_x emissions during project construction. NO_x would be reduced in year 2026 as well, although the project does not exceed the threshold for that year. Therefore, construction ROG emissions would be less than significant with the implementation of mitigation. Both PM_{10} and $PM_{2.5}$ construction emissions would be noticeably reduced as well.

Table 3.2-11: Mitigated Average Daily Construction Emissions

Period	Criteria Pollutant Emissions (Pounds/Day)			
	ROG	NO_X	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
Year 2025	5	25	0.5	0.5
Year 2026	30	53	1	1
BAAQMD Significance Thresholds	54	54	82	54
Exceedance?	**No**	**No**	**No**	**No**

Notes:
This analysis relies on an 18-month, five-days-per-week construction schedule, consistent with the construction schedule and modeling results contained in Appendix B1 (AQ/HRA Report), Section 4.2.
ROG = reactive organic gases
NOx = nitrogen oxides
PM_{10} = particulate matter, including dust, 10 micrometers or less in diameter
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
BAAQMD = Bay Area Air Quality Management District
Source: Appendix B1 (AQ/HRA Report), Table 4-13.

Operation

Operational Air Pollutant Emissions: ROG, NO_X, PM_{10}, $PM_{2.5}$

Operational emissions would include area, stationary, and mobile sources. Area sources would include emissions from architectural coatings, consumer products, and landscape equipment. Mobile sources include exhaust and road dust emissions from vehicles that would travel to and from the project site. Mobile sources also include exhaust from trailer-mounted TRUs, under a scenario where cold storage occurs on-site, which would accompany any freight truck carrying refrigerated goods. Stationary sources include emissions from on-site equipment, such as backup emergency generators, which would require a permit issued by BAAQMD. On-site mobile sources include yard trucks, and forklifts. Pollutants of concern include ROG, NO_X, PM_{10}, and $PM_{2.5}$.

Project operations were analyzed at full buildout immediately following the completion of construction in July 2026 as a conservative estimate of operational emissions beginning in the earliest year of full operation. According to the transportation analysis contained in Section 3.12–Transportation, the proposed project is expected to generate an estimated 473 daily truck trips and 3,253 daily passenger vehicle trips during full operation (see also Appendix B1 [AQ/HRA Report], Table 4-16). Because of the lack of information regarding the potential future tenants, the proposed warehouse space is analyzed under a dry storage scenario and a cold storage scenario.

The cold storage project scenario would also include the operation of TRUs. In the absence of specific project information, all TRUs analyzed herein utilize the county's weighted averages for emission factors retrieved from the ARB's OFFROAD2021 database for in-state truck TRUs at 23 horsepower, in-state gen-set TRUs at 25 and 50 horsepower, in-state trailer TRUs at 25 and 50 horsepower, out-of-state gen-set TRUs at 25 and 50 horsepower, and out-of-state trailer TRUs at 25 and 50 horsepower. These vehicle categories were selected as they encompass all possible TRU emission factors contained in the ARB's OFFROAD2017 database, except for locomotive TRUs. As each truck is assumed to be accompanied by a TRU under the cold storage scenario and each of the 473 truck trips is one-way, this analysis assumes a truck and TRU population of 237. Each TRU is assumed to spend an average of four hours running on-site for unloading and loading purposes,[24] and operate for the entire time for the truck travels the average trip length of 39.5 miles per one-way trip to off-site destinations.

Operational emission estimates for each scenario of the proposed project are contained in Table 3.2-12. For detailed assumptions and calculations used to estimate emissions, see Appendix B1 (AQ/HRA Report).

[24] California Air Resources Board (ARB). 2021. Appendix I Health Analyses: Transport Refrigeration Units. Website: https://ww3.arb.ca.gov/board/rulemaking/tru2021/appi.pdf. Accessed February 9, 2023.

Table 3.2-12: Unmitigated Operational Emissions

Emission Source	ROG	NO_X	PM_{10} Total	$PM_{2.5}$ Total
Dry Storage Project Scenario				
Tons/Year				
Area	7.4	0.1	0.01	0.01
Mobile–Passenger Vehicles	1.5	1.3	2.0	0.5
Mobile–Trucks	0.2	14	1.8	0.7
On-site Equipment	0.4	3.2	0.2	0.2
Total Annual Operational Emissions	**9**	**19**	**4**	**1**
BAAQMD Significance Thresholds	10	10	15	10
Exceedance?	**No**	**Yes**	**No**	**No**
Average Pounds/Day				
Total Average Daily Operational Emissions	**52**	**107**	**23**	**8**
BAAQMD Significance Thresholds	54	54	82	54
Exceedance?	**No**	**Yes**	**No**	**No**
Cold Storage Project Scenario				
Tons/Year				
Area	7.4	0.1	0.01	0.01
Mobile–Passenger Vehicles	2	1.3	2	0.5
Mobile–Trucks	0.2	14	2	0.7
Mobile–TRUs on-site	1	10	0.2	0.2
Mobile–TRUs off-site	0.5	4	0.1	0.1
On-site Equipment	0.4	3.5	0.2	0.2
Total Annual Operational Emissions	**11**	**33**	**4**	**2**
BAAQMD Significance Thresholds	10	10	15	10
Exceedance?	**Yes**	**Yes**	**No**	**No**
Average Pounds/Day				
Total Average Daily Operational Emissions	**61**	**180**	**24**	**9**
BAAQMD Significance Thresholds	54	54	82	54
Exceedance?	**Yes**	**Yes**	**No**	**No**

Emission Source	ROG	NO_X	PM_{10} Total	$PM_{2.5}$ Total
Notes: [1] Calculations use unrounded results. 365 working days per year is assumed to estimate average daily emission rates. lb. = pounds ROG = reactive organic gases NO_X = oxides of nitrogen PM_{10} = particulate matter 10 microns in diameter $PM_{2.5}$ = particulate matter 2.5 microns in diameter Source: CalEEMod Output (see Appendix B1 [AQ/HRA Report], Tables 4-22 and 4-23).				

Table 3.2-12 indicates that the proposed project, under both the dry and cold storage project scenarios, would result in operational-related ozone precursors (ROG and NO_X) emissions which exceed BAAQMD's thresholds of significance. As area sources would generate the majority of operational ROG emissions, MM AIR-2e would be required to ensure the use of electric landscaping equipment, including chainsaws, lawnmowers, and leaf blowers during project operation. It is important to note that the principal source for operational ROG area emissions would be the use of consumer products by employees and visitors assumed in CalEEMod, Version 2022.1. Consumer products in this context consist of cleaning solvents and personal care products, such as hairspray. The CalEEMod default Statewide average VOC (i.e., ROG) emissions per building square foot metric was derived from the ARB's Statewide 2008 Consumer Product Inventory, and was updated for this analysis to use County-average VOC emissions per square foot.[25] Because this assumption averages emissions from residential uses and nonresidential land uses, such as the proposed project, the project, in reality, would result in fewer operational ROG emissions generated by the use of consumer products than what is demonstrated in this analysis. Nonetheless, more accurate information is not available to use in CalEEMod modeling for the use of consumer products during project operation; thus this assumption must be relied upon for purposes of this analysis. In addition, because consumer products would be consumed by employees and visitors on-site and the use of those products would not be under the control of the property owner or tenant, emissions from consumer products cannot necessarily be feasibly mitigated. As such, mitigation targeting the use of consumer products was omitted from this analysis. Nonetheless, as shown in Table 3.2-13, mitigation to reduce ROG, including MM AIR-2a and other operational measures, would effectively lessen emissions to below BAAQMD thresholds of significance.

To support reductions of emissions of NO_X, the proposed project is designed to include electric vehicle (EV) charging stations for passenger vehicles that at a minimum would accommodate Tier 2 charging stations (see Section 2.2.9). However, the majority of NO_X emissions generated during project operation would be emitted from the operation of the trucking fleet. To reduce these emissions, MM AIR-2f would be required to ensure the trucking fleet accessing the project site would be comprised of vehicles no older than model year 2014 to reduce tailpipe NO_X emissions. MM TRANS-1f would require that the end user at the proposed project prepare a Transportation Demand Management (TDM) Plan to evaluate and implement trip reduction strategies to help to reduce passenger vehicle trips to the proposed project site during operations. Additionally, MM AIR-2g would require the project proponent to provide future tenants information on available incentive programs offered through the ARB and BAAQMD that would support upgrading truck fleets to clean air technology equipment; MM AIR-2h would require that tenants sign lease agreements stipulating

[25] California Air Pollution Control Officers Association (CAPCOA). 2021. CalEEMod Appendix E, Technical Source Documentation.

to the use of only electric forklifts; and MM AIR-2i would require all cold storage warehouses to include electrical infrastructure equipped with plug-ins to support TRUs while stationary at the dock. Nonetheless, despite the many emissions reductions that would be realized from implementation of mitigation (see Table 3.2-13), NOx emission still would not be reduced below BAAQMD thresholds of significance; and no additional feasible mitigation to further lessen emissions is known to the City or Applicant at this time nor has any been suggested in agency or public comments on the NOP. Therefore, operational impacts of the proposed project, regarding NOx emissions, would remain significant and unavoidable after implementation of mitigation. Mitigation would, however, noticeably lessen NOx emissions and reduce both PM_{10} and $PM_{2.5}$ operational emissions.

Table 3.2-13: Mitigated Operational Emissions

Emission Source	ROG	NO_X	PM_{10} Total	$PM_{2.5}$ Total
Dry Storage Project Scenario				
Tons/Year				
Area	6	-	-	-
Mobile–Passenger Vehicles	2	1.3	2	0.5
Mobile–Trucks	0.2	11	2	0.6
On-site Equipment	0.05	1.2	0.1	0.07
Total Annual Operational Emissions	**7**	**14**	**4**	**1**
BAAQMD Significance Thresholds	10	10	15	10
Exceedance?	**No**	**Yes**	**No**	**No**
Average Pounds/Day				
Total Average Daily Operational Emissions	**41**	**75**	**22**	**7**
BAAQMD Significance Thresholds	54	54	82	54
Exceedance?	**No**	**Yes**	**No**	**No**
Cold Storage Project Scenario				
Tons/Year				
Area	6	-	-	-
Mobile–Passenger Vehicles	2	1.3	2	0.5
Mobile–Trucks	0.2	11	2	0.6
Mobile–TRUs on-site	0.05	0.4	0.009	0.009
Mobile–TRUs off-site	0.5	4	0.09	0.08
On-site Equipment	0.05	1.2	0.1	0.07
Total Annual Operational Emissions	**8**	**18**	**4**	**1**
BAAQMD Significance Thresholds	10	10	15	10

Emission Source	ROG	NO_X	PM_{10} Total	$PM_{2.5}$ Total
Exceedance?	**No**	**Yes**	**No**	**No**
Average Pounds/Day				
Total Average Daily Operational Emissions	**44**	**98**	**22**	**7**
BAAQMD Significance Thresholds	54	54	82	54
Exceedance?	**No**	**Yes**	**No**	**No**

Notes:
[1] Calculations use unrounded results. 365 working days per year is assumed to estimate average daily emission rates.
lb. = pounds ROG = reactive organic gases NO_X = oxides of nitrogen
PM_{10} = particulate matter 10 microns in diameter $PM_{2.5}$ = particulate matter 2.5 microns in diameter
Source: CalEEMod Output (see also Appendix B1 [AQ/HRA Report], Tables 4-26 and 4-27).

Operational Carbon Monoxide Hotspot

The CO emissions from traffic generated by the proposed project are a concern at the local level. Congested intersections can result in high, localized concentrations of CO.

The BAAQMD recommends a screening analysis to determine whether a project has the potential to contribute to a CO hotspot. The screening criteria identify when site-specific CO dispersion modeling is necessary. The proposed project would result in a less than significant impact to air quality for local CO if all the following screening criteria are met:

1. The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, Regional Transportation Plan, and local congestion management agency plans; and
2. The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; and
3. The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

As indicated in the transportation analysis contained in Section 3.12 – Transportation, no intersections impacted by the proposed project would experience traffic volumes of 44,000 vehicles per hour. According to the analysis therein, the study intersection which would experience the most traffic volume during the 'Existing Plus Project Traffic Volumes' scenario during AM and PM peak-hours would be the intersection of Sunset Avenue and State Route (SR) 12. As discussed therein, that intersection would experience an estimated 4,649 AM peak-hour vehicle trips and 5,332 PM peak-hour vehicle trips with the implementation of the proposed project. Therefore, the proposed project would not result in any nearby intersection having peak-hour traffic volumes exceeding 44,000 vehicles per hour.

Nonetheless, CO hotspots can occur when a transportation facility's design or orientation prevents the adequate dispersion of CO emissions from vehicles, resulting in the accumulation of local CO concentrations. The design or orientation of a transportation facility that may prevent the dispersion of CO emissions include tunnels, parking garages, bridge underpasses, natural or urban canyons, below-grade roadways, or other features where vertical or horizontal atmospheric mixing is substantially limited. Adjacent roadways that would receive new vehicle trips generated by the proposed project do not include roadway segments where vertical or horizontal atmospheric mixing is substantially limited.

Finally, the proposed project would not conflict with the Solano County Congestion Management Program (CMP), as discussed in Section 3.12 – Transportation. As discussed in Section 3.12, all studied roadway segments and intersections would operate at acceptable levels with traffic generated by the proposed project in combination with existing traffic levels. Therefore, based on the above criteria, the proposed project would not exceed the CO screening criteria and would have a less than significant impact related to CO.

Conclusion

The proposed project would generate criteria pollutant and ozone precursor emissions during construction and operation. BAAQMD does not have a bright-line emissions threshold for determining potentially significant impacts related to construction fugitive dust. Instead, BAAQMD determines a project to result in a potentially significant impact if that project were not to implement construction BMPs to minimize the extent of fugitive dust emissions, such as soil erosion, sediment migration, roadway dust re-entrainment, and soil trackout, during project construction. In the absence of specific information related to the proposed project's intended implementation of construction BMPs to minimize fugitive dust emissions, the proposed project is assumed to not include any construction BMPs. Therefore, MM AIR-2b and MM AIR-2c would ensure implementation of construction BMPs recommended by BAAQMD irrespective of the emissions reductions achieved by those BMPs.

Unmitigated project construction ROG and NO_X emissions would exceed BAAQMD significance thresholds. Specifically, architectural coating activities during project construction would principally contribute to the exceedance. As such, MM AIR-2d would require project construction to utilize low-VOC (i.e., ROG) architectural coating products containing no greater than 50 grams of VOC per liter of product to reduce the generation of ROG emissions during architectural coating activities. Mitigation would also require the use of some EPA-approved Tier 4 off-road equipment and other emissions reducing measures, which would significantly reduce NOx emissions during construction. Implementation of this mitigation would result in reducing ROG and NO_X emissions to levels below BAAQMD significance thresholds.

Unmitigated project operation under both a dry storage scenario and a cold storage scenario would result in ROG and NO_X emissions which exceed BAAQMD significance thresholds. ROG emissions generated during project operation would principally be generated by consumer products, which cannot be sufficiently controlled by the proposed project due to the possible use of cleaning products, hairsprays, and other personal care products by employees.

For project operations under both a dry storage scenario and a cold storage scenario, implementation of MM AIR-2e through MM AIR-2i would result in a reduction of ROG emissions during project operation of approximately 10 percent per year based on CalEEMod default assumptions. This reduction in air pollution generated by the proposed project would reduce ROG emissions below BAAQMD significance thresholds. As well, this mitigation would serve to reduce NO_X emissions. As NO_X emissions generated during project operation would principally be generated by the operation of the trucking fleet, irrespective of whether the fleet would accommodate the use of TRUs, MM AIR-2f would be required to ensure the trucking fleet accessing the project site would be comprised of vehicles no older than model year 2014 to reduce tailpipe NO_X emissions. Other transportation-related mitigation would require that the end user at the proposed project prepare a TDM Plan to evaluate and implement trip reduction strategies to help to reduce passenger vehicle trips to the proposed project site during operations. Finally, MM AIR-2g would require the project proponent to provide future tenants information on available incentive programs offered through the ARB and BAAQMD that would support upgrading truck fleets to clean air technology equipment. Nonetheless, the emissions reductions that could be realized from implementation of assorted mitigation would not reduce operational NOx emissions below BAAQMD significance thresholds, and no other feasible mitigation is known at this time.

Consequently, implementation of construction-related mitigation would sufficiently reduce project construction emissions to less than significant levels; however, implementation of operation-related mitigation would not be sufficient to reduce project operational NOx emissions to less than significant levels. Therefore, this impact would be significant and unavoidable even after implementation of identified mitigation.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement MM TRANS-1f and:

MM AIR-2a The project applicant shall require its contractors, as a condition of contract, to reduce construction-related exhaust emissions by ensuring that all off-road equipment greater than 50 horsepower shall operate on an EPA-approved Tier 4 or newer engine.

MM AIR-2b The following Best Management Practices (BMPs), as recommended by the Bay Area Air Quality Management District (BAAQMD), shall be included in the design of the project and implemented during construction, as a condition of a contractor's contract:

- All exposed non-paved surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and access roads) shall be watered at least two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

- All visible mud or dirt trackout onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.
- The prime construction contractor shall post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. The City and the construction contractor shall take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

MM AIR-2c The following additional Best Management Practices (BMPs) shall be included in the design of the project and implemented during construction, as a condition of a contractor's contract:

- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure (ACTM) Title 13, Section 2485 of California Code of Regulations). Clear signage regarding idling restrictions shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

MM AIR-2d Prior to the issuance of grading or building permits, the project applicant shall provide the City with documentation demonstrating the use of "Low-VOC" architectural coatings during the proposed project's construction. "Low-VOC" architectural coatings used during project construction shall not exceed 50 grams of reactive organic gases (ROG) or volatile organic compounds (VOC) per liter of product.

MM AIR-2e Prior to issuing any certificate of occupancy for the proposed project or any individual building within the proposed project, the project applicant shall provide the City with documentation demonstrating the use of electric landscaping equipment during the operation of the proposed project or individual building.

Landscaping equipment referred to in this requirement shall include the use of electric lawnmowers, leaf blowers, and chainsaws.

MM AIR-2f Prior to issuing the certificate of occupancy for the proposed project or any individual building within the proposed project, the project applicant shall provide the City with documentation demonstrating that any tenant-owned heavy-duty trucks (vehicles above 33,000 pounds gross vehicle weight rating) used during project operations must meet or exceed model year 2014. If the project applicant or tenant does not own the heavy-duty trucks that would be used during operation of the proposed project or individual building, the project applicant shall provide the City with documentation from the trucks owners or operators demonstrating that trucks utilized for operation of the proposed project or individual building will meet or exceed model year 2014. If any change occurs where a new truck fleet is utilized during operation of the proposed project or individual building, the project applicant shall provide the City with documentation demonstrating that the new truck fleet

MM AIR-2g As a part of future lease agreements, the project proponent shall provide all future tenants at the project site information on available California Air Resources Board (ARB) and Bay Area Air Quality Management District (BAAQMD) incentive programs, such as the Carl Moyer Program and the Voucher Incentive Program, that support upgrading truck fleets to clean air technology equipment.

MM AIR-2h Prior to occupancy, the project applicant shall stipulate in tenant lease agreements that all forklifts operating on the project site are solely powered by electricity.

MM AIR-2i If the proposed project would include cold storage warehouse(s), the project shall include electrical infrastructure such that all loading docks are equipped with plug-ins to support TRUs while stationary at the docks. All trucks with TRUs shall be required to be plugged in and shut off the TRU engines while stationary at the loading docks.

Level of Significance After Mitigation

Significant unavoidable impact.

Sensitive Receptors Exposure to Pollutant Concentrations

Impact AIR-3:	**The proposed project would expose sensitive receptors to substantial pollutant concentrations.**

Impact Analysis

The proposed project could expose sensitive receptors to elevated pollutant concentrations if it causes or contributes significantly to elevated pollutant concentration levels. Unlike regional emissions, localized emissions are typically evaluated in terms of air concentration rather than mass so they can be more readily correlated to potential health effects. As the proposed project would constitute the development of approximately 2.1-million square feet of industrial warehouse space and the operation of heavy-duty trucking fleets, a construction and operational HRA was prepared

for the proposed project and is summarized below. The modeling results and calculations used for the HRA are contained in Appendix B1 (AQ/HRA Report).

Construction and Operational Related Diesel Particulate Matter

Table 3.2-14 presents a summary of the results of the HRA prepared for the proposed project during project construction and operation both without and with mitigation (see Appendix B,). As previously discussed, the proposed project would become operational immediately following the completion of construction activities in 2026. As such, the HRA analyzes the proposed project's construction DPM emission concentrations for the first two years of nearby sensitive receptor exposure (including residences, workers, and other sensitive receptors) and the proposed project's operational DPM emission concentrations for the remainder of the exposure durations (e.g., 30 years for residential receptors), consistent with BAAQMD's Health Risk Assessment Guidelines.[26]

Because the proposed project could accommodate the construction and operation of 2.1 million square feet of cold storage space and the subsequent operation of TRUs in addition to truck and passenger vehicle activities, the HRA analyzes the worst-case cold storage project scenario as a conservative assessment. As shown in Table 3.2-14, health risks resulting from the construction and operation of a cold storage project scenario were found to exceed BAAQMD's project-level significance thresholds without mitigation, but fall well below thresholds with project mitigation. Therefore, the proposed project's health risk impacts would be less than significant with mitigation.

Table 3.2-14: Summary of Unmitigated and Mitigated Health Risks at the Maximally Impacted Sensitive Receptor Under Worst-Case Scenario

Mitigation Scenario[1]	Cancer Risk[2] (risk per million)	Chronic Non-Cancer Hazard Index[2]	Annual Average $PM_{2.5}$ Concentration[4] ($\mu g/m^3$)
Unmitigated Emissions (Cold Storage)	40	0.02	0.24
Mitigated Emissions (Cold Storage)	6.5	0.003	0.20
BAAQMD Thresholds of Significance	10	1	0.3
Exceedances before Mitigation?	**Yes**	**No**	**No**
Exceedances after Mitigation?	**No**	**No**	**No**

Notes:
DPM = diesel particulate matter
MIR = Maximally Impacted Sensitive Receptor
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
$\mu g/m^3$ = micrograms per cubic meter

1 The following construction sources are included in the health risk assessment: diesel construction equipment, on-road diesel vehicles, and on-road gasoline construction worker vehicles; The following operational sources are included: on-site stationary and mobile sources, on-road diesel and gasoline vehicles, and TRU operations (traveling and idling).

2 Cancer risk MIR is a residential receptor located at the universal transverse mercator easting and northing coordinates [589280, 4233528] in Zone 10N.

3 Chronic non-cancer hazard index MIR is a worker receptor located at the universal transverse mercator easting and northing coordinates [588740, 4233348] in Zone 10N. The maximum impact would occur during project operations.

[26] Bay Area Air Quality Management District (BAAQMD). 2016. BAAQMD Air Toxics NSR Program Health Risk Assessment Guidelines. December.

Mitigation Scenario[1]	Cancer Risk[2] (risk per million)	Chronic Non-Cancer Hazard Index[2]	Annual Average $PM_{2.5}$ Concentration[4] ($\mu g/m^3$)

[4] Annual average $PM_{2.5}$ concentration MIR is a worker receptor located at the universal transverse mercator easting and northing coordinates [588740, 4233348] in Zone 10N under the unmitigated scenario, and at [588660, 4233348] under the mitigated scenario. The maximum impact would occur during project operations for the unmitigated scenario and during project construction for the mitigated scenario.

Data Source: Appendix B1 (AQ/HRA Report), Tables 5-5 and 5-6.
Thresholds Source: BAAQMD. 2023. California Environmental Quality Act Air Quality Guidelines.

Cumulative Health Risk Assessment

A cumulative HRA was conducted in accordance with BAAQMD recommendations. The cumulative health risk values were determined by adding the health risk values from refined modeling of the proposed project to the screening-level health risk values from each individual stationary and mobile source within a 1,000-foot radius of the site. The HRA concluded that the main source of a cumulative community health risk are the existing sources, including stationary sources at Travis Air Force Base. The analysis results presented in the HRA and contained in Appendix B1 (AQ/HRA Report) are shown in Table 3.2-15. As shown therein, health risks to nearby sensitive receptors would not exceed BAAQMD community health risk significance thresholds. Therefore, this impact would be less than significant.

Notably, this conclusion applies equally to workers who would be employed on the project site. The sources that would contribute to health risk impacts on the project receptors include those presented in Table 3.2-15. Because the distances to these sources are similar for the off-site receptors and the project receptors, the health risk impacts on the project receptors are not expected to be substantially higher than those presented in Table 3.2-15. Therefore, the health risk impacts on the project receptors are expected to be less than the cumulative significance thresholds as well.

Furthermore, nothing about locating workers near Highway 12 is inconsistent with the ARB's *Air Quality and Land Use Handbook*. In that document, the ARB recommends avoiding siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. The proposed project is not considered a sensitive land use by ARB's Handbook, and thus the guidance is overly conservative for this project. Nevertheless, the existing average annual daily traffic (AADT) on the segment of Highway 12 near the project site ranges from 12,500 to 18,000 based on Caltrans' most recent fi5ve-year records. The proposed project would generate about 3,253 passenger car trips and 473 truck trips per day. Conservatively assuming that all project-generated trips would travel through Highway 12, the combined traffic from existing Highway 12 AADT and the project-generated traffic would not exceed the ARB-recommended screening value of 50,000 vehicles per day for rural roads. Thus, the proposed project is consistent with the siting recommendations in the ARB Land Use Handbook, which are overly conservative criteria for this project.

Table 3.2-15: Summary of Cumulative Health Risks at the Maximally Impacted Sensitive Receptor Under Worst-Case Scenario

Source	Cancer Risk (per million)	Chronic HI	Annual Average $PM_{2.5}$ Concentration ($\mu g/m^3$)
Stationary Sources within 1,000 feet of project site	0.5	0.002	0
Stationary Sources at Travis Air Force Base	45	0.092	0.52
Roadways	1.1	0.014	0.13
Railways	0	0	0
Mitigated Project Operation	6.5	<0.01	0.09
Total	**54**	**0.13**	**0.6**
BAAQMD's Cumulative Thresholds of Significance	100	10	0.8
Exceedance?	No	No	No

Notes:
HI = health index
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
$\mu g/m^3$ = micrograms per cubic meter
Source: Appendix B1 (AQ/HRA Report), Table 7-2.

Carbon Monoxide Hotspot

As discussed in Impact AIR-2, the proposed project would not generate sufficient vehicle traffic during project operation to substantiate creating a CO hotspot. Therefore, this impact would be less than significant with regard to exposing sensitive receptors to substantial concentrations of CO emissions. As such, the proposed project would result in less than significant impacts related to exposing sensitive receptors to substantial pollutant concentrations.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

Implement all mitigation measures listed under Impact AIR-2.

Level of Significance After Mitigation

Less than significant impact.

Objectionable Odors Exposure

Impact AIR-4: **The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.**

Impact Analysis

Construction

During construction activities, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment. Given the location of the project site at the east end of Suisun City, it is anticipated that by the time such emissions reach any receptor sites, odor emissions would be diluted to well below any air quality or odor concern level. Therefore, construction odor impacts would be less than significant.

Operation

The proposed project would construct and operate a logistics center intended for warehouse and distribution purposes. Operation of this type of project would likely not generate objectionable odors that may affect a substantial number of nearby receptors. The types of uses that are considered to have objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. Receptors surrounding the project site within screening distances are generally to the west and consist of school and residential land uses. Thus, as the future tenants would utilize the proposed project for warehouse and distribution activities, implementation of the proposed project would not create or expose a substantial number of people to objectionable odors. As such, this impact would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

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3.3 - Biological Resources

3.3.1 - Introduction

This section describes the existing biological setting and potential effects from project implementation on the project site and the surrounding area. This section also identifies mitigation measures to reduce these potential effects to less than significant levels. Many of the descriptions and analyses in this section are based on a Biological Resource Evaluation (BRE) prepared by SWCA Environmental Consultants (SWCA).[1] SWCA also prepared a technical memorandum describing impacts and proposed mitigation measures for the project,[2] which was followed by an Addendum to the memorandum prepared by Huffman-Broadway Group.[3] This section is also based on a 2022 Spring Botanical Survey Results Report prepared by SWCA;[4] two separate technical reports prepared by Helm Biological Consulting (HBC), a 2023 Federally Listed Large Brachiopod Survey Report[5] and a 2023 California Tiger Salamander Habitat Assessment;[6] a 2023 Swainson's hawk nesting survey prepared by Monk & Associates (M&A);[7] and a 2024 California Tiger Salamander assessment and 2024 Federally Listed Large Brachiopod assessment prepared by M&A for the roadside ditches along Petersen Road.[8,9] All of these reports can be found in Appendix C.

3.3.2 - Environmental Setting

Overview

The study area is a 173.17-acre parcel located in an undeveloped area immediately east of the City of Suisun City, less than a mile west of Travis Air Force Base, in unincorporated Solano County. The study area also includes a portion of Walters Road fronting the parcel and approximately 2,650 linear feet of Petersen Road east, ending at the Travis Air Force Base commercial truck entrance. Petersen Road is on the north side of the study area; the unpaved road right-of-way between the property line and pavement is included in the study area. The region experiences a Mediterranean climate with warm, dry summers and cold, wet winters. The broader area surrounding the study area includes commercial and residential developments, undeveloped land, marsh land, and cultivated and fallow agricultural land. Immediately east of the study area there are undeveloped fields consisting of tilled/grazed cropland. State Route (SR) 12 is on the south side of the study area; the unpaved road right-of-way between the property line and pavement is included in the study area. In 2021, a new gas station was constructed along the western boundary of the study area, at the intersection of Walters Road and SR-12.

The 173.17-acre study area is undeveloped and generally consists of cultivated agricultural fields with scattered seasonal wetlands in the northern portion, and alkali meadow, seasonal wetland, and

1 SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation.
2 SWCA Environmental Consultants (SWCA). 2022. Technical Memorandum. Biological Impacts and Proposed Mitigation Measures.
3 Huffman-Broadway Group. 2023. Updated Addendum to SWCA's Technical Memorandum.
4 SWCA Environmental Consultants (SWCA). 2022. 2022 Spring Botanical Survey Results for the Suisun Logistics Center Project.
5 Helm Biological Consulting (HBC). 2023. Federally Listed Large Branchiopod Sampling Report.
6 Helm Biological Consulting (HBC). 2023. Habitat Assessment for California Tiger Salamander.
7 Monk & Associates (M&A). 2023. Protocol Level Nesting Swainson's Hawk Survey Report.
8 Monk & Associates (M&A). 2024. Amendment to Helm's Habitat Assessment for California Tiger Salamander, Roadside Ditch along North Side of Peterson Road.
9 Monk & Associates (M&A). 2024. Vernal Pool Branchiopod Wet Season Surveys, Northern Peterson Road Ditch.

coastal brackish marsh in approximately the southern third of the site. The elevation in the study area ranges from approximately 6 to 20 feet above sea level (NAVD 88). The study area is nearly flat with a gentle north to south slope. Drainage is aided by numerous ditches including east–west aligned ditches bordering Petersen Road and north–south aligned ditches that travel across the central portion of the site. The north–south aligned ditches drain portions of Suisun City, and transport urban runoff and stormwater runoff southward into Hill Slough, a tidal slough located ± 0.15 mile southeast of the study area. Hill Slough drains primarily through Suisun Slough to Grizzly Bay. No evidence of tidal influence was observed in the study area.

Soils

Mapped soil units in the study area are Antioch-San Ysidro Complex, 0-2 Percent Slopes; Pescadero Silty-clay loam, 0 percent slopes; and Solano Loam.[10] The major components in these soils are not hydric. The Antioch-San Ysidro Complex map unit contains 7 percent hydric Pescadero inclusions on basin floors. The Pescadero silty-clay loam map unit contains 7 percent hydric willows inclusions on basin floors. The Solano Loam map unit does not contain hydric inclusions. Observations made during soil pit evaluation, and in several trenches excavated in the agricultural field indicate that no hardpan is present in the study area. The following descriptions are summarized from the National Resources Conservation Service (NRCS).

Antioch-San Ysidro Complex, 0-2 Percent Slopes

The Antioch-San Ysidro Complex is about 50 percent Antioch Loam and 35 percent San Ysidro Sandy Loam with a remainder consisting of inclusions of Solano Loam and Pescadero clay loam. Descriptions of typical profiles of the major components follow.

Antioch Series

The Antioch Series soils are on nearly level to strongly sloping alluvial fans and terraces at elevations of less than 1,100 feet. The soils formed in alluvium derived from sedimentary rock. This series is moderately well to somewhat poorly drained with slow to medium runoff and very slow permeability.

San Ysidro Series

The San Ysidro Series soils are on fan remnants and stream terraces of less than 1,500 feet. The soils formed in alluvium from sedimentary rocks. This series is moderately well drained with slow to medium runoff and very slow permeability. Available water capacity is 3 to 5 inches.

Pescadero Silty-Clay Loam, 0 Percent Slopes

The Pescadero series soils are nearly level basins at elevations of 5 to 100 feet. The series consist of very deep, poorly drained soils that are formed in alluvium from sedimentary rock. Surface runoff is very slow with very slow permeability.

Solano Loam

Solano Series soils are in nearly level low terraces and in valley plains with slightly irregular hummocky surfaces at elevation of less than 100 feet. The soils formed in moderately fine textured,

[10] SWCA Environmental Consultants (SWCA). 2021. Biological Resources Evaluation.

sedimentary alluvium. This series is somewhat poorly drained with very slow or slow permeability. The soil has been drained and the water table lowered so that the water table is a limitation only after heavy rains or when the soil is overirrigated.

Weather Conditions

Biological and botanical surveys were conducted by SWCA in October and November 2020 and in March, April, July, and August of 2021. Weather conditions were generally clear, calm, and sunny during fieldwork with no precipitation and no intense wind, heat, or cold. All parts of the California experienced drought in 2021.[11] Precipitation recorded at the nearby Fairfield Weather Station, located approximately 5 miles northwest of the project site at an elevation of 40 feet, is summarized in the following passage. Precipitation received at the Fairfield Weather Station gauge is expected to be similar to that experienced in the study area. The percent of normal precipitation reported below is based on the average for the same period as logged by the Fairfield Weather Station gauge. The Aquatic Resource Delineation Report (incorporated into the BRE prepared by SWCA in 2021) contains additional precipitation analysis for the weeks preceding fieldwork survey days.

- October 2020–14.34 inches observed October 1, 2019, through September 30, 2020 (58.6 percent of normal)
- March 2021–7.68 inches observed October 1, 2020, through February 28, 2021 (41.1 percent of normal)
- April 2021–9.21 inches observed October 1, 2020, through March 31, 2021 (42.3 percent of normal)
- July 2021–9.34 inches observed October 1, 2020, through June 30, 2021 (38.4 percent of normal)

Natural Communities

Natural communities are defined by species composition and relative abundance. Natural communities described below correlate where applicable with A Manual of California Vegetation, Second Edition, and the most recent California Natural Communities List.[12] Natural communities are shown on Exhibit 3.3-1 and their acreages are in Table 3.3-1.

[11] SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation.
[12] Ibid.

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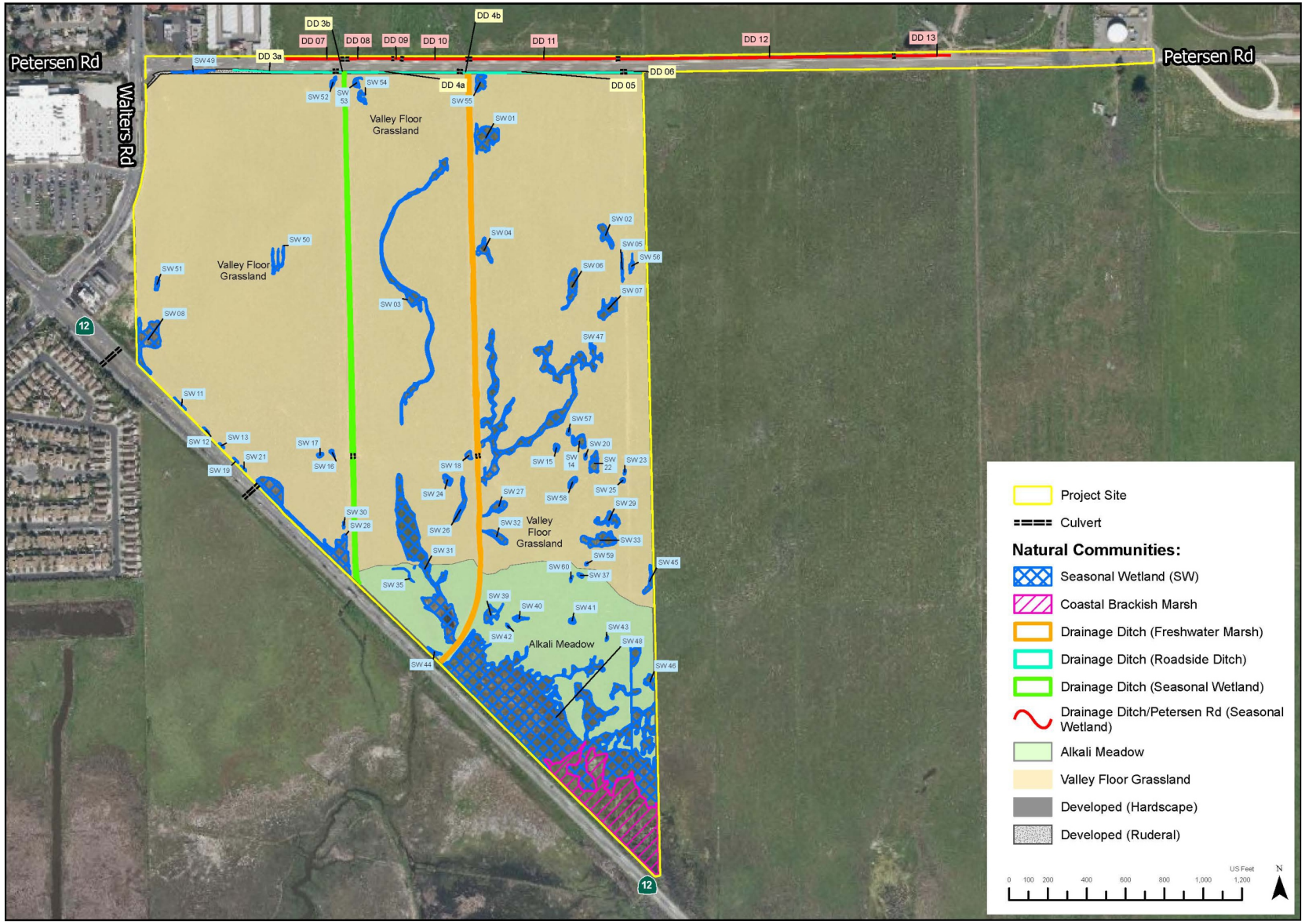

Source: Huffman-Broadway Group, Inc., 01/16/2024.

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Exhibit 3.3-1
Natural Communities

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Table 3.3-1: Natural Community Summary

Natural Community		Vegetation Alliances (CDFW Code/Rarity Rank)	Acreage
Status	**Name**		
Upland	Valley Floor Grassland	*Festuca perennis* Semi-Natural Alliance (41.321.00/No Rank) *Avena spp.–Bromus spp.* Semi-Natural Alliance (42.027.00/No Rank) *Centromadia parryi* Herbaceous Alliance (44.160.00/G2 S2)	133.25
	Alkali Meadow	*Distichlis spicata* Herbaceous Alliance (41.200.00/GNR S4) *Centromadia parryi* Herbaceous Alliance (44.160.00/G2 S2) *Cressa truxillensis–Distichlis spicata* Herbaceous Alliance (46.100.00/G2 S2) *Frankenia salina* Herbaceous Alliance (52.500.00/G4 S3)	16.91
Aquatic	Drainage Ditch (Freshwater Marsh)	Typha (*domingensis, latifolia*) Herbaceous Alliance (52.050.00/G5 S5) *Schoenoplectus acutus* Herbaceous Alliance (52.128.00/GNR S3S4)	0.74
	Drainage Ditch/Petersen Road (Seasonal Wetland)	None recognized	0.23
	Drainage Ditch (Seasonal Wetland)	None recognized	0.65
	Drainage Ditch (Roadside Ditches)	None recognized	0.09
	Seasonal Wetland	*Festuca perennis* Herbaceous Semi-Natural Alliance (41.321.00/No Rank) *Distichlis spicata* Herbaceous Alliance (41.200.00/GNR S4) *Centromadia parryi* Herbaceous Alliance (44.160.00/G2 S2) *Atriplex prostrata–Cotula coronopifolia* Herbaceous Semi-Natural Alliance (52.211.00/No Rank) *Cressa truxillensis–Distichlis spicata* Herbaceous Alliance (46.100.00/G2 S2)	14.57
	Coastal Brackish Marsh	Typha (*domingensis, latifolia*) Herbaceous Alliance (52.050.00/G5 S5)	3.36

Natural Community		Vegetation Alliances (CDFW Code/Rarity Rank)	Acreage
Status	Name		
		Schoenoplectus acutus Herbaceous Alliance	
Developed	Developed (Ruderal)	None recognized	2.89
	Developed (Hardscaped)	None recognized	0.71
Total			**173.17**

Notes:
CDFW = California Department of Fish and Wildlife
Vegetation alliances based on descriptions and classification methods in Sawyer et al. (2009) and A Manual of California Vegetation, Online Version). Communities may lack recognized alliances if they lack vegetation, occupy a small area, or are dominated by nonnatives. Alliance codes and ranks are from the CDFW. Rarity ranks of State (S) 1–3 are of conservation concern. Rarity ranks are defined as follows:
G1 S1: Critically imperiled worldwide/Statewide
G2 S2: Imperiled worldwide/Statewide
G3 S3: Vulnerable worldwide/Statewide
G4 S4: Apparently secure worldwide/Statewide
G5 S5: Demonstrably secure because of its worldwide/Statewide abundance
Acreages were calculated using AutoCAD or ArcMap functions. Acreages reported here are for the entire study area. (Main site plus off-site areas along Petersen Road and SR-12).
Source: SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation.

Valley Floor Grassland

A total of 133.25 acres of valley floor grassland occurs in the study area. The valley floor grassland occurs throughout the northern two-thirds of the study area. The valley floor grassland is grazed by cattle. Most of the valley floor grassland (all except the southernmost ±10 percent) has been repeatedly disked and subject to dryland farming. The field was planted with wheat (*Triticum aestivum*) in 2020. The fields were left fallow in 2021 to facilitate the wetland delineation. The Draft Solano Multiple Species Habitat Conservation Plan (Solano MSHCP) classifies areas of dryland farming within the valley floor grassland community as a grassland community rather than an agricultural community since many of the grassland ecosystem functions remain. [13] This community is on a low terrace that slopes gently southward, transitioning to alkali meadow.

In addition to planted crops such as wheat, the valley floor grassland in the study area is generally dominated by non-native grasses including wild oat (*Avena sp.*), bromes (*Bromus diandrus, B. hordeaceus*), Italian rye grass (*Festuca perennis*), Mediterranean barley (*Hordeum marinum ssp. gussoneanum*), and by native and non-native herbs including pappose tarplant (*Centromadia parryi ssp. parryi*), hayfield tarweed (*Hemizonia congesta ssp. luzulifolia*), yellow star-thistle (*Centaurea solstitialis*), purple thistle (*Centaurea calcitrapa*), prickly lettuce (*Lactuca serriola*), summer mustard (*Hirschfeldia incana*), storksbill (*Erodium botrys*), bindweed (*Convolvulus arvensis*), vetch (*Vicia sativa, V. villosa*), and buttercup (*Ranunculus muricatus*). Other native species present include alkali-mallow (*Malvella leprosa*), alkali weed (*Cressa truxillensis*), alkali heath (*Frankenia salina*), toad rush

[13] Solano County Water Agency (SCWA). 2012. Draft Solano Multiple Species Habitat Conservation Plan.

(*Juncus bufonius*), gumplant (*Grindelia camporum*), coyote thistle (*Eryngium aristulatum var. aristulatum*), buttercup (*Ranunculus californicus*), and blue dicks (*Dichelostemma capitatum*).

Most of this community in the study area contains over 60 percent relative cover of non-native grasses (mainly rye grass and bromes) and less than 10 percent relative cover of native herbs. Most of the valley floor grassland would be classified as either Avena spp.–Bromus spp. Herbaceous Semi-Natural Alliance (no rarity rank) or Festuca perennis Semi-Natural Alliance (no rarity rank) based on published membership rules. Between 30 and 40 acres of the valley floor grassland is conspicuously dominated by ±25 percent (or more) absolute cover of pappose tarplant and would be classified as *Centromadia parryi* Herbaceous Alliance based on published alliance descriptions and membership rules (see California Native Plant Society [CNPS] Vegetation Rapid Assessment Datasheet in Appendix E). The *Centromadia parryi* Herbaceous Alliance has a State rarity rank of S2 (imperiled Statewide) and is of conservation concern. This alliance occurs in the areas of dense pappose tarplant that were mapped as polygons during the protocol botanical survey (mostly in the central and eastern parts of the study area; total alliance area 43.08 acres, including portions of seasonal wetland and alkali meadow described below). Pappose tarplant is a California Rare Plant Rank (CRPR) 1B.2 rare plant (see additional discussion of pappose tarplant in Section V.D). While the cultivated valley floor grassland dominated by non-native plants is not of conservation concern, the portion of this community dominated by pappose tarplant is of conservation concern.

Seasonal wetlands (described below) are occasional within shallow depressions in the valley floor grassland community. The seasonal wetlands were mapped separately and occupy less than 5 percent of the area classified as valley floor grassland.

Alkali Meadow

Approximately 16.91 acres of alkali meadow occurs in the study area. The alkali meadow occurs in the roughly the southern third of the study area, immediately south of areas classified as valley floor grassland. This community is on a low terrace that slopes gently southward, transitioning to seasonal wetland and brackish marsh (described below). The area mapped as alkali meadow is dominated by hydrophytic and halophytic plants but does not meet wetland criteria.[14] Shallow depressions within the alkali meadow sometimes met wetland criteria and were classified as seasonal wetland (described below). The alkali meadow is grazed by cattle.

Most of the alkali meadow is dominated by salt grass (*Distichlis spicata*). Portions of the alkali meadow are dominated or co-dominated by alkali weed, alkali heath, pappose tarplant, Italian rye grass, and Mediterranean barley (*Hordeum marinum ssp. gussoneanum*), and storkbill. Native wildflowers such as common muilla (*Muilla maritima*), lomatium (*Lomatium utricularium*), geranium-leaved checkerbloom (*Sidalcea malviflora ssp. laciniata*) are present, generally atop hummocks within the alkali meadow.

Most of this community contains over 50 percent relative cover of salt grass and would be classified as Distichlis spicata Herbaceous Alliance (State rarity rank S4–apparently secure Statewide) based on published alliance descriptions and membership rules. Portions of this community are dominated by

[14] SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation.

pappose tarplant and would be classified as *Centromadia parryi* Herbaceous Alliance (State rarity rank S2–imperiled Statewide; described above; see pappose tarplant polygons on Figure 5).[15] Portions of this community may meet membership rules for *Cressa truxillensis–Distichlis spicata* Herbaceous Alliance (State rarity rank S2–imperiled Statewide) and *Frankenia salina* Herbaceous Alliance (State rarity rank S3–vulnerable Statewide); however, these areas are not extensive (estimated to be less than an acre). The California Natural Diversity Database (CNDDB) tracks alkali meadow occurrences and assigns this community a State rarity rank of S2 (imperiled Statewide).

Drainage Ditch (Including Freshwater Marsh and Seasonal Wetlands Therein)

The study area contains 13 drainage ditches (DD) described below. DD-01 (0.74 acre) and DD-02 (0.65 acre) are larger north–south aligned drainage ditches with perennial and intermittent flow, respectively. DD-03 through DD-06 (0.09 acre) are roadside ditches with ephemeral flow that occur along the south side of Petersen Road, and DD-07 through DD-13 (0.23 acre) are roadside ditches that occur along the north side of Petersen Road and support seasonal wetland vegetation. The ditches are shown on Exhibit 3.3-1.

DD-01 (Freshwater Marsh)

DD-01 is a man-made drainage ditch with perennial flow. DD-01 contains a stream channelized for flood control. The ditch is classified as an Order 1 Stream in National Hydrology Dataset blue line streams data layer. Aerial photographs show a few tributaries draining into the stream north of the study area (upstream of the portion culverted beneath development in Suisun City), and thus the portion of DD-01 in the study area may be an Order 2 Stream. DD-01 was flowing during all fieldwork (usually as a barely discernible trickle). DD-01 is dominated by obligate wetland plants. DD-01 enters the site through a concrete box culvert beneath Petersen Road and flows south through the site. The ditch passes through a culvert beneath a ranch road in the southern portion of the study area before curving to the west, leaving the site through a culvert beneath SR-12. South of SR-12, DD-01 drains through marsh into Hill Slough, a tidal slough located ± 0.15 mile southeast of the study area. Hill Slough drains to Suisun Slough and Grizzly Bay. Ephemeral roadside ditches (DD-04, DD-05 along Petersen Road) and some seasonal wetlands drain into DD-01 in the study area. DD-01 also drains urban runoff from development north of the study area. The ditch is surrounded by chain-link fence. The fence is in disrepair, allowing cattle access to graze the vegetation in and along the ditch. The substrate within DD-01 consists primarily of silt and clay. The concrete box culvert beneath Petersen Road and the culvert beneath the ranch road are armored with rock slope protection. Some rock slope protection is also present at ranch road culvert crossing.

DD-01 contains freshwater marsh vegetation and hydrology. Vegetation within DD-01 consists of a mixture of cattails (*Typha sp.*), bulrush (*Schoenoplectus acutus*), and other emergent aquatic plants such as water-plantain (*Alisma sp.*), Uruguayan primrose-willow (*Ludwigia hexapetala*), and rushes (*Juncus sp.*). Vegetation on the banks includes bristly ox-tongue (*Helminthotheca echioides*), Bermuda grass (*Cynodon dactylon*), Dallis grass (*Paspalum dilatatum*), perennial pepperweed (*Lepidium latifolium*), and Medusa-head (*Elymus caput-medusae*). There is no riparian tree corridor along DD-01. Portions of the ditch could be classified as Typha (*domingensis, latifolia*) Herbaceous Alliance (State rarity rank S5–demonstrably secure Statewide) and Schoenoplectus acutus

[15] SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation.

Herbaceous Alliance (State rarity rank S4–apparently secure Statewide) based on published alliance descriptions and membership rules. A few isolated riparian trees are present–two ash (*Fraxinus* sp.) are present in the southern portion of the study area and one white alder (*Alnus rhombifolia*) is present in the northern portion of the study area. DD-01 is a sensitive wetland community.

DD-02 (Seasonal Wetland)

DD-02 is a man-made drainage ditch with intermittent flow. DD-02 is shown on the Draft Solano MSHCP City of Suisun City Facilities Map as a drainage channel, and not a realigned creek. The ditch is classified as an Order 1 Stream in National Hydrology Dataset blue line streams data layer (USGS 2019). During the wet season, DD-02 was generally flowing (as a barely discernible trickle). DD-02 dries completely during the summer months. DD-02 enters the site in a concrete box culvert beneath Petersen Road and flows south through the site. The ditch passes through a culvert beneath a ranch road in the southern portion of the study area before leaving the site through a culvert beneath SR-12. South of SR-12, DD-02 drains through agricultural lands and marsh into Hill Slough, a tidal slough located ± 0.15 mile southeast of the study area. Hill Slough drains to Suisun Slough and Grizzly Bay. Ephemeral roadside ditches (DD-03 and DD-04) drain into DD-02 in the study area. DD-02 drains urban runoff from development north of the study area. The ditch is surrounded by chain-link fence. The fence is in disrepair, allowing cattle access to graze the vegetation in and along the ditch. The substrate within DD-02 consists primarily of silt and clay. The concrete box culvert beneath Petersen Road and the culvert beneath the ranch road are armored with rock slope protection. Some rock slope protection is also present at ranch road culvert crossing.

DD-02 contains seasonal wetland vegetation and hydrology. Vegetation within DD-02 consists of water-plantain, Bermuda grass, woolly clover (*Trifolium tomentosum*), bird's-foot trefoil (*Lotus corniculatus*), and rush. Vegetation on the banks includes bristly ox-tongue, Bermuda grass, English plantain (*Plantago lanceolata*), and Harding grass (*Phalaris aquatica*). At the southern edge of the study area adjacent to SR-12 there are a few Lombardy poplar (*Populus nigra*) trees growing along DD-02. No vegetation alliances were recognized within DD-02 as the vegetation is generally non-native, variable, and of limited extent. DD-2 is a sensitive wetland community.

DD-03 through DD-06 (Roadside Ditches)

DD-03, -04, -05, and -06 are constructed roadside ditches with ephemeral flow that occur along the south side of Petersen Road. Current ditch alignments were excavated in 2015, in association with the widening of Petersen Road. The roadside ditches drain into DD-01 and DD-02 at the northern end of the study area. The substrate in the ephemeral roadside ditches consists of silts and clays. Rock slope protection occurs in the ditches where they flow into DD-01 and DD-02. Metal pipe culverts occur in the roadside ditches beneath several ranch access road driveways off Petersen Road.

No riparian vegetation or wetlands occur in or are associated with the ephemeral roadside ditches. Vegetation in the ephemeral roadside ditches generally includes non-native annual grasses, similar to surrounding ruderal vegetation on the road shoulder (see description of developed ruderal areas below).

DD-07 through DD-13 (Drainage Ditch/Petersen Rd. Seasonal Wetland)

DD-07 through DD-13 are constructed roadside ditches with ephemeral flow that occur along the north side of Petersen Road. The roadside ditches drain into DD-01 and DD-02. The substrate in the ephemeral roadside ditches consists of silts and clays. Rock slope protection occurs in the ditches where they flow into DD-01 and DD-02. Metal pipe culverts occur in the roadside ditches beneath several ranch access road driveways off Petersen Road.

No riparian vegetation occurs in or is associated with the ephemeral roadside ditches. Vegetation in the ephemeral roadside ditches generally includes non-native annual grasses, similar to surrounding ruderal vegetation on the road shoulder (see description of developed ruderal areas below) and seasonal wetland vegetation in the bottoms of the ditches.

Seasonal Wetland

Approximately 14.57 acres of seasonal wetland occur in the study area (plus an additional 0.65 acre of seasonal wetland within Drainage Ditch DD-02). Some of the seasonal wetlands occur within the valley floor grassland where ditching, disking, cattle grazing, and cultivation with hay/grain crops has occurred. Most of the seasonal wetlands occur in the southern third of the study area as the site transitions to coastal brackish marsh. The source of hydrology for the seasonal wetlands is primarily direct precipitation and sheetflow from the surrounding uplands. Seasonal wetlands near the southern tip of the study area may also experience saturation or inundation from a seasonally elevated water table. No cemented hardpans were observed during soil investigation. Most seasonal wetlands never inundated in 2021 and never or only rarely inundate based on the lack of water observed in historical wet-season aerial photographs (a list of the specific seasonal wetlands that contained inundation is in the aquatic resources delineation). The seasonal wetlands are generally shallow (in depressions only 1-2 inches deep, or in swales). The seasonal wetlands are grazed by cattle. The seasonal wetlands were often dominated by non-native plant species, and sometimes varied little in vegetation composition compared with surrounding uplands.

Following the field verification with the United States Army Corps of Engineers (USACE), some aquatic resources were added, expanded, or merged into other features. The merged features were assigned a single identifying number, and thus some numbers in the sequence are not used (e.g., Seasonal Wetland [SW] 09). Table 3.3-2 summarizes the aquatic features.

Table 3.3-2: Aquatic Feature Summary and Characterization

Main Site Biological study area (BSA)							
Aquatic Resource	**Length (feet)**	**Average Width (feet)**	**Area (acre)**	**Inundation Max Depth (inch)[1]**	**Proportion Inundating[2]**	**Apparent Alkalinity[3]**	**Solano MSHCP[4] Seasonal Wetland Type[5]**
Seasonal Wetland (SW)							
SW 01	–	–	0.28	1.5	± 50%	Low	Pool
SW 02	–	–	0.09	0	0%	Moderate	Mesic Grassland
SW 03	–	–	0.70	4.5	± 5%	Low	Swale

Main Site Biological study area (BSA)							
Aquatic Resource	**Length (feet)**	**Average Width (feet)**	**Area (acre)**	**Inundation Max Depth (inch)[1]**	**Proportion Inundating[2]**	**Apparent Alkalinity[3]**	**Solano MSHCP[4] Seasonal Wetland Type[5]**
SW 04	–	–	0.09	3.8	± 75%	Low	Pool
SW 05	–	–	0.02	0	0%	Moderate	Mesic Grassland
SW 06	–	–	0.15	0	0%	Moderate	Mesic Grassland
SW 07	–	–	0.13	0	0%	Moderate	Mesic Grassland
SW 08	–	–	0.36	7.7	± 100%	Low	Pool
SW 11	–	–	0.01	0	0%	Low	Mesic Grassland
SW 12	–	–	0.01	0	0%	Low	Mesic Grassland
SW 13	–	–	0.01	0	0%	Low	Mesic Grassland
SW 14	–	–	0.07	2	± 100%	Moderate	Pool
SW 15	–	–	0.02	0	0%	Moderate	Mesic Grassland
SW 16	–	–	0.01	0	0%	Low	Mesic Grassland
SW 17	–	–	0.01	0	0%	Low	Mesic Grassland
SW 18	–	–	0.02	3	± 100%	Low	Pool
SW 19	–	–	0.01	0	0%	Low	Mesic Grassland
SW 20	–	–	0.01	3	± 100%	Moderate	Pool
SW 21	–	–	0.01	0	0%	Low	Mesic Grassland
SW 22	–	–	0.09	0	0%	Moderate	Mesic Grassland
SW 23	–	–	0.01	0	0%	Moderate	Mesic Grassland
SW 24	–	–	0.04	3	± 100%	Moderate	Pool
SW 25	–	–	0.01	4.5	± 100%	Moderate	Pool
SW 26	–	–	0.10	0	0%	Moderate	Alkaline Meadow
SW 27	–	–	0.09	2.5	± 75%	Moderate	Pool
SW 28	–	–	0.61	5.5	± 100%	Low	Pool
SW 29	–	–	0.10	0	0%	Moderate	Mesic Grassland
SW 30	–	–	0.01	1.5	± 100%	Low	Pool
SW 31	–	–	1.36	16+	± 25%	Moderate	Playa Pool (25%) Alkaline Meadow (75%)
SW 32	–	–	0.09	1	± 75%	Moderate	Pool
SW 33	–	–	0.21	2.8	± 100%	Moderate	Pool
SW 34	–	–	< 0.01 ac (52 sf)	3	± 100%	Moderate	Pool

Main Site Biological study area (BSA)							
Aquatic Resource	**Length (feet)**	**Average Width (feet)**	**Area (acre)**	**Inundation Max Depth (inch)[1]**	**Proportion Inundating[2]**	**Apparent Alkalinity[3]**	**Solano MSHCP[4] Seasonal Wetland Type[5]**
SW 35	–	–	0.01	0	0%	Moderate	Alkaline Meadow
SW 37	–	–	0.01	0	0%	Moderate	Alkaline Meadow
SW 39	–	–	0.09	0	0%	Moderate	Alkaline Meadow
SW 40	–	–	0.03	0	0%	Moderate	Alkaline Meadow
SW 41	–	–	0.02	3.1	± 100%	Moderate	Pool
SW 42	–	–	0.01	2.2	± 100%	Moderate	Pool
SW 43	–	–	< 0.01 ac (195 sf)	1	± 100%	Moderate	Pool
SW 44	–	–	0.02	0	0%	Moderate	Alkaline Meadow
SW 45	–	–	0.06	0	0%	Moderate	Mesic Grassland
SW 46	–	–	0.06	0	0%	High	Alkaline Meadow
SW 47	–	–	1.52	0	0%	Moderate	Swale
SW 48	–	–	7.55	5.5	± 5%	High	Playa Pool (5%) Alkaline Flat (95%)
SW 50	–	–	0.07	0	0%	Low	Mesic Grassland
SW 51	–	–	0.03	0	0%	Low	Mesic Grassland
SW 52	–	–	0.02	0	0%	Low	Mesic Grassland
SW 53	–	–	0.03	0	0%	Low	Mesic Grassland
SW 54	–	–	0.03	0	0%	Low	Mesic Grassland
SW 55	–	–	0.08	0	0%	Low	Mesic Grassland
SW 56	–	–	0.02	0.9	± 100%	Low	Mesic Grassland
SW 57	–	–	0.01	0	0%	Moderate	Mesic Grassland
SW 58	–	–	0.03	0	0%	Moderate	Mesic Grassland
SW 59	–	–	< 0.01 ac (197 sf)	0	0%	Moderate	Alkaline Meadow
SW 60	–	–	< 0.01 ac (203 sf)	0	0%	Moderate	Alkaline Meadow
Total SW in Main BSA	–	–	14.43	–	–	–	–

Main Site Biological study area (BSA)							
Aquatic Resource	**Length (feet)**	**Average Width (feet)**	**Area (acre)**	**Inundation Max Depth (inch)[1]**	**Proportion Inundating[2]**	**Apparent Alkalinity[3]**	**Solano MSHCP[4] Seasonal Wetland Type[5]**
Brackish Marsh (BM)							
BM 01	–	–	3.07	6.5	± 100%	High	(Not SW)
Total BM in Main BSA	–	–	3.07	–	–	–	–
Drainage Ditch (DD)							
DD 1a	1,956	11.5	0.52	7	± 100%	Low	(Not SW)
DD 1b	1,112	8.4	0.21	10.5	± 100%	Low	(Not SW)
DD 2a	1,956	10.6	0.48	4	± 100%	Low	Swale
DD 2b	642	11.0	0.16	5.5	± 100%	Low	Swale
Total DD in Main BSA	**5,666**	**–**	**1.37**	**–**	**–**	**–**	**–**
Total Aquatic Resources in Main Site BSA	**5,666**	**–**	**18.87**	**–**	**–**	**–**	**–**
Petersen Road Off-Site BSA							
Seasonal Wetland (SW)							
SW 49	–	–	0.04	7.5	± 100%	Low	Pool
Total SW in Petersen Road Off-site BSA	**–**	**–**	**0.04**	**–**	**–**	**–**	**–**
Drainage Ditch (DD)							
DD 1a	14	7.4	< 0.01 ac (103 sf)	–	–	Low	(Not SW)
DD 2a	14	4.9	< 0.01 ac (68 sf)	–	–	Low	Swale
DD 3a	503	2.0	0.02	–	–	Low	(Not SW)
DD 3b	27	1.9	< 0.01 ac (51 sf)	–	–	Low	(Not SW)
DD 4a	574	2.0	0.03	–	–	Low	(Not SW)
DD 4b	22	1.9	< 0.01 ac (41 sf)	–	–	Low	(Not SW)
DD 05	782	2.0	0.04	–	–	Low	(Not SW)
DD 06	75	2.0	< 0.01 ac (150 sf)	–	–	Low	(Not SW)

Main Site Biological study area (BSA)							
Aquatic Resource	**Length (feet)**	**Average Width (feet)**	**Area (acre)**	**Inundation Max Depth (inch)[1]**	**Proportion Inundating[2]**	**Apparent Alkalinity[3]**	**Solano MSHCP[4] Seasonal Wetland Type[5]**
DD-7 through DD-13	3,273	3.0	0.23 ac (10,019 sf)	–	–	Low	(Not SW)
Total DD in Petersen Road Off-site BSA	**5,284**	**–**	**0.33**	**–**	**–**	**–**	**–**
Total Aquatic Resources in Petersen Road Off-site BSA	**5,284**	**–**	**0.37**	**–**	**–**	**–**	**–**
State Route 12 Off-Site BSA							
Seasonal Wetland (SW)							
SW 19	–	–	< 0.01 ac (37 sf)	0	0%	Low	Mesic Grassland
SW 28	–	–	< 0.01 ac (200 sf)	5.5	± 100%	Low	Pool
SW 48	–	–	0.09	5.5	± 5%	High	Playa Pool (5%) Alkaline Flat (95%)
Total SW in State Route 12 Off-site BSA	**–**	**–**	**0.10**	**–**	**–**	**–**	**–**
Brackish Marsh (BM)							
BM 01	–	–	0.29	6.5	± 100%	High	
Total BM in State Route 12 Off-site BSA	**–**	**–**	**0.29**	**–**	**–**	**–**	-
Drainage Ditch (DD)							
DD 1b	38	10.3	0.01	10.5	± 100%	Low	–
DD 2b	44	9.2	0.01	5.5	± 100%	Low	–
Total DD in State Route 12 Off-site BSA	**82**	**–**	**0.02**	**–**	**–**	**–**	**–**
Total Aquatic Resources in State Route 12 Off-site BSA	**82**	**–**	**0.41**	**–**	**–**	**–**	**–**

Main Site Biological study area (BSA)							
Aquatic Resource	**Length (feet)**	**Average Width (feet)**	**Area (acre)**	**Inundation Max Depth (inch)[1]**	**Proportion Inundating[2]**	**Apparent Alkalinity[3]**	**Solano MSHCP[4] Seasonal Wetland Type[5]**

Notes:
ft = feet
ac = acre
in = inches
sf = square feet

[1] Inundation Max Depth was measured by a Biologist using a yard stick placed vertically in the deepest portion of the wetland. Max depth was assessed on November 4, 2021, approximately 10 days after a large storm delivered over 6 inches of rain to the region. Smaller rain events occurred after the storm and before the depth was assessed, including one rain event the night of November 3, 2021.

[2] Proportion Inundating was estimated based on of the maximum extent of inundation observed in the wetland features across fieldwork and in aerial photographs available in Google Earth. The percentage reflects the approximate proportion of the feature that experiences inundation. Most features experience no inundation. A few features inundate only in a small portion of the area they occupy (SW-03, -31, and -48 in particular).

[3] Apparent Alkalinity was estimated based on the preponderance of halophytic (salt-loving) plants, barren soils, and/or salt-crusted soils within aquatic features, and aerial photographs. Indicators of higher salinity/alkalinity increase as one moves south across the site. The highest alkalinity with barren soils was observed only in the southernmost wetlands near SR-12.

[4] Solano County Water Agency (SCWA). 2012. Draft Solano Multiple Species Habitat Conservation Plan.

[5] The Draft Solano MSHCP classifies seasonal wetlands into the following four types:

Pools: Greater than 1 inch of standing water for more than 10 continuous days with short (less than 3 weeks) to long (more than 3 weeks) durations of standing water, clear to moderate turbidity, and exhibiting significant vegetation cover.

Playa Pools: Greater than 1 inch of standing water for more than 10 continuous days with long (more than 3 weeks) to very long durations; often referred to as playa-type pools).

Swales or Mesic Grassland: Shallow, standing water (generally less than 1 inch) present for fewer than 10 continuous days.

Alkaline Flats and Meadows: Shallow, standing water (generally less than 1 inch) present for fewer than 10 continuous days and exhibiting indicators of high alkalinity (salt deposits on soil surface, presence of salt-tolerant plants).

The seasonal wetlands located within the cultivated fields were generally dominated by wheat (planted in 2020), rye grass, pappose tarplant, and/or buttercup (*R. muricatus*). Other plants observed in the seasonal wetlands located within the cultivated fields included prickly lettuce, Mediterranean barley, coyote thistle, alkali weed, bindweed, salt grass, cocklebur (*Xanthium strumarium*), hayfield tarweed, oat, vetch (*Vicia sativa*); storksbill, brass buttons (*Cotula coronopifolia*), woolly marbles (*Psilocarphus sp.*); clover (*Trifolium spp.*), willowherb (*Epilobium ciliatum*), common sow thistle (*Sonchus oleraceus*), and bird's-foot trefoil. The seasonal wetlands located south of and outside the cultivated fields varied in floral composition. Dominants observed in these wetlands often included brass buttons, rye grass, saltgrass, pappose tarplant, buttercup, Mediterranean barley, alkali heath, coyote thistle, silver hair grass (*Aira caryophyllea*), rabbit's foot grass (*Polypogon monspeliensis*), and rarely semaphore grass (*Pleuropogon californicus*), manna grass (*Glyceria sp.*), and Fremont's goldfields (*Lasthenia fremontii*).

Coastal Brackish Marsh

Approximately 3.36 acres of coastal brackish marsh occurs in the southeast corner of the study area. The marsh drains to the south through a culvert that passes beneath SR-12 and drains to Hill Slough, Suisun Slough, and ultimately Grizzly Bay. Inundation was observed in the coastal marsh on all

fieldwork days. The marsh appears to dry up completely in some dry-season historic aerial photos. Small fish about 1 inch in length were observed in the coastal brackish marsh during fieldwork in October 2020. Maximum inundation depths of 4 inches and 6.5 inches were recorded in the marsh on November 4, 2021. The brackish marsh is grazed by cattle.

Along its periphery, vegetation in the coastal brackish marsh is dominated by rushes (*Juncus* spp.) and common spikerush (*Eleocharis macrostachya*). The interior/southern portions of marsh are dominated by bulrush (*Schoenoplectus acutus*) and cattail (*Typha sp.*). Halophytes occur in the areas surrounding the brackish marsh, including alkali heath (*Frankenia salina*), salt grass (*Distichlis spicata*), sickle grass (*Parapholis incurva*), and saline clover (*Trifolium hydrophilum*), with vegetation also including patches of brass buttons and sparse growth of pickleweed (*Salicornia* sp.). Portions of the coastal brackish marsh could be classified as Typha (*domingensis, latifolia*) Herbaceous Alliance (State rarity rank S5–demonstrably secure Statewide) and *Schoenoplectus acutus* Herbaceous Alliance (State rarity rank S4–apparently secure Statewide) based on published alliance descriptions and membership rules. The coastal brackish marsh is a sensitive wetland community.

Developed (Ruderal)

Approximately 2.89 acres of developed (ruderal) land occurs in the study area. The area occurs only along disturbed road shoulders in off-site portions of the study area (0.87 acre in the Peterson Road Right-of-Way and 2.02 acres in the SR-12 Right-of-Way). Vegetation on road shoulders is managed (mowed and/or treated with herbicide). This community is dominated by non-native weedy species including Italian rye grass, brome fescue (*Festuca bromoides*), ripgut brome (*Bromus diandrus*), soft chess, oat, knotweed (*Polygonum aviculare ssp. depressum*), field mustard (*Brassica rapa*), radish (*Raphanus sativus*), common sow thistle, and rose clover (*Trifolium hirtum*). Vegetation generally exceeds 10 percent absolute cover.

Developed (Hardscape)

Approximately 0.71 acre of developed (hardscape) land occurs in the study area. The developed (hardscape) land occurs only on disturbed road shoulders in off-site portions of the study area (0.20 acre in the Peterson Road Right-of-Way and 0.51 acre in the SR-12 Right-of-Way). Vegetation is generally absent in the areas classified as developed (hardscape).

Existing Level of Disturbance

Site topography, drainage, vegetation, and soils have been disturbed by ongoing agricultural land use, road development, and ditching. Over 125 years ago, the construction of (now) Petersen Road and the two north/south ditches permanently altered how water flowed across the site (Petersen Road was the original alignment of SR-12). Construction of Petersen Road effectively cut off the top of the watershed that once flowed across the site from north to south. Water sheet flowing southward toward the site now enters the roadside ditches along Petersen Road and flows into north–south aligned ditches (DD-01 and DD-02).

Approximately 540 feet south of Petersen Road there is an underground gas line that was installed some time prior to 1952. SR-12 was constructed just south of the site by 1962. Between 1968 and 1993 the two north/south ditches were widened, and the eastern ditch was channelized with a

curved alignment to match to the SR-12 culvert. A residential subdivision north of the study area was constructed in the mid-1980s.

Livestock grazing of the study area has been ongoing for decades. The study area was being grazed by an estimated 200 cattle during fieldwork. A livestock corral occurs at the northeast corner of the study area. A couple water troughs are present, but cattle were observed drinking primarily from the north–south aligned ditches. Aerial photographs from the 1960s show some trenching or furrowing in the fields, likely associated with efforts to improve field drainage to increase agricultural productivity. Beginning in 2015, aerial photographs show evidence of disking or planting of dryland forage crops in the northern portion of the study area, and on the parcel just east of the study area. In 2020, the northern two-thirds of the site was planted with wheat. In 2021, no planting or harvesting occurred in the study area in order to facilitate the delineation.

Vegetation on road shoulders is managed (mowed and/or treated with herbicide). The frequency of the ditch vegetation maintenance is unknown. At the southern edge of the study area there is a tilled fire break along the north side of SR-12. The southeast corner of the site burned in a grassfire in October 2020. Concrete foundations of former structures occur in the southeast portion of the study area. Minor amounts of debris (windblown trash, discarded tires, etc.) occur scattered throughout the study area.

The vegetation in seasonal wetlands varies and individual seasonal wetlands may be classified as *Festuca perennis* Semi-Natural Alliance (no rarity rank), *Distichlis spicata* Herbaceous Alliance (State rank S4–apparently secure Statewide), *Centromadia parryi* Herbaceous Alliance (State rarity rank S2–imperiled Statewide), *Atriplex prostrata–Cotula coronopifolia* Herbaceous Semi-Natural Alliance (no rarity rank), and *Cressa truxillensis–Distichlis spicata* Herbaceous Alliance (State rarity rank S2–imperiled Statewide) based on published alliance descriptions and membership rules. The *Centromadia parryi* alliance is described with the valley floor grassland above and shown as population polygons on Exhibit 3.3-2. The *Cressa truxillensis–Distichlis spicata* alliance occurred only in the southernmost seasonal wetlands (located in or south of the alkali meadow).

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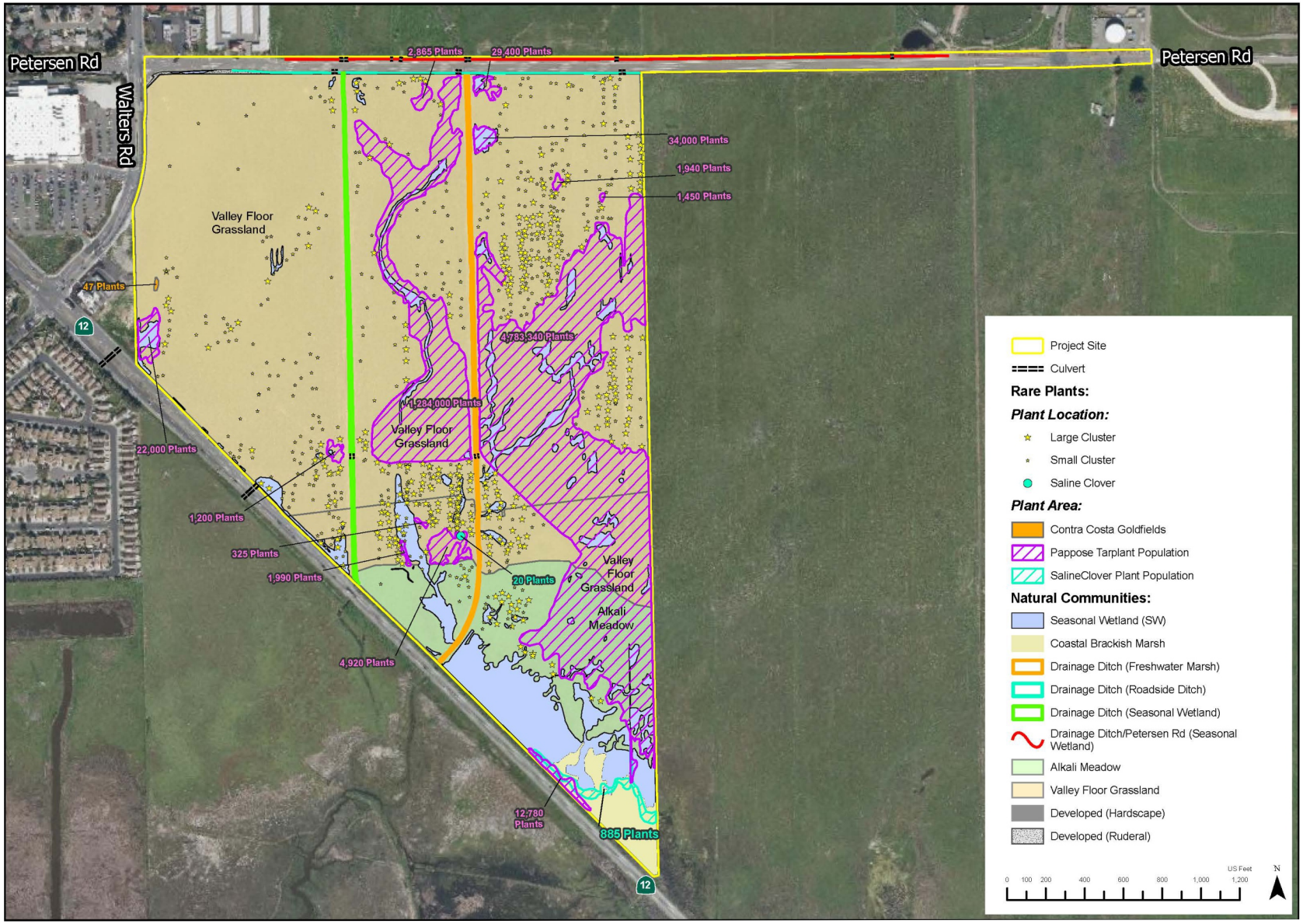

Source: Huffman-Broadway Group, Inc., 01/16/2024.

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Exhibit 3.3-2
Rare Plant Locations

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Biological Resources Within Project Site

Special-status Species

United States Fish and Wildlife Service (USFWS) file data, CNDDB/CNPS records, and field surveys were used to determine the special-status species that could occur in the study area. SWCA consulted with these sources during preparation of the BRE for the project site (see Appendix C) and found that as many as 55 species of special-status animals and 54 species of special-status plants have been recorded within a nine-quadrangle search area surrounding the project site.[16] Field surveys were conducted to determine whether habitat for special-status species identified in the file data is present in the study area. For many of these species, either suitable habitat is not present or the distributional limits of species preclude the possibility of their occurrence in the Biological study area (BSA). The rationale for excluding these species from consideration can be found in the BRE.

According to SWCA, the BSA contains potential habitat for 26 special-status wildlife species, 41 special-status plants, and federally designated critical habitat for conservancy fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, and Contra Costa goldfields.[17] Biological resources evaluated include species addressed as Covered Species and Special Management Species in the Draft Solano MSHCP.[18] Special-status species with suitable habitat in the study area and a potential for occurrence in the project area are listed in Table 3.3-3 and discussed in the following section.

Table 3.3-3: Special-status Species and Natural Communities with Potential to Occur

Special-status Species	Common Name	Federal Status[1]	State Status and Other Codes[2]	Habitat Present/Species Observed
Invertebrates				
Branchinecta conservatio	Conservancy fairy shrimp	CH, E	–	Yes/No
Branchinecta lynchi	Vernal pool fairy shrimp	CH, T	–	Yes/Yes
Danaus plexippus plexippus	Monarch butterfly	C	–	Yes/No
Elaphrus viridis	Delta green ground beetle	CH, T	–	Yes/No
Hydrochara rickseckeri	Ricksecker's water scavenger beetle	–	–	Yes/No
Lepidurus packardi	Vernal pool tadpole shrimp	CH, E	–	Yes/No
Amphibians				
Ambystoma californiense	California tiger salamander, Central California DPS	CH, T	T,WL	Yes/No
Reptiles				
Emys marmorata	Western pond turtle	–	SSC	Yes/No
Birds				
Agelaius tricolor	Tricolored blackbird	–BCC	T,SSC	Yes/No

[16] SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation.
[17] SWCA Environmental Consultants (SWCA). 2022. Technical Memorandum. Biological Impacts and Proposed Mitigation Measures.
[18] Solano County Water Agency (SCWA). 2012. Draft Solano Multiple Species Habitat Conservation Plan.

Special-status Species	Common Name	Federal Status[1]	State Status and Other Codes[2]	Habitat Present/Species Observed
Ammodramus savannarum	Grasshopper sparrow	–	SSC	Yes/No
Aquila chrysaetos	Golden eagle	–	FP,WL	Yes/No
Asio flammenus	Short-eared owl	–BCC	SSC	Yes/No
Athene cunicularia	Burrowing owl	–BCC	SSC	Yes/No
Buteo swainsoni	Swainson's hawk	–	T	Yes/No
Circus hudsonius	Northern Harrier	–BCC	SSC	Yes/Yes
Charadrius montanus	Mountain plover	–BCC	SSC	Yes/No
Coturnicops noveboracensis	Yellow rail	–BCC	SSC	Yes/No
Elanus leucurus	White-tailed kite	–	FP	Yes/No
Lanius ludovicianus	Loggerhead shrike	–	SSC	Yes/Yes
Laterallus jamaicensis coturniculus	California black rail	–	T,FP	Yes/No
Melospiza melodia maxillaris	Suisun song sparrow	–	SSC	Yes/No
Xanthocephalus xanthocephalus	Yellow-headed blackbird	–	SSC	Yes/No
Nesting Birds (MBTA or California Fish and Game Code regulated)		–	–	Yes/Yes
Mammals				
Reithrodontomys raviventris	Salt marsh harvest mouse	E	E,FP	Yes/No
Sorex ornatus sinuosus	Suisan shrew	–	SSC	Yes/No
Taxidea taxus	American badger	–	SSC	Yes/No
Plants	**CNPS List**			
Astragalus tener var. ferrisiae	Ferris' milk vetch	–	–/1B.1	Yes/No
Astragalus tener var. tener	Alkali milk vetch	–	–/1B.2	Yes/No
Atriplex cordulata var. cordulata	Heartscale	–	–/1B.2	Yes/No
Atriplex depressa	Brittlescale	–	–/1B.2	Yes/No
Atriplex persistens	Vernal pool smallscale	–	–/1B.2	Yes/No
Blepharizonia plumosa	Big tarplant	–	–/1B.1	Yes/No
Carex lyngbyei	Lyngbye's sedge	–	–/2B.2	Yes/No
Centromadia parryi ssp. Congdonii	Congdon's tarplant	–	–/1B.1	Yes/No
Centromadia parryi ssp. Parryi	Pappose tarplant	–	–/1B.2	Yes/Yes

Special-status Species	Common Name	Federal Status[1]	State Status and Other Codes[2]	Habitat Present/Species Observed
Chloropyron molle ssp. Hispidum	Hispid salty bird's-beak	–	–/1B.1	Yes/No
Chloropyron molle ssp. Molle	Soft salty bird's-beak	CH, E	R/1B.2	Yes/No
Cicuta maculata var. bolanderi	Bolander's water-hemlock	–	–/2B.1	Yes/No
Cirsium hydrophilum var. hydrophilum	Suisun thistle	CH, E	–1B.1	Yes/No
Delphinium recurvatum	Recurved larkspur	–	–/1B.2	Yes/No
Downingia pusilla	Dwarf downingia	–	–/2B.2	Yes/No
Eryngium jepsonii	Jepson's coyote thistle	–	–/1B.2	Yes/No
Eschscholzia rhombipetala	Diamond-petaled California poppy	–	–/1B.1	Yes/No
Extriplex joaquinana	San Joaquin spearscale	–	–/1B.2	Yes/No
Gratiola heterosepala	Boggs Lake hedge-hyssop	–	E/1B.2	Yes/No
Hesperevax caulescens	Hogwallow starfish	–	–/4.2	Yes/No
Hibiscus lasiocarpos var. occidentalis	Woolly rose-mallow	–	–/1B.2	Yes/No
Isocoma arguta	Carquinez goldenbush	–	–/1B.1	Yes/No
Lasthenia chrysantha	Alkali-sink goldfields	–	–/1B.1	Yes/No
Lasthenia conjugens	Contra Costa goldfields	CH, E	–/1B.1	Yes/Yes
Lasthenia ferrisiae	Ferris' goldfields	–	–/4.2	Yes/No
Lasthenia glabrata ssp. coulteri	Coulter goldfields	–	–/1B.1	Yes/No
Lathyrus jepsonii var. jepsonii	Delta tule pea	–	–/1B.2	Yes/No
Legenere limosa	Legenere	–	–/1B.1	Yes/No
Lepidium latipes var. heckardii	Heckard's pepper-grass	–	–/1B.2	Yes/No
Madia radiata	Showy golden madia	–	–/1B.1	Yes/No
Microseris paludosa	Marsh microseris	–	–/1B.2	Yes/No
Navarretia leucocephala ssp. bakeri	Baker's navarretia	–	–/1B.1	Yes/No
Neostapfia colusana	Colusa grass	CH, T	E/1B.1	Yes/No
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	CH, T	E/1B.1	Yes/No
Plagiobothrys hystriculus	Bearded popcorn flower	–	–/1B.1	Yes/No

Special-status Species	Common Name	Federal Status[1]	State Status and Other Codes[2]	Habitat Present/Species Observed
Puccinellia simplex	California alkali grass	–	–/1B.2	Yes/No
Spergularia macrotheca var. longistyla	Long-styled sand-spurrey	–	–/1B.2	Yes/No
Stuckenia filiformis ssp. alpina	Slender-leaved pondweed	–	–/2B.2	Yes/No
Symphyotrichum lentum (syn. Aster lentus)	Suisun Marsh aster	–	–/1B.2	Yes/No
Trifolium hydrophilum	Saline clover	–	–/1B.2	Yes/Yes
Tuctoria mucronata	Solano grass	CH, E	E/1B.1	Yes/No

Notes:

[1] Listing Status: Federal status determined from USFWS letter. State status is determined from the CDFW. Codes used in table are: **E = Endangered; T = Threatened; P = Proposed; C = Candidate; R = California Rare; * = Possibly extinct**.

[2] Other Codes: Other codes determined from USFWS letter; CDFW. Codes used in table are as follows:
SSC = CDFW Species of Special Concern; **FP** = CDFW Fully Protected; **Prot** = CDFW Protected; **WL** = CDFW Watch List; **CH =** Critical Habitat Designated; **BCC** = USFWS Bird Species of Conservation Concern;

CNPS List (plants only): **1A** = Presumed Extinct in California; **1B** = Rare or Endangered (R/E) in California and elsewhere; **2** = R/E in California and more common elsewhere; **3** = Need more information; **4** = Plants of limited distribution;

CNPS List Decimal Extensions: .1 = Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat); **.2** = Fairly endangered in California (20–80 percent of occurrences threatened); **.3 =** Not very endangered in California (<20 percent of occurrences threatened or no current threats known).

Special-status Wildlife

Invertebrates

Conservancy fairy shrimp (*Branchinecta conservatio*)

Background: Conservancy fairy shrimp is federally listed as endangered. It typically inhabits relatively large and turbid vernal pools, often referred to as playa pools. Playa pools often remain inundated much longer than typical vernal pools and are typically greater than 200 feet in diameter. Conservancy fairy shrimp hatch out of tiny cysts within the soil during the first winter rains and complete their entire life cycle by early summer. Conservancy fairy shrimp have been observed at elevations ranging from 16 to 5,577 feet, and at water temperatures as high as 73°F. Hatching can begin within the same week that a pool starts to fill. Average time to maturity is 49 days. In warmer pools, it can be as little as 19 days.[19]

Conservancy fairy shrimp are endemic to vernal pools in California. Conservancy fairy shrimp are known from 10 populations: (1) Vina Plains, Butte and Tehama counties; (2) Sacramento National Wildlife Refuge, Glenn County; (3) Mariner Ranch, Placer County; (4) Yolo Bypass Wildlife Area, Yolo County; (5) Jepson Prairie, Solano County; (6) Mapes Ranch, Stanislaus County; (7) University of

[19] Department of the Interior. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants. 71 FR 7118 7316.Federal Register 71, no. 28. February 10, 2006.

California, Merced, Merced County; (8) the SR-165 area, Merced County; (9) Sandy Mush Road, Merced County; and (10) Los Padres National Forest, Ventura County.

Critical habitat for conservancy fairy shrimp was designated in 2006.[20] The study area contains federally designated critical habitat for conservancy fairy shrimp. The critical habitat occurs in the approximately the eastern half of the study area. The primary constituent elements (physical and biological features) essential for the species are: (1) Topographic features characterized by mounds and swales and depressions within a matrix of surrounding uplands that result in complexes of continuously, or intermittently, flowing surface water in the swales connecting the pools, providing for dispersal and promoting hydroperiods of adequate length in the pools; (2) Depressional features including isolated vernal pools with underlying restrictive soil layers that become inundated during winter rains and that continuously hold water for a minimum of 19 days, in all but the driest years (average time to maturity is 49 days); thereby providing adequate water for incubation, maturation, and reproduction. As these features are inundated on a seasonal basis, they do not promote the development of obligate wetland vegetation habitats typical of permanently flooded emergent wetlands, (3) Sources of food, expected to be detritus occurring in the pools, contributed by overland flow from the pools' watershed, or the results of biological processes within the pools themselves, such as single-celled bacteria, algae, and dead organic matter, to provide for feeding; and (4) Structure within the pools described above, consisting of organic and inorganic materials, such as living and dead plants from plant species adapted to seasonally inundated environments, rocks, and other inorganic debris that may be washed, blown, or otherwise transported into the pools, that provide shelter.

Potential for Occurrence: There are 13 CNDDB records of conservancy fairy shrimp within the nine-quad area surrounding the study area. The closest record (Occurrence No. 14) is approximately 0.9 mile south of the study area in the vicinity of the Potrero Hills Landfill. A total of six conservancy fairy shrimp were dip netted and released in the artificial drainage ditches connected to large vernal pools to the east. The drainage ditches were vegetated with *Salicornia* sp. and *Typha* sp.

The analysis in the Draft Solano MSHCP states that "conservancy fairy shrimp occur exclusively within large playa-type vernal pools in the valley grasslands and vernal pools natural community." The study area occurs in designated critical habitat for the species. SWCA determined that the deeper, more frequently inundated seasonal wetlands in the southern portion of the study area near SR-12 may provide suitable habitat for this species and that the physical and biological features identified as essential for the species in the critical habitat designation are generally absent or degraded in the northern two-thirds of the site.[21]

Because suitable habitat was found to be present, the applicant contracted with HBC to conduct both dry-season and wet-season large brachiopod surveys throughout the site during 2022 and 2023. No conservancy fairy shrimp were observed during the general biological surveys conducted by SWCA in 2021 or during both dry-season and wet-season surveys for large brachiopods conducted by HBC in 2022 and 2023. In addition, the applicant contracted with M&A to assess the roadside

[20] Department of the Interior. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants. 71 FR 7118 7316.Federal Register 71, no. 28. February 10, 2006.

[21] Solano County Water Agency (SCWA). 2012. Draft Solano Multiple Species Habitat Conservation Plan.

ditches along the northern boundary of Petersen Road. Based on a wet-season survey and a habitat assessment conducted in 2024, M&A determined the roadside ditches along Petersen Road are not suitable conservancy fairy shrimp habitat.

Conservancy fairy shrimp require pools that are inundated for at least 19 consecutive days, and an average of 49 days, or through June and into July. Within the study area, only the deeper, larger southernmost seasonal wetlands nearest to SR-12 potentially inundate for sufficient duration (southern portions of SW 31 and SW 48). Based on hydrology monitoring conducted in the winter and spring of 2021, and an evaluation of historic aerial photographs, inundation is rarely present in the seasonal wetlands in the northern two-thirds of the study area. The seasonal wetlands in the northern two-thirds of the study area are shallow and much smaller than the pools known to support the species. The population at Jepson Prairie (approximately 8.5 miles northeast of the study area) occurs in larger and long-inundated playa-type depressions that are not found in the study area.

Vernal pool fairy shrimp (*Branchinecta lynchi*)

Background: Vernal pool fairy shrimp is federally listed as threatened. They occur primarily in vernal pools, seasonal wetlands, and similar aquatic features that fill with water during fall and winter rains and dry up in spring and summer. They are most commonly found in small (less than 0.05 acre), clear to tea-colored vernal pools with mud, grass, or basalt bottoms in unplowed grasslands. When aquatic habitat dries, offspring persist as cysts (desiccation-resistant embryos) in the pool substrate until the return of winter rains and appropriate temperatures allow some of the cysts to hatch. Cysts require water temperatures of 50°F (degrees Fahrenheit) or lower to hatch. Vernal pool fairy shrimp have been found in pools with water temperatures between 40 and 73°F. Immature and adult shrimp perish when water temperatures rise to approximately 75°F. The vernal pool fairy shrimp can reach sexual maturity in as few as 18 days at optimal conditions of 68°F and can complete its life cycle in as little as 9 weeks. Although there are many observations of the environmental conditions where vernal pool fairy shrimp have been found, there have been no experimental studies investigating the specific habitat requirements of this species.

Vernal pool fairy shrimp are known to occur from Shasta County south through the Central Valley. They also occur in the Coast Range from Solano County south to San Benito County. Other populations are known from San Luis Obispo, Santa Barbara, and Riverside Counties and Jackson County of southern Oregon. Inhabited pools occur at elevations ranging from approximately 33 to 4,000 feet. However, some records close to the study area occur at approximately 22 feet elevation (e.g., CNDDB Occurrence No. 666).

Critical habitat for vernal pool fairy shrimp was designated in 2006.[22] The study area contains federally designated critical habitat for vernal pool fairy shrimp. The critical habitat occurs throughout the entire study area. The primary constituent elements (physical and biological features) essential for the species are: (1) Topographic features characterized by mounds and swales and depressions within a matrix of surrounding uplands that result in complexes of continuously, or

[22] Department of the Interior. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants. 71 FR 7118 7316.Federal Register 71, no. 28. February 10, 2006.

intermittently, flowing surface water in the swales connecting the pools described below, providing for dispersal and promoting hydroperiods of adequate length in the pools; (2) Depressional features including isolated vernal pools with underlying restrictive soil layers that become inundated during winter rains and that continuously hold water for a minimum of 18 days, in all but the driest years; thereby providing adequate water for incubation, maturation, and reproduction. As these features are inundated on a seasonal basis, they do not promote the development of obligate wetland vegetation habitats typical of permanently flooded emergent wetlands; (3) Sources of food, expected to be detritus occurring in the pools, contributed by overland flow from the pools' watershed, or the results of biological processes within the pools themselves, such as single-celled bacteria, algae, and dead organic matter, to provide for feeding; and (4) Structure within the pools described above, consisting of organic and inorganic materials, such as living and dead plants from plant species adapted to seasonally inundated environments, rocks, and other inorganic debris that may be washed, blown, or otherwise transported into the pools, that provide shelter.

Potential for Occurrence: There are 22 CNDDB records of vernal pool fairy shrimp within the nine-quad area surrounding the study area. The closest record (Occurrence No. 666) is approximately 0.96 mile northeast of the study area on the southwest side of Travis Air Force Base, 1.3 miles east of Walters Road and east of Suisun City. In 2008, hundreds of vernal pool fairy shrimp were found in the vernal pools near a rural residential neighborhood.

SWCA did not detect vernal pool fairy shrimp during reconnaissance surveys of the site, but they determined that the deeper, more frequently inundated seasonal wetlands at the site may provide suitable habitat for this species.[23] Based on hydrology monitoring conducted in the winter and spring of 2021, and inundation depths assessed on November 4, 2021, 10 days after a large storm delivered over 6 inches of precipitation to the area on October 24, 2021, SWCA concluded that the following seasonal wetlands contain sufficient inundation to provide potential habitat for vernal pool fairy shrimp: SW 01, SW 04, SW 08, SW 14, SW 18, SW 20, SW 24, SW 25, SW 27, SW 28, SW 30, SW 31 (southern portion), SW 32, SW 33, SW 34, SW 41, SW 42, SW 43, SW 48 (southern portion), and SW 49. Most of the seasonal wetlands in the northern two-thirds of the study area are swale-like and generally lack inundation even following storm events. The study area occurs in designated critical habitat for the species. The physical and biological features identified as essential for the species in the critical habitat designation are absent or degraded in the northern two-thirds of the site. Because suitable habitat was found to be present, the applicant contracted with HBC to conduct both dry-season and wet-season large brachiopod surveys throughout the site during 2022 and 2023. During dry-season surveys, HBC collected and analyzed soils from 77 habitats, and during wet-season surveys sampled 71 habitats using wet-season techniques. No cysts or other evidence of brachiopods were found during dry-season surveys, but wet-season surveys revealed the presence of vernal pool fairy shrimp at 25 locations within the project site. Vernal pool fairy shrimp were found in SW-2, SW-5, SW-7, SW-14, SW-15, SW-20, SW-22, SW-23, SW-25, SW-32, SW-33, SW-37, SW-41, SW-42, SW-53, SW-54, SW-56, SW-57, SW-58, SW-59, SW-60, HBC-9, HBC-13, HBC-14, and HBC-15, for a total of 1.15-acres. Refer to Exhibit 3.3-5 for the 25 locations of occupied vernal pool fairy shrimp. In addition, the applicant contracted with M&A to assess the roadside ditches along the northern boundary of Petersen Road. Based on wet-season survey and a habitat assessment

[23] SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation.

conducted in 2024, M&A determined the roadside ditches along Petersen Road are not suitable vernal pool fairy shrimp habitat.

Monarch butterfly (*Danaus plexippus plexippus*)

Background: Monarch butterfly is a candidate for federal listing. Preferred monarch habitat is filled with diverse nectar sources which support monarchs and native bees. Native milkweeds (*Asclepias* sp.) and other nectar sources provide monarchs with breeding habitat, resting, and refueling stops during migration, and food at the overwintering sites. Overwintering habitats consist of tree groves that typically occur within 1.5 miles of the Pacific coastline, or within the San Francisco Bay Area, where the proximity to large water bodies moderates temperature fluctuations. Suitable grove conditions include temperatures above freezing, high humidity, dappled sunlight, access to water and nectar, and protection from high winds and storms. Monarchs will select the native Monterey pine, Monterey cypress, western sycamore, and other native tree species when they are available, but will also utilize non-native eucalyptus species if other optimal habitat conditions are met. During breeding season in the late spring and summer, female monarch butterflies will lay their eggs on the underside of young leaves or flower buds of milkweeds, caterpillars then hatch within 3-5 days and begin to feed on milkweed leaves that provide energy and protective toxic compounds that protect the caterpillars from predation. Within a month, the caterpillars will grow, produce a chrysalis, and emerge as fully formed adult butterflies.

The western population of the monarch butterfly typically breeds and forages west of the Rocky Mountains in the spring and summer, and then migrates to the wooded groves along the California coast in the late summer and fall to their generational overwintering sites. Western monarchs typically reach their overwintering sites in coastal California and Baja California in September and October and remain there until early spring.

Potential for Occurrence: There is 1 CNDDB record of monarch butterfly within the nine-quad area surrounding the BSA. The record (Occurrence No. 23) is from 1979, approximately 4 miles west of the BSA on the west side of Fairfield. Monarchs were overwintering in a row of eucalyptus trees. Monarch butterflies are known to occur in the vicinity and would be expected to forage in and migrate through the area on their way to coastal overwintering habitat.

No monarch butterflies of any life stage were observed in the BSA during biological surveys. A few stunted narrow-leaf milkweed plants (*Asclepias fascicularis)* were observed in the disked valley floor grassland. The plants are unlikely to provide sufficient food resources to support larval development and metamorphosis. No overwintering habitat occurs in the BSA. There is no shelter from high winds that frequent the area.

Delta green ground beetle (*Elaphrus viridis*)

Background: Delta green ground beetle is federally listed as threatened. It was formally known only from a single museum specimen until the species was rediscovered in the wild in 1974, at the Jepson Prairie in Solano County, California. Much about its life cycle and habitat affinities remains unknown. Adults emerge from a period of dormancy or delayed development and females lay their eggs in early winter. Active adults reappear the following winter. As vernal pool habitats become dry, the beetle larvae crawl into cracks in the soil, and survive the hot, dry summer and fall as diapausing

pupae. The beetle is typically found along the margins of vernal pools and in bare areas along trails and roadsides, where individuals often hide in cracks in the mud and under low-growing vegetation. The habitat characteristics most strongly associated with the beetle's presence include *Navarretia* cover, proximity to water, *Frankenia* cover, *Downingia* cover, soil type, and cracks in the soil. All known delta green ground beetle occurrences occur near the Jepson Prairie Preserve in the Solano-Colusa vernal pool region.

Critical habitat for delta green ground beetle was designated in 1980.[24] The BSA does not contain federally designated critical habitat for delta green ground beetle. The nearest critical habitat occurs approximately 8.4 miles northeast.

Potential for Occurrence: There are 7 CNDDB records of delta green ground beetle within the nine-quad area surrounding the BSA. The closest record (Occurrence No. 7) is approximately 4.1 miles northeast of the BSA, about 0.36 mile east of Travis Air Force Base. The record is for a number of delta green ground beetles observed on the edges of vernal pools in 2002.

The deeper, more frequently inundated seasonal wetlands in the southern portion of the BSA near SR-12 and adjacent uplands may provide suitable habitat for this species, but no potential delta green ground beetle individuals were observed during the general biological surveys in 2021. Within the BSA, only the deeper, larger southernmost seasonal wetlands nearest to SR-12 (southern portions of SW 31 and SW 48) and adjacent uplands provide potential suitable habitat. The analysis in the Draft Solano MSHCP states that "delta green ground beetles occur exclusively along the edges of large vernal pools in the Valley Floor Grasslands and Vernal Pools Natural Community." Based on hydrology monitoring conducted in the winter and spring of 2021, and an evaluation of historic aerial photographs, inundation is rarely present in the seasonal wetlands in the northern two-thirds of the BSA. The seasonal wetlands in the northern two-thirds of the BSA are shallow and much smaller than the pools known to support the species. The population at Jepson Prairie (approximately 8.5 miles northeast of the BSA) occurs in larger and long-inundated playa-type depressions that are not found in the BSA.

In 2007, species expert Richard Arnold, PhD, conducted a habitat assessment for delta green ground beetle on the land immediately west of the BSA (the Walmart site west of Walters Road). Conditions on that site were similar to those within the BSA, with valley floor grassland and shallow seasonal wetlands. The assessment examined vegetation and soils, particularly the extent of Pescadero clay soils and wetlands on that soil type. The assessment concluded that the property did not support suitable habitat for the beetle, and the beetle was unlikely to occur.

Pescadero clay soils occur only along the southern edge of the BSA, and to a lesser extent than the site located immediately west of the BSA. No *Navarretia* (*Navarettia* spp.) plants were observed in the BSA during protocol botanical surveys. Only a few *Downingia* (*Downingia concolor* var. *concolor*) plants were observed. *Frankenia salina* is fairly abundant in the southern portion of the BSA in the alkali meadow and seasonal wetlands located in the alkali meadow, and absent or very uncommon in the valley floor grassland. Similar to the site to the west, there is no suitable habitat for the delta

[24] Department of the Interior. Reproposal of Critical Habitat for the Delta Green Ground Beetle. 45 FR 52807 52810. Federal Register 45, no. 155. August 8, 1980.

green ground beetle in the northern two-thirds of the BSA. It is unknown if the larger pools at the southern end of SW 31 and SW 48 provide potential habitat for the beetle. Suitability of those pools may be constrained by saline influence, high water table, and other factors. The limited extent of potential habitat and distance to the known and highly restricted range of the beetle make it unlikely that delta green ground beetle would occur in the BSA.

Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*)

Background: Ricksecker's water scavenger beetle (RWSB) depends on vernal pool wetland ecosystems. They require seasonally inundated vernal pools and depressional wetlands that remain inundated for a minimum of 18 days in all but the driest years. Collection records suggest that the RWSB is not sensitive to the size of vernal pools or other aquatic habitats, and primarily utilizes vernal pools and swales, seasonal wetlands, and other ephemeral habitats, as well as constructed vernal pools. Larvae are predatory, indiscriminately attacking and consuming prey equal or smaller in size, including other insects, crustaceans, amphibian larvae, and conspecific larvae. Adults are omnivorous and feed on common frog-fruit (*Phyla nodiflora*), and dead insects and tadpoles. Early instar larvae appear in pools 3 to 4 weeks after the first inundation. When temperatures begin to rise (typically March) the late instar larvae leave the pool and construct a burrow in the adjacent uplands, typically where the soil is slightly moist, and pupate therein. Pupation lasts 2 to 4 days. Following pupation, adults emerge and fly to a different vernal pool to mate. Oviposition is thought to occur at the water surface, in vegetation.

This species was originally described as endemic to the San Francisco Bay region, but recent collections have been made in Solano County and from vernal pools in Sacramento and Placer Counties. In the Central Valley suitable habitat occurs below 980 feet.

Potential for Occurrence: There are 3 CNDDB records for RWSB in the nine-quad area centered on the BSA. The closest record (Occurrence No. 13) is located about 4.3 miles northeast of the BSA, along the north side of Travis Air Force Base. The record is based on 10 adults and numerous larvae observed in linear vernal pools and seasonal wetlands along the Sacramento Northern Railroad right-of-way, between Meridian Road and SR-113.

The valley floor grassland, seasonal wetlands, and alkali meadow provide potential habitat for RWSB, but no RWSB individuals were observed during biological surveys. Habitat quality is low in the northern portion of the BSA subject to dryland farming. Few of the seasonal wetlands in the northern portion of the BSA provide inundation of sufficient duration for reproduction. Only the deeper seasonal wetlands potentially inundate for duration sufficient for reproduction. Based on hydrology monitoring conducted in the winter and spring of 2021, and inundation depths assessed on November 4, 2021, 10 days after a large storm delivered over 6 inches of precipitation to the area on October 24, 2021, the following seasonal wetlands contain sufficient inundation to provide potential breeding habitat for RWSB: SW 01, SW 04, SW 08, SW 14, SW 18, SW 20, SW 24, SW 25, SW 27, SW 28, SW 30, SW 31 (southern portion), SW 32, SW 33, SW 34, SW 41, SW 42, SW 43, SW 48 (southern portion), and SW 49. Most of the seasonal wetlands in the northern two-thirds of the BSA are swale-like and generally lack inundation even following storm events. No frog-fruit plants were observed in the BSA. Suitability of pools in the BSA may be further constrained by saline influence,

high water table, and other factors. RWSB could occur in the BSA, but the likelihood is low, especially in the northern portion of the BSA.

Vernal pool tadpole shrimp (*Lepidurus packardi*)

Background: Vernal pool tadpole shrimp is federally listed as endangered. They are known to inhabit a wide variety of vernal pool habitats. Their diet consists of organic debris and living organisms, such as fairy shrimp and other invertebrates. This species has been collected in vernal pools ranging from 6.5 square feet to 88 acres in size. Some of these vernal pools may be too small to remain inundated for the entire life cycle, but the vernal pool tadpole shrimp may be able tolerate temporary drying conditions. Vernal pool tadpole shrimp have been found in pools with water temperatures ranging from 50 to 84° F. After winter rains fill their vernal pool habitats, dormant vernal pool tadpole shrimp cysts may hatch in as little as 4 days. Vernal pool tadpole shrimp generally take 3 to 4 weeks to mature. Additional cysts produced by adult tadpole shrimp during the wet season may hatch without going through a dormant period.

Vernal pool tadpole shrimp are known from Shasta County to Tulare County, California, from elevations between approximately 10 and 500 feet.

Critical habitat for vernal pool tadpole shrimp was designated in 2006.[25] The BSA contains federally designated critical habitat for vernal pool tadpole shrimp. The critical habitat occurs throughout the entire BSA. The primary constituent elements (physical and biological features) essential for the species are: (1) Topographic features characterized by mounds and swales and depressions within a matrix of surrounding uplands that result in complexes of continuously, or intermittently, flowing surface water in the swales connecting the pools described below, providing for dispersal and promoting hydroperiods of adequate length in the pools; (2) Depressional features including isolated vernal pools with underlying restrictive soil layers that become inundated during winter rains and that continuously hold water for a minimum of 41 days, in all but the driest years; thereby providing adequate water for incubation, maturation, and reproduction. As these depressional features are inundated on a seasonal basis, they do not promote the development of obligate wetland vegetation habitats typical of permanently flooded emergent wetlands; (3) Sources of food, expected to be detritus occurring in the pools, contributed by overland flow from the pools' watershed, or the results of biological processes within the pools themselves, such as single-celled bacteria, algae, and dead organic matter, to provide for feeding; and (4) Structure within the pools described above, consisting of organic and inorganic materials, such as living and dead plants from plant species adapted to seasonally inundated environments, rocks, and other inorganic debris that may be washed, blown, or otherwise transported into the pools, that provide shelter.

Potential for Occurrence: There are 26 CNDDB records of vernal pool tadpole shrimp within the nine-quad area surrounding the BSA. The closest record (Occurrence No. 97) is approximately 0.9 mile south of the BSA near the Potrero Hills Landfill, around 0.25 miles south of SR-12 at Scally Lane. Vernal pool tadpole shrimp were detected in ditches around the landfill site in 2011. The drainage

[25] Department of the Interior. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants. 71 FR 7118 7316. Federal Register 71, no. 28. February 10, 2006.

ditches were connected to large vernal pools to the east and vegetated with *Salicornia* sp. and *Typha* sp.

SWCA did not detect vernal pool tadpole shrimp during reconnaissance surveys of the site, but they determined that the deeper, more frequently inundated seasonal wetlands may provide suitable habitat for this species. Based on hydrology monitoring conducted in the winter and spring of 2021, and inundation depths assessed on November 4, 2021, 10 days after a large storm delivered over 6 inches of precipitation to the area on October 24, 2021, the following seasonal wetlands contain sufficient inundation to provide potential habitat for vernal pool fairy shrimp: SW 01, SW 04, SW 08, SW 14, SW 18, SW 20, SW 24, SW 25, SW 27, SW 28, SW 30, SW 31 (southern portion), SW 32, SW 33, SW 34, SW 41, SW 42, SW 43, SW 48 (southern portion), and SW 49. Most of the seasonal wetlands in the northern two-thirds of the BSA are swale-like and generally lack inundation even following storm events. The physical and biological features identified as essential for the species in the critical habitat designation are absent or degraded in the northern two-thirds of the site.

Because suitable habitat was found to be present, the applicant contracted with HBC to conduct both dry-season and wet-season large brachiopod surveys throughout the site during 2022 and 2023; no vernal pool tadpole shrimp were observed. In addition, the applicant contracted with M&A to assess the roadside ditches along the northern boundary of Petersen Road. Based on wet-season survey and a habitat assessment conducted in 2024, M&A determined the roadside ditches along Petersen Road are not suitable vernal pool tadpole shrimp habitat.

Amphibians

California tiger salamander (*Ambystoma californiense*)

Background: California tiger salamander (CTS) is State-listed as threatened and the Central Valley Distinct Population Segment (DPS) is federally listed as threatened. CTS primarily inhabits annual grasslands, open woodlands, and requires upland habitat that is occupied by small burrowing mammals such as California ground squirrel (*Otospermophilus beecheyi*) and Botta's pocket gopher (*Thomomys bottae*) in order to create underground burrow systems utilized by the salamanders throughout the year. Upland habitats surrounding known CTS breeding pools are usually dominated by grassland, oak savanna, or oak woodland. Although CTS is adapted to breeding in natural vernal pools and ponds, it now frequently uses livestock ponds and other modified ephemeral and permanent ponds. CTS larvae typically feed on invertebrate prey while adults prey on tadpoles, fish, and frogs.

The species is known from sites on the Central Valley floor near sea level, up to a maximum elevation of roughly 3,940 feet in the Coast Ranges and 1,640 feet in the Sierra Nevada foothills. CTS occurs in the following counties: Alameda, Amador, Calaveras, Contra Costa, Fresno, Kern, Kings, Madera, Mariposa, Merced, Monterey, Sacramento, San Benito, San Mateo, San Joaquin, San Luis Obispo, Santa Clara, Santa Cruz, Stanislaus, Solano, Tulare, Tuolumne, and Yolo.

Critical habitat for CTS was designated in 2011.[26] The BSA does not contain federally designated critical habitat for CTS. The nearest critical habitat occurs approximately 6.5 miles to the northeast.

Although the larvae of CTS develop in the vernal pools and ponds in which they are born, they are otherwise terrestrial salamanders and spend most of their post-metamorphic lives in widely dispersed underground retreats. Subadult and adult CTS spend the dry summer and fall months of the year in upland refugia such as the burrows of small mammals, like California ground squirrels and Botta's pocket gopher, or other landscape features such as leaf litter or desiccation cracks in the soil. The upland burrows inhabited by CTS have often been referred to as "aestivation'' sites or as "upland habitat."

Once fall or winter rains begin, the salamanders emerge from the upland sites on rainy nights to feed and to migrate to the breeding ponds. Adult salamanders mate in the breeding ponds, after which the females lay their eggs in the water. Historically, CTS utilized vernal pools, but the animals also currently breed in livestock stock ponds. After breeding, adults leave the pool and return to the small mammal burrows, although they may continue to come out nightly for approximately the next two weeks to feed. In drought years, the seasonal pools may not form, and the adults cannot breed.

Dispersal and migration movements made by CTS can be grouped into two main categories: (1) breeding migration and (2) inter-pond dispersal. Breeding migration is the movement of salamanders to and from a pond from the surrounding upland habitat. After metamorphosis, juveniles move away from breeding ponds into the surrounding uplands, where they live continuously for several years. CTS are known to travel large distances from breeding sites into upland habitats and in Santa Barbara County have been recorded to disperse 1.3 miles from breeding ponds. In addition to traveling long distances during migration to, or dispersal from, ponds, California tiger salamanders may reside in burrows that are far from ponds. Although CTS can travel far, typically they stay closer to breeding ponds, and evidence suggests that juveniles disperse further into upland habitats than adults.

Potential for Occurrence: There are 39 CNDDB records of CTS within the nine-quad area surrounding the BSA. The closest record (Occurrence No. 1195) is approximately 1.7 miles southeast of the BSA at the Potrero Hills Landfill, 1.3 miles south of SR-12. The record is from an observation of 50 egg masses in a pond in 2017. The record is one of six total records clustered around the landfill, all within a 0.5-mile radius. The next nearest record (Occurrence No. 1181) is approximately 2.5 miles east of the BSA about 1.1 miles northeast of SR-12 at Nurse Slough Road. Two juveniles were observed in vernal pools and swales surrounded by grasslands in 2010.

Dr. Jaymee Marty conducted CTS studies within Travis Air Force Base and documented breeding ponds there. Dr. Marty also conducted trapping studies since 2017 revealing breeding ponds adjacent to the immediate south of the Air Force Base property. Several adults were found in pit fall traps adjacent to a large scrape/pool located along Branscombe Road, approximately 1.3 miles east of the BSA.

26 Department of the Interior. Revised Designation of Critical Habitat for the Sonoma County Distinct Population Segment of California Tiger Salamander. 76 FR 54346 54372. Federal Register 76, no. 169. August 31, 2011.

SWCA assessed the potential for CTS presence on the project site, but results were inconclusive. No potential CTS individuals of any life stage were observed during the general biological surveys conducted by SWCA in 2021 or during the 2023 wet-season branchiopod survey conducted by HBC. During their preliminary review of the BSA, SWCA concluded that the southernmost seasonal wetland between drainage ditches DD-01 and DD-02 provides potentially suitable breeding habitat for CTS.[27] Based on hydrology monitoring and aerial photograph review conducted as part of the wetland delineation, other aquatic features present within the BSA do not inundate for sufficient durations to provide suitable breeding habitat, even in wet years. The coastal brackish marsh (a habitat in which CTS are not known to occur) also contains predatory fish and would not support CTS. Outside of the BSA, SWCA found the nearest potentially suitable breeding habitat within 1.24 miles consists of (1) a seasonally inundated detention basin located 0.24 mile northeast of the BSA, adjacent and north of Petersen Road, adjacent to athletic fields and, (2) a seasonally inundated pool located approximately 0.26 mile east of the brackish marsh at the southern tip of the BSA. Based on historic aerial photographs, both aquatic features remain inundated through May or June in at least some years. There are no known records of CTS in these features, but known recent records do occur within dispersal distance (populations documented by Jaymee Marty south of the Air Force Base). SWCA found no California ground squirrel burrows within the BSA and determined that refugial burrows for CTS were in low abundance. SWCA found that all portions of the BSA are located within dispersal distance (1.24 miles) of potential CTS breeding habitat but that habitat in the BSA is marginal due to ongoing disking and dryland farming and potential salinity tolerance limits (especially in the southern portion of the BSA). They found that CTS may be potentially present within the BSA, but the likelihood of occurrence is low.

Because results of the preliminary review for CTS conducted by SWCA as part of the BRE were inconclusive, the applicant contracted with HBC (CTS species experts) to conduct a formal CTS Habitat Assessment pursuant to agency protocol. The purpose of the assessment was to confirm the potential presence or absence of suitable breeding, refugial, or dispersal habitat for CTS in the project area. The Habitat Assessment prepared by HBC followed USFWS and CDFW Interim Guidance on Conducting Site Assessments and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander (September 2003). The Habitat Assessment report is included in Appendix C along with other supporting biological technical documents. Findings of the report are summarized below.

Contrary to the preliminary findings of SWCA, the more detailed analysis conducted by HBC found that the project site does not support CTS breeding habitat. Consistent with SWCA, HBC found that the upland habitat occurring on-site is of low quality due to limited burrows, lack of California ground squirrels, and decades of incompatible farming practices (e.g., land leveling, irrigation, disking, etc.). Dispersal within the project site is further restricted by the two drainage ditches that bisect the project site in north–south direction and support CTS predators. Occurring roughly 75 percent of the length near the southern portion of the project site, there is only one spot along each of the two ditches that CTS could use to pass over the ditches. However, these passages are very narrow and therefore not likely to be used by CTS.

[27] SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation.

Potential breeding habitat and dispersal habitats occur within the vicinity of the project site; however, the likelihood of a CTS occurring on the site itself is very low. Potential dispersal to the project site by CTS is limited due to high constraints of vehicle use along SR-12 that bounds the southern portion of the project site and the dense urban housing developments in the west and northwest portion of the study area restricting entrance from these directions. The northeast corner of the study area, which has been part of Travis Airforce Base, has been subject to many years of rodenticide application, and therefore fossorial mammals, as well as their burrows, are extremely limited in the vicinity. The southwest corner of the study area consists mostly of tidal marsh lands which support CTS predators. The area to the east of the project site consists of tall, dense vegetation with numerous ditches and waterways that support CTS predators, thus severely limiting CTS access to the project site from the east. Because of the lack of breeding, refugial, and dispersal habitat on the site and barriers to movement of CTS onto the site from habitats located in the project vicinity, use of the site by CTS is extremely unlikely.

In addition, the applicant contracted with M&A to assess the roadside ditches along the northern boundary of Petersen Road. Based on the CTS habitat assessment conducted in 2024, M&A determined the roadside ditches along Petersen Road are not suitable CTS breeding habitat.

Reptiles

Western pond turtle (*Emys marmorata*)

Background: western pond turtle (WPT) is a CDFW Species of Special Concern. WPT prefer aquatic habitats with abundant vegetative cover and exposed basking sites such as logs. WPT are associated with permanent or nearly permanent water in a wide variety of habitat types, normally in ponds, lakes, streams, irrigation ditches, or permanent pools along intermittent streams. They are omnivorous generalists and opportunistic predators that prey upon small insects, aquatic invertebrates, fish, frogs, snakes, and small mammals. They also eat aquatic plant material and carrion.

Two distinct habitats may be used for oviposition. Along large, slow-moving streams, eggs are deposited in nests constructed in sandy banks. Along foothill streams, females may climb hillsides, sometimes traveling over 330 feet to find a suitable nest site. Soil must usually be at least 4 inches deep for nesting. Generally, 3 to 11 eggs are laid from March to August depending on local conditions and are incubated for approximately 73 to 80 days.

WPT occur throughout Northern California west of the Sierra Nevada from sea level to 6,000 feet.

Potential for Occurrence: There are 14 CNDDB records of WPT within the nine-quad area surrounding the BSA. The closest record (Occurrence No. 780) is approximately 3.5 miles northeast of the BSA, northwest of the intersection of Diablo Road and Valley View Way near Travis Air Force Base. In 2008, 1 turtle was observed in a seasonal pond surrounded by scattered willows (*Salix* sp.) and cottonwoods (*Populus* sp.).

No potential WPT individuals of any life stage were observed during the general biological surveys. Drainage Ditch DD-01 and the coastal brackish marsh provide potentially suitable habitat for WPT, and WPT could occur in DD-01 and the coastal brackish marsh. Habitat in these two features is

marginal due to shallow water depth (estimated to be around 1-12 inches; potentially up to 24 inches in a few spots), and due to the high density of freshwater and brackish marsh vegetation, which would make it difficult for a turtle to move through or forage in these features. The grasslands within the project site may provide marginally suitable upland or nesting habitat for the species. No WPT nesting would be expected in the BSA due to a lack of sufficient suitable aquatic habitat, and the hard silty-clayey soils that occur throughout the BSA. Because of the presence of marginal habitat on the project site, this species has a low to moderate potential to occur on the project site.

Birds

Tricolored blackbird (*Agelaius tricolor*)

Background: Tricolored blackbird is a State-listed threatened species and a USFWS Bird Species of Conservation Concern. Tricolored blackbirds form the largest breeding colonies of any North American inland bird species. Colonies vary in size from a minimum of about 50 nests to over 20,000 in an area of 10 acres or less. Nesting colonies are of concern to CDFW.

Basic breeding site requirements are open, accessible water; a protected nesting substrate, including either flooded, thorny, or spiny vegetation; and a suitable foraging space providing adequate insect prey within a few kilometers of the nesting colony. Since the 1970s, an increasing percentage of colonies have been reported in Himalayan blackberry and thistles, with some of the largest colonies in silage and grain fields near dairies in the San Joaquin Valley. Other less commonly used nesting vegetation include safflower, tamarisk, elderberry, western poison oak, giant reed, riparian scrublands, and riparian forests.

Ideal foraging conditions for this species are created when shallow flood irrigation, mowing, or grazing keeps the vegetation less than 6 inches tall. Preferred foraging habitats include crops such as rice, alfalfa, irrigated pastures, and ripening or cut grain fields, as well as annual grasslands, cattle feedlots, and dairies. Tricolored blackbirds also forage in native habitats, including wet and dry vernal pools and other seasonal wetlands, riparian scrub habitats, and open marsh borders. Proximity to suitable foraging habitat appears important for the establishment of colony sites.

In California, tricolored blackbird breeds in the Sacramento and San Joaquin valleys, the foothills of the Sierra Nevada south to Kern County, the coastal slope from Sonoma County south to the Mexican border, and sporadically on the Modoc Plateau. Individuals usually move north after first nesting efforts (March-April) in the San Joaquin Valley and Sacramento County to new breeding locations in the Sacramento Valley, northeastern California, and rarely Oregon, Nevada, and Washington.

Potential for Occurrence: There are 12 CNDDB records of tricolored blackbird within the nine-quad area surrounding the BSA. The closest record (Occurrence No. 837) is approximately 1.4 miles south of the BSA 0.3 mile southwest of Potrero Hills Landfill and Emmington Road intersection. Approximately 1,000 birds were observed on a hillside above Landfill Access Road in dense thistle and mustard patches in 2011. The birds were foraging in the Hill Slough area and over onto the landfill. Surrounding vegetation included cattails, mustard, and thistle.

Drainage Ditch DD-01 and the coastal brackish marsh provide potentially suitable habitat for nesting for tricolored blackbird. Tricolored blackbird could forage in the uplands and seasonal wetlands.

No tricolored blackbird or potential tricolored blackbird nests were observed during the general biological surveys. Tricolored blackbird could nest in DD-01 and the coastal brackish marsh. These aquatic habitats contain dense patches of bulrush (*Schoenoplectus* sp.) and cattail (*Typha* sp.) vegetation. Habitat in these two features is marginal due to the limited extent and/or width of marsh vegetation, which may not provide adequate refuge and concealment for a nesting colony. DD-01 is bordered on both sides by tall chain-link fence. The coastal brackish marsh is located immediately adjacent to SR-12. The valley floor grassland, alkali meadow, and seasonal wetland provide suitable foraging habitat for tricolored blackbird. There are no known nesting colonies in or near the BSA.

Grasshopper sparrow (*Ammodramus savannarum*)

Background: Grasshopper sparrow is a CDFW Species of Special Concern. Nesting habitat is of concern to CDFW (2023). Grasshopper sparrow occurs in California primarily as a summer resident from March to September. This species generally prefers short to middle-height, moderately open grasslands with scattered shrubs, and in some cases prefers native bunchgrasses. These sparrows are generally absent from areas with extensive shrub cover, though some shrubbery is tolerated and perhaps preferred. Patchy bare ground has also been noted as an important habitat component elsewhere. Grasshopper sparrows are more likely to be found in large tracts of habitat than in small ones.

Grasshopper sparrows breed from early April to mid-July, with a peak in May and June. A thick cover of grasses and forbs is essential for concealment. Pairs generally nest solitarily and build a nest of grasses and forbs in a slight depression in the ground, hidden at the base of an overhanging clump of grasses or forbs. They search for food on the ground and in low foliage within relatively dense grasslands.

In California, grasshopper sparrow is an uncommon and local, summer resident and breeder in foothills and lowlands west of the Cascade-Sierra Nevada crest from Mendocino and Trinity counties south to San Diego County. They breed very locally, primarily at the edges and in low foothills, but also very sparingly on the valley floor.

Potential for Occurrence: There is 1 CNDDB record of grasshopper sparrow within the nine-quad area surrounding the BSA. The record (Occurrence No. 27) is approximately 7.5 miles northeast of the BSA, east of Box Ranch Road. A total of three males were detected in grassland and seasonal wetlands surrounded by agricultural lands in 2017. There are no reports of grasshopper sparrow in the immediate vicinity of the project site on eBird.

The valley floor grassland and alkali meadow provide potential nesting habitat for grasshopper sparrow. The valley floor grassland, alkali meadow, and seasonal wetland provide suitable foraging habitat.

No grasshopper sparrows or potential grasshopper sparrow nests were observed during the general biological surveys. Grasshopper sparrow could nest in the BSA, however, seasonal disking and harvesting in the farmed area may preclude nesting in that portion of the property.

Golden eagle (*Aquila chrysaetos*)

Background: Golden eagle is a California Fully Protected Species. Golden eagles are generally found in open country of prairies, arctic and alpine tundra, open wooded country, and barren areas, especially in hilly or mountainous regions. Golden eagles need open terrain for hunting such as grasslands, deserts, savannas, and early successional stages of forest and shrub habitats. Golden eagles use secluded cliffs with overhanging ledges and large trees for cover. Golden eagles nest on cliffs of all heights and in large trees in rugged, open areas with canyons and escarpments. Alternative nest sites are maintained, and old nests are reused. Golden eagles breed from late January through August with a peak from March through July. Nesting and nonbreeding/wintering sites are of concern to CDFW.

Golden eagles are an uncommon permanent resident and migrant throughout California, except the center of the Central Valley. This species is perhaps more common in Southern California than in the north. Golden eagles range from sea level to 11,500 feet.

Potential for Occurrence: There is 1 CNDDB record of golden eagle within the nine-quad area surrounding the BSA. The record (Occurrence No. 142) is from 2015, approximately 9 miles southwest of the BSA, along the hills south of Cordelia. The record is for golden eagles that were observed taking a rabbit. eBird data shows a small number of golden eagles foraging near the project area in winter.

No potential nesting habitat occurs in the BSA or nearby. The valley floor grassland, alkali meadow, coastal brackish marsh, freshwater marsh, and seasonal wetland provide suitable foraging habitat.

No golden eagles or potential raptor nests were observed during the general biological surveys. The entire BSA provides potential foraging habitat. Golden eagles may sometimes forage in the BSA.

Short-eared owl (*Asio flammenus*)

Background: Short-eared owl is a CDFW Species of Special Concern and USFWS Bird Species of Conservation Concern. Nesting sites are of concern to CDFW. Short-eared owl requires areas with dense vegetation. Tall grasses, brush, ditches, and wetlands are used for resting and roosting cover. Habitat components for short-eared owl generally include large areas with low vegetation, dry upland areas for nesting, and sufficient suitable prey base. Approximately 99 percent of the diet of short-eared owl is composed of small mammals. Short-eared owl nests on dry ground in a depression concealed in vegetation, and lined with grasses, forbs, sticks, and feathers; occasionally nests in a burrow. Nearby water may be a requirement for nesting habitat. The breeding season occurs from March through July.[28]

[28] Shuford and Gardall, editors. 2008. California Bird Species of Special Concern A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California.

Small resident populations occur in the Great Basin region and locally in the Sacramento-San Joaquin River Delta. This species occasionally breeds along coastal central California and in the San Joaquin Valley.

In Solano County, the Grizzly Island Wildlife Area in the Suisun Marsh supports the only resident population of short-eared owls in this region. Management to provide habitat and prey annually has resulted in a few resident owls at Grizzly Island ever since, and large numbers in some years.

Potential for Occurrence: There is 1 CNDDB record of short-eared owl within the nine-quad area surrounding the BSA. The record (Occurrence No. 12) is approximately 3.7 miles south of the BSA in Grizzly Island Wildlife Area. The occurrence was recorded in 1987 where the observed owls were found in coastal marsh and flat grassland habitat. The nearest eBird reports of short-eared owl are from Creed Road and Hill Slough.

The valley floor grassland and alkali meadow provide potential nesting habitat for short-eared owl. The valley floor grassland, alkali meadow, coastal brackish marsh, and seasonal wetland provide suitable foraging habitat.

No short-eared owls or potential short-eared owl nests were observed during the general biological surveys. Short-eared owls could nest in the BSA, however, seasonal disking and harvesting in the farmed area may preclude nesting in that portion of the property. Vegetation in the grassland, meadow, and wetland communities is typically no more than 6-12 inches tall and thus may not provide adequate nest concealment. The potential for nesting in the BSA is low.

Burrowing owl (Athene cunicularia)

Background: Burrowing owl is a CDFW Species of Special Concern and USFWS Bird Species of Conservation Concern. Nesting sites are of concern to CDFW. Burrowing owls primarily inhabit open, dry grassland and desert habitats, such as grasses, forbs, and open shrub stages of pinyon-juniper and ponderosa pine habitats. Main habitat components include burrows for roosting and nesting, and relatively short vegetation with sparse shrubs and taller vegetation. Burrowing owls most commonly use ground squirrel burrows, but they may also use badger, coyote, and fox holes or dens; or human-made structures such as culverts, piles of concrete rubble, pipes and nest boxes. An active nest chamber is often lined with excrement, pellets, debris, grass and feathers. This species also thrives in highly altered human landscapes. In agricultural areas, owls nest along roadsides, under water conveyance structures, and near and under runways and similar structures. In urban areas, burrowing owls persist in low numbers in highly developed parcels, busy urban parks, and adjacent to roads with heavy traffic. In the Imperial Valley, owls are able to excavate their own burrows in soft earthen banks of ditches and canals.

Burrowing owls are a semi-colonial species that breed in California from March through August, though breeding can begin as early as February and extend into December. A large proportion of adults show strong nest site fidelity. Burrowing owls typically feed on a broad range of insects, but also on small rodents, birds, amphibians, reptiles, and carrion. Foraging usually occurs close to their burrow. Burrowing owls are a year-round resident in most of California, particularly in the Central Valley, San Francisco Bay region, Carrizo Plain, and Imperial Valley.

Potential for Occurrence: There are 42 CNDDB records of burrowing owl within the nine-quad area surrounding the BSA. The closest record (Occurrence No. 1) is from 1992, approximately 1 mile south of the BSA on the west side of Potrero Hills Lane. A single bird was observed in a rubble pile composed of concrete blocks in disked annual grassland habitat. There is a recent (April 2023) eBird report of burrowing owl just across SR-12 from the project site along Lawler Ranch Parkway.

When burrows are present, the valley floor grassland and alkali meadow may provide suitable nesting habitat for burrowing owl. The valley floor grassland, alkali meadow, coastal brackish marsh, freshwater marsh, and seasonal wetland provide suitable foraging habitat.

No burrowing owls, or sign of burrowing owl were observed during general biological surveys, which included walking transects through the BSA spaced approximately 50 feet apart while searching for potentially suitable burrows. No California ground squirrels or burrows potentially suitable for burrowing owl were observed in or adjacent to the BSA. Especially in the southern portion of the BSA, a seasonally elevated water table may limit suitability for nesting and overwintering. Should any burrows become established in the northern portion of the BSA, including areas within the Petersen Road and SR-12 right-of-way, burrowing owl could occupy the burrows. The entire BSA provides potential foraging habitat.

Swainson's hawk (*Buteo swainsoni*)

Background: Swainson's hawk is a State-listed threatened species. Nesting sites are of concern to CDFW. Swainson's hawks nest in open riparian habitat, in scattered trees, or in small groves in sparsely vegetated flatlands. Nesting areas are usually located near water but are occasionally found in arid regions. Typical habitat includes open desert, grassland, or cropland containing scattered, large trees or small groves. Swainson's hawk breeds from late March to late October. They forage in adjacent grasslands, suitable grain or alfalfa fields, or in livestock pastures, feeding on rodents, small mammals, small birds, reptiles, large arthropods, amphibians, and, rarely, fish.

Swainson's hawk is an uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Swainson's hawks breed and forage in California's Central Valley in spring and summer. Migrating individuals move south through the southern and central interior of California in September and October, some migrating as far as South America.

The number of breeding pairs of Swainson's hawk in California has grown rapidly in recent years. Bloom (1980) estimated that as many as 17,136 pairs of Swainson's hawks historically nested in California and in the same report, based on a 1979 survey, estimated that only 375 (±50) breeding pairs remained in California. This demonstration of a 90 percent decline in the population prompted the listing of Swainson's hawk as a State threatened species in 1983. Estep (1989) estimated 430 breeding pairs in the Central Valley and 550 breeding pairs Statewide in 1988, and an estimate published by CDFW a decade later (CDFW 2007) showed a modest increase with an estimated number of breeding pairs Statewide at 1,893 in 2005 and in the Central Valley at 2,251 in 2006. In a recent study published by CDFW researchers in early 2022, Furnas et al. concluded that California's Swainson's hawk summering population grew between 2005 and 2018 at the rapid rate of 13.9 percent per year and estimated the total Statewide population at 18,810 breeding pairs in 2018,

which is within the range of the historical baseline that Bloom estimated in 1979. According to the Five-Year Status Review for Swainson's Hawk published by CDFW in 2016, habitat loss continues to be the primary threat to Swainson's hawk populations in California.

Potential for Occurrence: There are 56 CNDDB records of Swainson's hawk within the nine-quad area surrounding the BSA. The closest record (Occurrence No. 2714) is from 2015, approximately 3.4 miles northeast of the BSA, north of Cement Hill Road. An adult and a juvenile bird were observed near a nest in a eucalyptus tree surrounded by residential development and commercial properties. An additional Swainson's hawk nest site was discovered by a Huffman-Broadway Group Wildlife Biologist in 2022 near Chadbourne Road in Fairfield, a location that is just over 5 miles from the project site. In 2023 M&A conducted protocol Swainson's hawk surveys. The surveys were conducted in accordance with the California Department of Fish and Wildlife (CDFW) Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley, which identifies different survey windows throughout the pre-nesting and nesting season (ranging from January 1 through July 30/post-fledging) that have different survey methodologies and requirements. The CDFW's survey methodology requires surveys in a 0.5-mile radius around a project site to detect Swainson's hawk nesting in the vicinity; however, due to the absence of suitable nesting trees within the BSA and to get a broader view of Swainson's hawk nesting activity in the region, M&A conducted surveys in a 5-mile radius around the project site. Surveys were conducted on March 16, 2023 (Survey Period I), March 22, 31 and April 3, 2023 (Survey Period II), and on April 11, 17, and 19 (Survey Period III)**.** No potential nest trees occur in the BSA, and no active Swainson's hawk nests or signs of nesting behavior were observed within the 5-mile study area during these surveys. The M&A survey report can be found in Appendix C.

The valley floor grassland, alkali meadow, freshwater marsh, and seasonal wetland provide suitable foraging habitat.

No Swainson's hawks or potential raptor nests were observed during the general biological surveys. A few young/small riparian trees occur along the drainage ditches DD-01 and DD-02. The trees are not large enough to support the nest of a large raptor such as Swainson's hawk. Potentially suitable nest trees occur off-site approximately 150 feet southwest of the BSA on the south side of SR-12, approximately 120 feet west of the BSA on the west side of west side of Walters Road, and approximately 80 feet north of the BSA on the north side of Petersen Road. Swainson's hawk could nest in these trees located nearby. The entire BSA provides potential foraging habitat. According to the CNDDB there are no known Swainson's hawk nests within at least 3 miles of the BSA.

Northern harrier (*Circus hudsonius*)

Background: Northern harrier is a CDFW Species of Special Concern and USFWS Bird Species of Conservation Concern. Nesting sites are of concern to CDFW. Northern harriers breed and forage in a variety of open habitats that provide adequate vegetative cover, an abundance of suitable prey, and scattered hunting, plucking, and lookout perches such as shrubs and fence posts. In California, such habitats include freshwater marshes, brackish and saltwater marshes, wet meadows, weedy borders of lakes, rivers and streams, annual and perennial grasslands, vernal pool complexes, weed fields, ungrazed or lightly grazed pastures, low-growing crop fields, sagebrush flats, and desert sinks.

Northern harriers feed mostly on voles and other small mammals, birds, frogs, small reptiles, crustaceans, insects, and rarely on fish.

Northern harriers nest on the ground, mostly at marsh edge of emergent wetlands or along rivers or lakes, and generally within patches of dense vegetation in undisturbed areas. They may also nest in grasslands, grain fields, or on sagebrush flats several miles from water. Nests are built of large mounds of sticks on wet areas, and a smaller cup of grasses on dry sites. Breeding occurs from April to September, with peak activity occurring June through July. Single clutches are produced annually. The nestling period lasts about 53 days.

Northern harriers occur from annual grassland up to lodgepole pine and alpine meadow habitats. Northern harriers breed from sea level to 5,700 feet in the Central Valley and southern Sierra Nevada. Northern harriers are a permanent resident of the northeastern Modoc Plateau and coastal areas and a less common resident of the Central Valley.

Potential for Occurrence: There is 1 CNDDB record of northern harrier within the nine-quad area surrounding the BSA. The record (Occurrence No. 31) is from 2004 and is located approximately 3.6 miles southwest of the BSA, 3 miles southeast of Fairfield. A pair was observed nesting in coastal brackish marsh, dominated by *Salicornia virginica*, *Scirpus* spp. and *Typha* ssp. eBird data shows northern harrier to be a regularly occurring species in the project area, especially in winter.

The valley floor grassland, alkali meadow, and coastal brackish marsh provide potential nesting habitat for northern harrier. The valley floor grassland, alkali meadow, coastal brackish marsh, freshwater marsh, and seasonal wetland provide suitable foraging habitat.

One adult northern harrier was observed foraging over the grassland, alkali meadow, and seasonal wetlands in the BSA on March 8, 2021. No potential raptor nests were observed during the general biological surveys. Northern harrier could nest in the BSA. However, seasonal disking and harvesting in the farmed area may preclude nesting in that portion of the property. The entire BSA provides potential foraging habitat.

Mountain plover (*Charardrius montanus*)

Background: Mountain plover is a State Species of Special Concern and USFWS Bird Species of Conservation Concern. Mountain plovers forage in short grasslands and plowed fields, searching ground for large insects, especially grasshoppers. This species is not known to nest in California. The mountain plover winters in agricultural habitats with short grasses and semidesert habitats, similar to their nesting habitats in the intermountain west.

Mountain plovers winter from southern Texas through Mexico and southern Arizona and into California, below 3,200 feet. Occurs in the Central Valley from Sutter and Yuba counties southward. Also found in foothill valleys west of San Joaquin Valley, and in the Imperial Valley. Winter resident from September through March.

Potential for Occurrence: There are 4 CNDDB records of mountain plover within the nine-quad area surrounding the BSA. The closest record (Occurrence No. 1) is from 1992, approximately 7.9 miles

east of the BSA, near Creed Road. About 36 birds were observed overwintering north and south of Creed Road in valley and foothill grassland. More recent sightings from 2007 included 200+ individuals observed in the valley and foothill grasslands, approximately 13 miles to the east.

The valley floor grassland, alkali meadow, coastal brackish marsh, freshwater marsh, and seasonal wetland provide suitable foraging and wintering habitat for this species.

No mountain plovers were observed during the general biological surveys. Mountain plovers feed primarily on insects, and rarely seeds. Wintering birds are known to gather in tilled or burned farm fields, harvested alfalfa, alkaline flats, and coastal prairies. The entire BSA provides potential foraging/overwintering habitat for this species. Wintering mountain plover could occur in the BSA from approximately September through March, but a review of eBird data shows that the pattern of occurrence of wintering mountain plovers in Solano County is concentrated along the SR-113 corridor between SR-12 and Dixon and has not included this site or the immediate vicinity. .

Yellow rail (*Coturnicops noveboracensis*)

Background: Yellow rail is a CDFW Species of Special Concern and USFWS Bird Species of Conservation Concern. This species prefers densely vegetated sedge marshes and meadows with moist soils or shallow waters. Yellow rails typically raise one brood per year, however their exact nesting periods in California are unknown. They build low (approx. 5 cm above ground level) nests out of woven sedges/rushes. Yellow rails forage for food by picking at the ground and consume small snails, seeds, earthworms, insects, and other invertebrates.

In California, there is little information on the yellow rail's historic range, but it is known to occur year-round in California. The species is a local breeder in the northeastern interior portions of the State. Overwintering populations are known to inhabit coastal regions such as the San Francisco Bay estuary and the Suisun Marsh region from October to April. Yellow rails were documented at Tomales Bay and Grizzly Island in 2002. Breeding populations have also been documented in the Bridgeport Valley. The species is rarely sighted in the Central Valley region.

Potential for Occurrence: There are 4 CNDDB records of yellow rails within the nine-quad area surrounding the BSA. The closest record (Occurrence No. 40) is approximately 3.2 miles southwest of the project area. Three individuals were caught and released at this location in March and October of 2009.

The coastal brackish marsh provides marginally suitable foraging habitat for yellow rail.

No yellow rails or potential yellow rail nests were observed during the general biological surveys. This species could be present in the coastal brackish marsh at the southeast corner of the BSA as a winter visitor from approximately early October to mid-April. No breeding would be expected in the BSA. Yellow rail would not be expected to occur in the drainage ditches that traverse the BSA as these drainage features are not of sufficient width to provide suitable habitat.

White-tailed kite (*Elanus leucurus)*

Background: White-tailed kites are a State fully protected species. White-tailed kites occur in herbaceous and open stages of most habitats in cismontane California. They are rarely found away from agricultural areas. They forage in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands. White-tailed kite prey mostly on voles and other small, diurnal mammals, occasionally on birds, insects, reptiles, and amphibians.

White-tailed kites breed from February to October, with peak activity occurring from May to August. They are typically single-brooded, but occasionally have two broods. Substantial groves of dense, broad-leafed deciduous trees are used for nesting and roosting. In Southern California, they also roost in saltgrass and Bermuda grass. Nests are made of loosely piled sticks and twigs and lined with grass, straw, or rootlets. Nests are typically located near the top of dense oak, willow, or other tree stands from 20 to 100 feet above the ground and are often located near an open foraging area.

White-tailed kites are a common to uncommon yearlong resident of coastal and valley lowlands in cismontane California. They are absent from higher elevations in the Sierra Nevada, the Modoc Plateau, and from most desert regions.

Potential for Occurrence: There are 2 CNDDB records of white-tailed kite within the nine-quad area surrounding the BSA. The closest record (Occurrence No. 97) is from 2004, approximately 7.3 miles west of the BSA, just east of Suisun Creek, about 0.5 mile south of I-80. Two adult and two juvenile birds were observed near a nest in a live oak tree adjacent to railroad tracks.

No potential nest trees occur in the BSA. The valley floor grassland, alkali meadow, coastal brackish marsh, freshwater marsh, and seasonal wetland provide suitable foraging habitat.

No white-tailed kites or potential raptor nests were observed during the general biological surveys. A few young/small riparian trees occur along the drainage ditches DD-01 and DD-02. The trees are not large enough or dense enough at the top to support the nest of a white-tailed kite. Potentially suitable nest trees with more dense canopies occur off-site approximately 150 feet southwest of the BSA on the south side of SR-12, approximately 120 feet west of the BSA on the west side of west side of Walters Road, and approximately 80 feet north of the BSA on the north side of Petersen Road. White-tailed kite could nest in these trees located nearby. The entire BSA provides potential foraging habitat.

Loggerhead shrike (*Lanius ludovicianus*)

Background: Loggerhead shrike is a CDFW Species of Special Concern. Nest sites are of concern to CDFW. In California, loggerhead shrike breeds mainly in shrublands or open woodlands. They require tall shrubs, trees, fences or power lines for hunting perches, territorial advertisement, and pair maintenance; open areas of short grasses, forbs, or bared ground for hunting; and large shrubs or trees for nesting. This species also needs impaling sites for prey manipulation or storage. Impaling sites can include sharp, thorny, or multi-stemmed plants or barbed-wire fences. Their diet varies seasonally, but generally includes assorted insects, reptiles, amphibians, small rodents, and birds. Loggerhead shrikes build their nest on a stable branch in densely foliaged shrubs or trees. In California, eggs are laid from March into May, with young becoming independent in July or August.

Loggerhead shrikes occur throughout the State except for the forested coastal slope, forested coastal mountains, the Klamath and Siskiyou mountains of northwestern California, the Sierra Nevada and southern Cascades, and high elevations of the Transverse Ranges. They are present year-round throughout most of this range.

Potential for Occurrence: There are no CNDDB records of this species in the nine-quad area centered on the BSA. The closest CNDDB record (Occurrence No. 3) is approximately 22.7 miles southeast of the BSA. The record consists of four adults observed at a nest site in an ornamental tree near an abandoned house in March 2003. There are numerous reports of loggerhead shrike sightings in the vicinity of the project area recorded in eBird (2023). One adult loggerhead shrike was observed by SWCA perched on the chain-link fence bordering DD-01 on July 20, 2021. No potential loggerhead shrike nests were observed during the general biological surveys.

The few riparian trees that occur along DD-01 and DD-02 provide potential nesting habitat for loggerhead shrike. The valley floor grassland, alkali meadow, coastal brackish marsh, freshwater marsh, and seasonal wetland provide suitable foraging habitat. Loggerhead shrike could nest in the few riparian trees in the BSA. The entire BSA provides potential foraging habitat.

California black rail (*Laterallus jamaicensis coturniculus*)

Background: California black rail is listed as State threatened and California Fully Protected Species. California black rail depends on emergent wetland habitats for all stages of its life cycle. It is the smallest rail in North America and has a patchy and poorly understood distribution. It is found in saltwater, brackish, and freshwater marshes dominated by a variety of vegetation types and dense cover.

California black rail occurs along the Pacific coast from Bodega Bay to northwest Baja California, in the San Francisco Bay-Delta Estuary (where it is most abundant), inland in small numbers in the Salton Trough and along the lower Colorado River, and in the northern Sierra foothills of Butte, Nevada, Placer and Yuba counties.

Potential for Occurrence: There are 37 CNDDB record of California black rail within the nine-quad area surrounding the BSA. The closest record (Occurrence No. 118) is from 2009, approximately 0.67 mile southwest of the BSA at the east end of Hill Slough Wildlife Area. An unknown number of individuals were detected in 2009 in a lower high intertidal zone of brackish marsh, vegetated with *Cuscuta salina*, *Distichlis spicata, Salicornia virginica, Jaumea carnosa, Limonium californicum, Atriplex triangularis, and Plantago subnuda.*

The coastal brackish marsh provides suitable foraging habitat for California black rail.

No California black rails or potential rail nests were observed during the general biological surveys. This species could be present in the coastal brackish marsh at the southeast corner of the BSA as a winter visitor from approximately early October to mid-April. No breeding would be expected in the BSA. California black rail would not be expected to occur in the drainage ditches that traverse the BSA as these drainage features are not of sufficient width to provide suitable habitat.

Suisun song sparrow (*Melospiza melodia maxillaris*)

Background: Suisun song sparrow is a CDFW Species of Special Concern that is associated primarily with tidal channels, especially in marshes where pickleweed (*Salicornia* sp.) dominates and gumplant (*Grindelia* sp.) lines the channels. The year-round diet of the song sparrow in California is roughly 79 percent vegetable and 21 percent animal matter. As with all song sparrow subspecies, dense vegetation is required for nesting sites, song perches and cover for refuge from predators while exposed ground for foraging is also a requirement.

Suisun song sparrow is confined to tidal salt and brackish marshes fringing the Carquinez Strait and Suisun Bay east to Antioch, at the confluence of the San Joaquin and Sacramento Rivers.

Potential for Occurrence: There are 33 CNDDB records of Suisun song sparrow within the nine-quad area surrounding the BSA. The closest record (Occurrence No. 25) is from 2009, approximately 2.2 miles west of the BSA, north of Duck Slough. Approximately 2 to 4 Suisun song sparrows were detected in 2004 in brackish marsh with vegetation consisting of *Salicornia virginica*, *Schoenoplectus* sp., and *Typha* sp.

Vegetation in and along Drainage Ditch DD-01 and the coastal brackish marsh may provide suitable nesting habitat for Suisun song sparrow. The valley floor grassland, alkali meadow, coastal brackish marsh, freshwater marsh, and seasonal wetland provide suitable foraging habitat.

No Suisun song sparrows or potential song sparrow nests were observed in the BSA during the general biological surveys. Suisun song sparrow could nest along Drainage Ditch DD-01 and in the coastal brackish marsh. The entire BSA provides potential foraging habitat.

Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)

Background: Yellow-headed blackbird is a California Species of Special Concern. Breeding populations are found in regions with large and productive marshes. Yellow-headed blackbirds breed, nest, and forage almost exclusively in marshes and wetlands with relatively deep water, and tall emergent vegetation, such as rushes and cattails. Nests are constructed from dry vegetation and placed in dense cover on the edges of water bodies such as lakes, reservoirs, or larger ponds. The nests are often attached to cattails about 30 cm above the water's surface. Their overall yearly diet consists of a combination of seeds and insects. During breeding season, the adults forage primarily on insects and feed their young a diet of almost exclusively damselflies and other aquatic insects. Preferred habitat contains ample open water, moderately dense vegetation and extensive channels, characteristics suited for adequate support for nests and safety from predators.

Scattered, local populations occur in the Mojave Desert, the Imperial and Coachella Valleys, the Klamath Basin, Mono Basin, Modoc Plateau, Great Basin Desert, the Sierra Valley, and mountain valleys in northeastern California. However, due to the 90 percent loss of historic wetlands in the Central Valley, population records indicate that few breeding adults find suitable habitat in this region outside of wildlife refuges. In the San Joaquin Valley, the species is fairly numerous locally, with the best pockets of suitable habitat along rivers (especially on the west side), throughout the wetland complex of the Grasslands Ecological Area near Los Banos.

Potential for Occurrence: There are no CNDDB records of yellow-headed blackbird within the nine-quad area surrounding the BSA. The closest CNDDB record (Occurrence No. 7) is from 1899, approximately 23 miles southwest of the BSA near Pinole. The exact location and number of birds are unknown. Few reports of yellow-headed blackbird can be found for the project area on eBird.

Drainage Ditch DD-01 and the coastal brackish marsh provide potentially suitable habitat for nesting for yellow-headed blackbird. Yellow-headed blackbird could forage in the uplands and seasonal wetlands.

No yellow-headed blackbird or potential yellow-headed blackbird nests were observed during the general biological surveys. Yellow-headed blackbird could nest in DD-01 and the coastal brackish marsh. These aquatic habitats contain dense patches of bulrush and cattail vegetation. Habitat in these two features is marginal due to the limited extent and/or width of marsh vegetation, which may not provide adequate refuge and concealment for a nesting colony. DD-01 is bordered on both sides by a tall chain-link fence. The coastal brackish marsh is located immediately adjacent to SR-12. The valley floor grassland, alkali meadow, and seasonal wetland provide suitable foraging habitat for yellow-headed blackbird. There are no known nesting colonies in or near the BSA.

Nesting Birds Listed Under the Migratory Bird Treaty Act (MBTA) or Regulated by California Fish and Game Code.

The federal MBTA of 1918 (16 United States Code [USC] 703-711) protects most birds and their nests, including most non-migratory birds in California. The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any bird listed in 50 Code of Federal Regulations Part 10 including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations. Any disturbance that causes direct injury, death, nest abandonment, or forced fledging of migratory birds, is restricted under the MBTA. Any removal of active nests during the breeding season or any disturbance that results in the abandonment of nestlings is considered a 'take' of the species under federal law. California Fish and Game Code Section 3503 protects most birds and their nests. Fish and Game Code 3503.5 further protects all birds in the orders Falconiformes and Strigiformes (collectively known as birds of prey). Birds of prey include raptors, falcons, and owls.

The BSA provides potential nesting habitat for birds listed under the MBTA and/or regulated by the Fish and Game Code. Depending on the species, birds may nest on trees, shrubs, in or on the ground, and on artificial structures such as buildings, poles, and signs.

Numerous birds protected pursuant to the MBTA or regulated by the Fish and Game Code were observed foraging during the surveys (Appendix C). No potential active bird nests were observed in the BSA. Nesting or attempted nesting by migratory birds and birds of prey is anticipated from February 1 to August 31. Construction during the nest season could lead to active nest destruction or abandonment.

Mammals

Salt marsh harvest mouse (*Reithrodontomys raviventris*)

Background: Salt marsh harvest mouse (SMHM) is federally and State-listed as endangered and is also a State designated Fully Protected Species. There are two subspecies of salt marsh harvest mice:

the northern SMHM (*Reithrodontomys raviventris halicoetes*) lives in the marshes of the San Pablo and Suisun bays, and the SMHM (*R. r. raviventris*) is found in the marshes of Corte Madera, Richmond, and South San Francisco Bay. They forage mainly on leaves, seeds, and stems of plants that occur in salt and brackish marsh habitats. In winter, fresh green grasses are preferred. Pickleweed and saltgrass are the main food sources. Historic trapping efforts have detected SMHM in significant numbers in brackish marshes and in marshes dominated by plants other than pickleweed, such as alkali bulrush (*Bolboschoenus maritimus*) and tri-corner bulrush (*Schoenoplectus americanus*). This species does not burrow. SMHM builds nests of grass and sedges on the ground. The northern subspecies breeds from March through November. SMHM is capable of drinking seawater. Marshlands with low salinities and sparse pickleweed are not utilized by the mice. Barren areas mostly devoid of vegetation are generally avoided. In marshes, with an upper zone of peripheral halophytes, mice use this vegetation to escape the higher tides, and may even spend a considerable portion of their lives there. Mice also move into the adjoining grasslands during the highest winter tides. Studies of radio-tagged SMHM indicate home range areas of 2,133 m^2 (0.53 acre). There are few data available on the distance that SMHM travel from salt marsh into terrestrial grassland. SMHM have been found seasonally using grasslands over 100 meters (328 feet) from any wetland edge in tidal marshes. The use of grasslands by salt marsh harvest mice in the spring has been interpreted as an opportunistic exploitation of a seasonally available resource, rather than use of an essential habitat.

SMHM is restricted to saline and brackish marsh habitats around San Francisco Bay. The northern subspecies is found in the brackish to saline marshes of San Pablo and Suisun bays at relatively high numbers (e.g., 18–181 mice per hectare). No critical habitat has been designated for SMHM.

Potential for Occurrence: There are 63 CNDDB records of SMHM within the nine-quad area surrounding the BSA. The closest record (Occurrence No. 112) is from 2010, approximately 0.46 mile southwest of the BSA at Hill Slough. A total of 15 mice were captured within the Hill Slough Wildlife Area. Surrounding habitat consisted of tidal marsh dominated primarily by *Salicornia* and *Distichlis*. The next nearest record (Occurrence No. 121) is approximately 1.6 miles west of the BSA at Hill Slough. No records occur north of SR-12. The highway may function as barrier to SMHM dispersal into the BSA from known populations to the south of SR-12 around Hill Slough. Regionally, records are clustered around tidal salt marshes and brackish marshes.

The USFWS 2013 Recovery Plan identifies the southern portion of the BSA and portions of the drainage ditches as part of the SMHM Suisun Bay Area Recovery Unit Segment A. This portion of the study area generally coincides with the brackish marsh, saltgrass flats, and southern portion of the drainage ditches. The brackish marsh is identified as an area of Future Ecotone Restoration.

SWCA indicates that overall, habitat quality for SMHM in the BSA is poor, primarily due to a general lack of areas of extensive pickleweed in the BSA.[29] The pickleweed is restricted to the areas adjacent to the brackish marsh and SR-12 at the southeast corner of the BSA, and where it does occur, it is sparse (approximately one individual plant every 50 square feet). The brackish marsh is of limited extent and much of it is open and heavily grazed by cattle, providing little cover. The drainage ditches

[29] SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation.

generally contain freshwater species (*Alisma*, *Persicaria*, etc.), and do not contain brackish water or a preponderance of halophytes. SWCA also points out that SMHM would not be expected to occur far from brackish water, and thus would not occur in the tilled agricultural fields present in the central and northern portions of the BSA, especially since these areas are generally sparsely vegetated and offer little cover. No SMHM were observed by SWCA during their general surveys for the BRE.

Despite these shortcomings of poor habitat quality and potential barriers to movement of SMHM to areas north of State Route 12, SWCA concluded that the coastal brackish marsh, alkali meadow, and southernmost seasonal wetlands located within the alkali meadow provide potentially suitable habitat for SMHM. They note that the brackish marsh, alkali meadow, and southernmost seasonal wetlands contain plant species that could be consumed by SMHM for food, including abundant saltgrass and small quantities of pickleweed, and that the alkali meadow adjacent to suitable marsh/wetland habitat provides potential food, cover, and nesting habitat for SMHM. Seasonally, and when sufficient vegetation cover is present, SMHM could use dense upland vegetation within approximately 328 feet of the potentially suitable wetland habitat.

Taking all of the above discussion into consideration, however, it is evident that SMHM does not occur within the BSA. This conclusion is based on the following factors:

- SMHM occurs primarily in tidal marshes with extensive growth of pickleweed in conjunction with an upper marsh zone of peripheral halophytes that provide cover from predators and that the mice use to escape higher tides. None of this type of habitat is found within the BSA. No tidal regimes occur within the BSA, pickleweed growth is sparse at best, and refugial habitats that are an essential element of prime habitats for the species are lacking.
- SMHM may use dense upland vegetation, especially when accompanied by brackish marsh, alkali meadow, or seasonal wetlands resembling habitats present in the BSA, but only when occurring adjacent to tidal marsh/pickleweed habitats with required high marsh refugial vegetation that are occupied by SMHM.
- The nearest tidal marsh known to support SMHM is at Hill Slough approximately 0.46 miles from the BSA on the south side of State Route 12. Areas adjacent to the BSA do not support tidal marsh with the requisite habitat elements necessary to support SMHM. SMHM is not present in areas adjacent to the BSA and, in fact, there are no records documenting the presence of SMHM anywhere north of State Route 12. Even if optimal habitats were to occur in areas immediately south of the BSA, State Route 12 provides a barrier to safe movement of individuals of the species to areas within the BSA.
- SMHM does not occur within the BSA because (1) Suitable tidal marsh with constituent elements to support SMHM is not present on the site, (2) no occupied tidal marsh occurs in areas adjacent to the site, so there would be no SMHM from adjacent areas to utilize any of the on-site habitat, (3) SMHM does not occur north of State Route 12, (4) the nearest occupied habitats are at least almost ½ mile from the site, and (5) State Route 12 provides a barrier to any future movement of SMHM onto the site.

Suisun shrew (*Sorex ornatus sinuosus*)

Background: Suisun shrew is a CDFW Species of Special Concern. Suisun shrews inhabit salt and brackish marshes around the northern margins of San Pablo and Suisun bays. They prefer areas of low, dense vegetation, which provide adequate cover and nesting places along with plentiful supply of invertebrates. They are most often found at the junction between pickleweed marshes and upland levees vegetated with coyote brush (*Baccharis* sp.) and grasses. Driftwood and other upland areas are an important habitat feature for nesting and foraging. Contiguous upland habitats may provide important refuge during flooding of salt marshes.

Suisun shrew occurs in tidal and brackish marsh communities along the north shore of San Pablo and Suisun bays, from Sonoma Creek and Tubbs Island, Sonoma County on the west, eastward to Grizzly Island, Solano County. There are 6 CNDDB records of Suisun shrew within the nine-quad area surrounding the BSA. The closest record (Occurrence No. 5) is from 2010, approximately 3 miles west of the BSA in Suisun City salt marsh, adjacent to Cordelia Street. No potential Suisun shrew individuals were observed during general biological surveys.

Potential for Occurrence: SWCA concluded that the coastal brackish marsh, alkali meadow, and southernmost seasonal wetlands provide potentially suitable habitat for Suisun shrew based on the fact that these habitats are inundated or are in the vicinity of aquatic features that inundate throughout much of the year and contain the low, dense vegetation preferred by the shrew.[30] Suisun shrew would not be expected to occur far from brackish water, and thus would not occur in the tilled agricultural fields present in the central and northern portions of the BSA, especially since these areas are generally sparsely vegetated and offer little cover.

Suisun shrew would only be expected to utilize habitats within the BSA if they moved onto the site from adjacent suitable habitats. As indicated above, Suisun shrew mostly occur along the edge of tidal marsh near suitable upland habitats, which they occupy during periods of high tides or other inundation of marsh habitats. Areas within the BSA and adjacent to the BSA do not support these habitat features and State Route 12 serves as a barrier to movement of Suisun shrew onto the site from tidal marsh habitats south of the highway. It is highly unlikely that Suisun shrew occur in the project area.

American badger (*Taxidea taxus*)

Background: The American badger is a CDFW Species of Special Concern that occupies grasslands and open stages of shrub and forest habitats with friable soils. Badgers can be active at any hour but are primarily nocturnal. When inactive, badgers dig and occupy underground burrows, sometimes reusing existing burrows but often digging new burrows nightly. Burrows are dug in areas with dry, often sandy, soils with sparse overstory cover. Badgers feed primarily on fossorial rodents such as ground squirrels and pocket gophers, which they hunt by digging. They also take voles, mice, birds, eggs, reptiles, and insects.

Mating occurs in summer and early fall, with delayed implantation. Some females are able to breed in their first year, but males do not sexually mature until their second year. Two to five young are born in natal dens in March and April. Females and kits occupy natal dens until May. Young badgers disperse from the natal den between July and August of their first or second year, sometimes staying

[30] SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation.

within the range of their mother, other times dispersing up to 70 miles from the natal den. Average home range sizes documented outside California vary from 0.74 square miles in Idaho to over 100 square miles in British Columbia. Home ranges sizes of between 0.46 up to 6.83 square miles were documented in Monterey County, California. Family members may share the same territory as females, but males are generally solitary except during the breeding season. This species is tolerant of human activities, but is threatened by agricultural and urban development, roadkill, indiscriminate predator trapping, and poisoning.

American badger can be found throughout California, except for the northern coast area.

Potential for Occurrence: There is one CNDDB record of American badger within the nine-quad area surrounding the BSA. The record (Occurrence No. 535) is from 2016, approximately 9.2 miles north of the BSA in Vacaville. Relatively fresh diggings with badger tracks and hair were observed in 2016 in a strip of eucalyptus trees in ruderal/non-native grasslands at edge of the airport. No occupied dens were found near the diggings.

American badger could create and occupy dens within the valley floor grassland. The entire BSA is suitable foraging habitat.

No American badgers or sign of American badgers were observed during general biological surveys, which included walking transects through the BSA spaced approximately 50 feet apart while searching for potentially suitable burrows. Especially in the southern portion of the BSA, a seasonally elevated water table may limit suitability for denning. The amount of development in the surrounding area and the limited prey base within the BSA greatly diminish the suitability of habitat in the BSA. No California ground squirrels were observed in the BSA. Only a few small patches of fossorial rodent mounds were observed. The central and norther portions of the BSA are regularly disked and subject to dryland farming. The prey base for badger in the BSA is very limited. Soils are generally hard and not friable, increasing the energy a badger would expend to excavate a den or hunt prey within the BSA. Nevertheless, there is a potential for American badger to use the site.

Evaluation of Special-status Plants

SWCA conducted protocol botanical surveys following CDFW (2018) and USFWS (2000) methodologies and guidelines as part of their analyses while preparing the BRE for the site.[31] SWCA conducted surveys of the site in October 2020 and March, April, July, and August 2021 during the published blooming period for special-status plants with potential to occur in the BSA. Prior to this, botanical surveys were conducted on the property by LSA Associates in May 2006, March/April 2007, and May 2008 (LSA Associates Inc. 2010) during their work assisting the SCWA preparation of the Draft Solano Multiple Species Habitat Conservation Plan.

One federally listed special-status plant species, Contra Costa goldfields (*Lasthenia conjugens*) was observed near the western edge of the BSA on April 1, 2022.[32] No other State or federally listed species were observed in the BSA during previous protocol botanical surveys conducted in October

[31] SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation.
[32] SWCA Environmental Consultants (SWCA). 2022. 2022 Spring Botanical Survey Results for the Suisun Logistics Center Project. Solano County, California.

2020 and March, April, July, and August 2021, during the evident and identifiable period for special-status plants with potential to occur. Contra Costa goldfields were also identified in low abundance on the site by LSA during surveys conducted between 2006 and 2008. In addition to Contra Costa goldfields, two CNPS California Rare Plant Rank 1B.2 plant species were identified and mapped in the BSA: pappose tarplant) and saline clover. The locations of rare plants on the site are shown on Exhibit 3.3-2. The plants with known occurrences on the site, as well as other special-status plant species with potential habitat present in the BSA are discussed below based on information from SWCA[33] and Calflora (2023).

Ferris' milk vetch (*Astragalus tener var. ferrisiae*)

Ferris' milk vetch is an annual herb found in vernally mesic meadows and seeps, valley and foothill grasslands, and alkaline flats from 6 to 246 feet. It blooms April through May. This species is endemic to California. Ferris' milk vetch is known from Butte, Colusa, Glenn, Sutter, and Yolo counties. It is presumed extirpated from Solano County. The valley floor grassland, alkali meadow, and seasonal wetlands provide potential habitat for Ferris' milk vetch.

There is 1 CNDDB record of Ferris' milk vetch in the nine-quad area surrounding the BSA. The record (Occurrence No. 7) is from 1962, approximately 14 miles northeast of the BSA. Ferris' milk vetch was collected from a vernal meadow 0.25 mile north of Bunker. Ferris' milk vetch was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Alkali milk vetch (*Astragalus tener var. tener*)

Alkali milk vetch is an annual herb found in alkaline conditions of playas, adobe clay valley and foothill grassland, and vernal pools from 3 to 197 feet. It blooms March through June. This species is endemic to California. Alkali milk vetch is known from Alameda, Merced, Napa, Solano, and Yolo counties. It is presumed extirpated from Contra Costa, Monterey, San Benito, Santa Clara, San Francisco, San Joaquin, Sonoma, and Stanislaus counties. Portions of the valley floor grassland with elevated alkalinity, alkali meadow, and seasonal wetlands provide potential habitat for alkali milk vetch.

There are 65 CNDDB records of this species in the nine-quad area surrounding the BSA. The closest (Occurrence No. 20) is from 2006, approximately 800 feet southeast of the BSA. Approximately 100 plants were observed scattered over a vernal flat southwest of the intersection of Scalley Road and Killdeer Road. The next nearest record (Occurrence No. 40) is from 1992, approximately 1.2 miles northwest of the BSA, 3 miles northeast of Suisun. Alkali milk vetch was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Heartscale (*Atriplex cordulata var. cordulata*)

Heartscale is an annual herb found in saline or alkaline conditions of chenopod scrub, meadows and seeps, and sandy valley and foothill grassland from 0 to 1,837 feet. It blooms April through October. This species is endemic to California. Heartscale is known from Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kern, Madera, Merced, Solano, and Tulare counties. It is presumed extirpated from

[33] SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation.

San Joaquin, Stanislaus, and Yolo counties. Portions of the valley floor grassland with elevated alkalinity, alkali meadow, and seasonal wetlands provide potential habitat for heartscale.

There are 10 CNDDB records of this species within the nine-quad area surrounding the BSA. The closest (Occurrence No. 79) is from 2006, approximately 800 feet southeast of the BSA. Heartscale was observed in an alkaline grassland at the edge of a vernal pool southwest of the intersection of Scalley Road and Killdeer Road. Dominants included *Hordeum marinum* ssp. *gussoneanum*, *Cotula cornopifolia*, and *Lasthenia californica*. Heartscale was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Brittlescale (Atriplex depressa)

Brittlescale is an annual herb found in alkaline and clay soils of chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools from 3 to 1,050 feet. It blooms April through October. This species is endemic to California. Brittlescale is known from Alameda, Contra Costa, Colusa, Fresno, Glenn, Kern, Merced, Solano, Stanislaus, Tulare, and Yolo counties. Portions of the valley floor grassland with elevated alkalinity, alkali meadow, and seasonal wetlands provide potential habitat for brittlescale.

There are 7 CNDDB records of this species within the nine-quad area surrounding the BSA. The closest (Occurrence No. 55), is from 1996, approximately 0.25 mile south of the BSA. A total of 213 plants were observed in an alkali playa along the east side of the access road to the Potrero Hills Landfill. In the wetlands, brittlescale was associated with Polypogon monspeliensis, Salicornia europaea, S. Virginica, and Frankenia salina. The next closest record (Occurrence No. 59) is from 1986, approximately 2 miles east of the BSA and 2 miles east of SR-12 in the bed of a large vernal pool. Brittlescale was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Vernal pool smallscale (*Atriplex persistens*)

Vernal pool smallscale is an annual herb found in alkaline vernal pools from 30 to 380 feet. It blooms June through October. This species is endemic to California. Vernal pool smallscale is known from Colusa, Glenn, Madera, Merced, Solano, Stanislaus, and Tulare counties. The seasonal wetlands provide potential habitat for vernal pool smallscale.

There are 4 CNDDB records of this species within the nine-quad area surrounding the BSA. The closest (Occurrence No. 38) is from 2002, approximately 4 miles west of the BSA. A total of 200 plants were observed in a vernal pool on the south side of Cordelia Road between Suisun and Subeet. The plants were associated with *Hordeum marinum* ssp. *gussoneanum*, *H. depressum*, *Parapholis incurva*, *Frankenia salina*, *Lepidium oxycarpum*, *Lolium multiflorum*, *Salicornia virginica*, *Cotula coronopifolia*, *Distichlis spicata*, and *Juncus bufonius*. Vernal pool smallscale was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Big tarplant (*Blepharizonia plumosa*)

Big tarplant is an annual herb usually found in clay soils on dry slopes in valley and foothill grassland from 100 to 1,660 feet. It blooms July through October. This species is endemic to California. Big

tarplant is known from northwest San Joaquin Valley and eastern San Francisco Bay. It is presumed extirpated in Solano County. The valley floor grassland provides potential habitat for big tarplant.

There are 3 CNDDB records of this species within the nine-quad area surrounding the BSA. The closest (Occurrence No. 2) is from 1937, approximately 14 miles southeast of the BSA. Big tarplant was collected in an area near Pittsburg. The exact location is unknown. Big tarplant was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Lyngbye's sedge (*Carex lyngbyei*)

Lyngbye's sedge is a perennial rhizomatous herb found in brackish and freshwater marshes and swamps from 0 to 35 feet. It blooms April through August. This species is known from Del Norte, Humboldt, Marin, Mendocino, Napa, and Solano counties. The freshwater marsh in DD-01 and the coastal brackish marsh provide potential habitat for Lyngbye's sedge.

There is one CNDDB record of this species within the nine-quad area surrounding the BSA. The record (Occurrence No. 31) is from 2020, approximately 2 miles southwest of the BSA. Lyngbye's sedge was observed on the east side of Grizzly Island Road near Hill Slough and Rush Ranch Open Space just southeast of Suisun City. Lyngbye's sedge was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*)

Congdon's tarplant is an annual herb found in alkaline valley and foothill grasslands from 3 to 754 feet. It blooms May through October. This species is endemic to California. Congdon's tarplant is known from central western California. It is presumed extirpated from Santa Cruz and Solano counties. Portions of the valley floor grassland with elevated alkalinity, alkali meadow, and seasonal wetlands provide potential habitat for Congdon's tarplant.

There are 4 CNDDB records of this species within the nine-quad area surrounding the BSA. The closest (Occurrence No. 98) is from 2015, approximately 2 miles southeast of the BSA. Congdon's tarplant was observed in grassland habitat on rolling hills with drainage channels. The habitat was dominated by *Avena* sp., *Bromus diandrus*, *Hordeum marinum*, and *Centaurea calcitrapa*. Congdon's tarplant was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Pappose tarplant (Centromadia parryi ssp. parryi)

Pappose tarplant is an annual herb found on alkaline substrates in chaparral, coastal prairie, meadow and seeps, coastal salt marshes and swamps, and valley and vernally mesic foothill grasslands, and springs from sea level to 1,378 feet. It blooms May through November. This species is endemic to California. Pappose tarplant is known from Butte, Colusa, Glenn, Lake, Napa, San Mateo, Solano, Sonoma, and Yolo counties. Portions of the valley floor grassland with elevated alkalinity, alkali meadow, and seasonal wetlands provide suitable habitat for pappose tarplant.

There are 20 CNDDB records of this species within the nine-quad area surrounding the BSA. The closest (Occurrence No. 26) is from 2006, approximately 800 feet southeast of the BSA. Pappose

tarplant was observed growing in an alkaline grassland at the edge of a vernal pool southwest of the intersection between Scalley Road and Killdeer Road. The next closest record (Occurrence No. 2) is from 1999, approximately 1.9 miles southeast of the BSA and 2.7 miles southeast of Fairfield. The pappose tarplants in this record were observed in swales with *Lolium multiflorum*, *Hordeum marinum* spp. *gussoneanum*, *Distichlis spicata*, and *Frankenia salina*. Approximately 6,196,679 pappose tarplant plants were mapped within the BSA in July and August 2021 (Figure 5; Appendix C photos 26-28).[34] The plants were observed throughout most of the BSA, with greater densities observed in the central and eastern portions of the BSA. The plants were observed growing in the valley floor grassland, alkali meadow, and seasonal wetlands, sometimes in near monoculture. The pappose tarplant plants were in flower and early fruit. and found in shallow seasonal wetlands often with alkali-mallow and Italian rye grass. Pappose tarplant was not observed in the deepest seasonal wetlands present in the southernmost portion of the BSA. These southernmost seasonal wetlands are deeper and/or more hypersaline/hyperalkaline, potentially limiting suitability for pappose tarplant.

Plants were also observed in fall of 2020 at similar locations, at lower densities. Annual plant populations often fluctuate from year to year. The greater density of plants in 2021 may have been influenced by dryland farming practices and fire. Dryland farming in the BSA has involved disking and harvesting of grain crops in the early summer. Pappose tarplant begins as a prostrate rosette in spring, and thus may evade direct impacts from harvest while benefiting from the removal of competing plants. Both the fire that occurred in the southeast corner of the BSA in fall 2020 and the disking in the northern portion of the BSA expose the soil surface, which may promote germination and recruitment. The positive association of the pappose tarplant with agricultural tillage and harvest practices, which appears to encourage its growth, was clearly discernible at the edges of the disked fields and burned areas in July and August 2021.

Hispid salty bird's-beak (*Chloropyron molle ssp. hispidum*)

Hispid salty birds-beak is an annual hemiparasitic herb found in alkaline conditions of meadows and seeps, playas, and valley and foothill grasslands from 3 to 510 feet. It blooms June through September. This species is endemic to California. Hispid salty bird's-beak is known from Alameda, Fresno, Kern, Merced, Placer, and Solano counties. It has been extirpated from much of the lower San Joaquin Valley. Portions of the valley floor grassland with elevated alkalinity, alkali meadow, and seasonal wetlands provide potential habitat for Hispid salty birds-beak.

There is 1 CNDDB record for this species in the nine-quad area surrounding the BSA. The record (Occurrence No. 13) is from 2010, approximately 4.6 miles east of the BSA. Hispid salty bird's-beak was observed growing in a vernally wet area in annual grassland on Pescadero clay on the margins of brackish marsh habitat 1.8 miles west of Creed Station on Creed Road. Hispid salty bird's-beak was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

[34] SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation.

Soft salty bird's-beak (Chloropyron molle ssp. molle)

Soft salty bird's-beak is an annual hemiparasitic herb found in coastal salt marshes and swamps from 0 to 10 feet. It blooms July through November. This species is endemic to California. Soft salty bird's-beak is known from fewer than 15 occurrences in Contra Costa, Marin, Napa, Sacramento, Solano, and Sonoma counties.

Soft salty bird's beak is federally listed as endangered. Critical habitat for soft salty bird's-beak was designated in 2007.[35] The BSA does not contain federal designated critical habitat for soft salty bird's-beak. The nearest critical habitat occurs approximately 0.3 miles southwest. The alkali meadow, seasonal wetlands, and coastal brackish marsh provide potential habitat for soft salty bird's-beak.

There are 17 CNDDB records for this species in the nine-quad area surrounding the BSA. The closest record (Occurrence No. 19) from 2012, is located approximately 0.5 mile southwest of the BSA. An unknown number of plants were seen in the Suisun Marsh north of Hill Sough. The plants were growing in the salt marsh in association with *Salicornia virginica*, *Distichlis spicata*, *Cuscuta salina major*, *Jaumea carnosa*, *Polypogon monspeliensis*, *Schoenoplectus americanus*, and *Atriplex triangularis.* The next nearest record (Occurrence No. 21) from 2011is also located in the Suisun Marsh, approximately 1.1 mile south of the BSA. Approximately 53,031 plants were seen with *Salicornia virginica*, *Distichlis spicata*, *Cuscuta salina Major*, *Jaumea carnosa*, *Polypogon monspeliensis*, *Schoenoplectus americanus*, and *Atriplex triangularis*. Soft salty bird's-beak was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Bolander's water-hemlock (*Cicuta maculata var. bolanderi)*

Bolander's water-hemlock is a perennial herb found in coastal, fresh or brackish water marshes and swamps from 0 to 656 feet. It blooms July through September. Bolander's water-hemlock is known from Contra Costa, Marin, Sacramento, and Solano counties. It is presumed extirpated from Santa Barbara County. The freshwater marsh in DD-01 and the coastal brackish marsh provide potential habitat for Bolander's water-hemlock.

There are 7 CNDDB records of Bolander's water-hemlock in the nine-quad area surrounding the BSA. The closest (Occurrence No. 11) is from 2009, approximately 2.8 miles southwest of the BSA. A few Bolander's water-hemlock plants were observed in Suisun Slough 0.6 mile northwest of Rush Ranch Visitor Center. The plants were growing in high brackish marsh in association with *Juncus arcticus* ssp. *balticus*, *Distichlis spicata*, *Lycopus asper*, and *Pluchea odorata*. Bolander's water-hemlock was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Suisun thistle (*Cirsium hydrophilum var. hydrophilum*)

Suisun thistle is a perennial herb found in salt marshes and swamps from 0 to 3 feet. It blooms June through September. This species is endemic to California. Suisun thistle is known from two

[35] Department of the Interior. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Cirsium hydrophilum var. hydrophilum (Suisun thistle) and Cordylanthus mollis ssp. mollis (soft bird's-beak). 72 FR 18518 18553. Federal Register 72, no. 70. April 12, 2007.

occurrences in the Suisun Marsh in Solano County. Critical habitat for Suisun thistle was designated in 2007.[36] Suisun thistle is federally listed as endangered. Critical habitat for the species has been designated, but the BSA does not contain federally designated critical habitat for Suisun thistle. The nearest critical habitat occurs approximately 0.3 miles to the southwest. The coastal brackish marsh provides potential habitat for Suisun thistle.

There are 3 CNDDB records for this species in the nine-quad area surrounding the BSA. The closest (Occurrence No. 7) is from 2019, approximately 0.6 mile south of the BSA. A total of 37 flowering plants were observed in the Hill Slough Wildlife Area. The plants were growing in association with *Potentilla anserina*, *Calystegia sepium*, *Grindelia stricta*, *Schoenoplectus americanus*, and *Apium graveolens* above the slope of a brackish tidal marsh. Suisun thistle was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Recurved larkspur (*Delphinium recurvatum*)

Recurved larkspur is a perennial herb found in alkaline chenopod scrub, cismontane woodland, and valley and foothill grassland from 10 to 2,450 feet. It grows in poorly drained, fine, alkaline soils. It blooms March through June. This species is endemic to California. Recurved larkspur is known from Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kings, Kern, Madera, Merced, Monterey, San Joaquin, San Luis Obispo, Solano, and Tulare counties. Portions of the valley floor grassland with elevated alkalinity and alkali meadow provide potential habitat for recurved larkspur.

There is 1 CNDDB record for this species in the nine-quad area surrounding the BSA. The record (Occurrence No. 1) is from 1940, approximately 8 miles north of the BSA. Recurved larkspur was collected along the roadside in clay soil north of Vacaville. The exact location is unknown. Recurved larkspur was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Dwarf downingia (*Downingia pusilla*)

Dwarf downingia is an annual herb found in mesic valley and foothill grasslands and vernal pools from 3 to 1,450 feet. It blooms from March through May. Dwarf downingia is known from Amador, Fresno, Merced, Napa, Placer, Sacramento, San Joaquin, Solano, Sonoma, Stanislaus, Tehama, and Yuba counties. The valley floor grassland, alkali meadow, and seasonal wetlands provide potential habitat for dwarf downingia.

There are 22 CNDDB records for this species in the nine-quad area surrounding the BSA. The closest record (Occurrence No. 1) is from 1893, approximately 2.3 miles north of the BSA. The record is for a dwarf downingia collection at an unknown location south of Vacaville. Dwarf downingia was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

[36] Department of the Interior. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Cirsium hydrophilum var. hydrophilum (Suisun thistle) and Cordylanthus mollis ssp. mollis (soft bird's-beak). 72 FR 18518 18553. Federal Register 72, no. 70. April 12, 2007.

Jepson's coyote thistle (*Eryngium jepsonii)*

Jepson's coyote thistle is a perennial herb found in clay soils in valley and foothill grassland and vernal pools from 10 to 985 feet. It blooms April through August. This species is known from Alameda, Contra Costa, Napa, San Mateo, Solano, and Yolo counties. The valley floor grassland, alkali meadow, and seasonal wetlands provide potential habitat for Jepson's coyote thistle.

There is one CNDDB records of this species within the nine-quad area surrounding the BSA. The record (Occurrence No. 14) is from 1938, approximately 7.5 miles southwest of the BSA. Jepson's coyote thistle was observed in a dry ditch near Cordelia. Jepson's coyote thistle was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Diamond-petaled California poppy (Eschscholzia rhombipetala)

Diamond-petaled California poppy is an annual herb found in alkaline, clay soils of valley and foothill grassland from 0 to 3,200 feet. It blooms March through April. This species is endemic to California. It is known from Alameda, San Joaquin, and San Luis Obispo counties. It is presumed extirpated from Colusa, Contra Costa, and Stanislaus counties. Portions of the valley floor grassland with elevated alkalinity and alkali meadow provide potential habitat for diamond-petaled California poppy.

There is 1 CNDDB record for this species in the nine-quad area surrounding the BSA. The record (Occurrence No. 3) is from 1994, approximately 18.4 miles southeast of the BSA. Diamond-petaled California poppy was observed around the Antioch dunes. The exact location is unknown. Diamond-petaled California poppy was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

San Joaquin spearscale (*Extriplex joaquinana*)

San Joaquin spearscale is an annual herb found in alkaline soils in chenopod scrub, meadows and seeps, playas, and valley and foothill grassland from 3 to 2,740 feet. It blooms April through October. This species is endemic to California. San Joaquin spearscale is known from Alameda, Contra Costa, Colusa, Fresno, Glenn, Merced, Monterey, Napa, San Benito, Solano, Yolo and possibly San Luis Obispo counties. It is presumed extirpated in Santa Clara, San Joaquin, and Tulare counties. Portions of the valley floor grassland with elevated alkalinity, alkali meadow, and seasonal wetlands provide potential habitat for San Joaquin spearscale.

There are 10 CNDDB records for San Joaquin spearscale in the nine-quad area surrounding the BSA. The closest (Occurrence No. 49) is from 2004, approximately 1 mile south of the BSA. Approximately 900 San Joaquin spearscale plants were observed in a field on the west side of Scally Road, just south of Killdeer Road in seasonal alkali grassland with *Lolium multiflorum*, *Bromus hordeaceus*, *Frankenia salina*, *Parapholis incurva*, and *Salicornia virginica*. San Joaquin spearscale was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Boggs Lake hedge-hyssop (*Gratiola heterosepala*)

Boggs Lake hedge-hyssop is an annual herb found in clay substrates at the margins of lakes, marshes, swamps, and vernal pools from 30 to 7,790 feet. It blooms from April through August. Boggs Lake hedge-hyssop is known from Fresno, Lake, Lassen, Madera, Mendocino, Merced, Modoc, Placer,

Sacramento, Shasta, Siskiyou, San Joaquin, Solano, Sonoma, and Tehama counties. The seasonal wetlands and freshwater marsh provide potential habitat for Boggs Lake hedge-hyssop.

There are 6 CNDDB records for Boggs Lake hedge-hyssop in the nine-quad area surrounding the BSA. The closest (Occurrence No. 39) is from 1991, approximately 7.1 miles northeast of the BSA. The record is for Boggs Lake hedge-hyssop that was observed at the end of Dally Road, south of Hay Road in a sparsely vegetated portion of small playa-type vernal pool with *Lasthenia glaberrima*, *Pleuropogon californicus*, *Eleocharis macrostachya*, and *Downingia cuspidata*. Boggs Lake hedge-hyssop was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Hogwallow starfish (Hesperevax caulescens)

Hogwallow starfish is an annual herb found in mesic clay substrates in valley and foothill grassland and in shallow vernal pools, sometimes in high alkaline areas, from 0 to 1,655 feet. It blooms from March through June. This species is endemic to California. Hogwallow starfish is known from Alameda, Lake, Monterey, Napa, Placer, Sacramento, Santa Clara, Shasta, San Joaquin, San Mateo, Solano, Sonoma, Stanislaus, Tehama, and Yuba counties. It is presumed extirpated from Stanislaus County. The valley floor grassland, seasonal wetlands, and alkali meadow provide potential habitat for hogwallow starfish.

The CNDDB does not track records of hogwallow starfish. The nearest herbarium specimen logged in the Consortium of California Herbaria is from 1895 at a location noted as 'Suisun' about 1 mile northwest of the BSA in an area that has been developed. Hogwallow starfish was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Woolly rose-mallow (*Hibiscus lasiocarpos var. occidentalis*)

Woolly rose-mallow is a perennial rhizomatous herb found in freshwater marshes, wet banks, swamps, wetlands, and in riprap on sides of levees, from sea level to 395 feet. It blooms from June through September. This species is endemic to California. Woolly rose-mallow is known from Butte, Contra Costa, Colusa, Glenn, Sacramento, San Joaquin, Solano, Sutter, and Yolo counties. The freshwater marsh provides potential habitat for woolly rose-mallow.

There is 1 CNDDB record for woolly rose-mallow in the nine-quad area surrounding the BSA. The record (Occurrence No. 188) is from 2005, approximately 11.3 miles east of the BSA. A single woolly rose-mallow plant was observed near Calhoun Cut just west of the confluence with Barker Slough and about 1.3 air miles northwest of Peterson Ranch in a stand of *Alnus rhombifolia* and *Rosa californica* on the south side of the waterway. Woolly rose-mallow was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Carquinez goldenbush (*Isocoma arguta*)

Carquinez goldenbush is a perennial shrub found in alkaline soils of valley and foothill grassland from sea level to 70 feet. It blooms August through December. This species is endemic to California. Known from Contra Costa and Solano counties. Portions of the valley floor grassland with elevated alkalinity, alkali meadow, and seasonal wetlands provide potential habitat for Carquinez goldenbush.

There are 14 CNDDB records of Carquinez goldenbush within the nine-quad area surrounding the BSA. The closest (Occurrence No. 6) is from 1994, approximately 2.6 miles southeast of the BSA. The record is for 85 plants observed in hummocky annual grassland on mounds surrounded by vernally wet swales in Solano Loam soil on the north side of SR-12. associated with *Bromus*, *Distichlis spicata*, *Avena*, and *Hemizonia*. Carquinez goldenbush was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Alkali-sink goldfields (*Lasthenia chrysantha*)

Alkali-sink goldfields is an annual herb found in alkaline vernal pools from 0 to 655 feet. Its habitat is also described as "wet saline flats." It blooms February through June. Alkali-sink goldfields Fresno, Kern, Kings, Madera, Merced, Sacramento, Solano, Stanislaus, and Tulare counties. Portions of the valley floor grassland with elevated alkalinity, alkali meadow, and seasonal wetlands provide potential habitat for Coulter goldfields.

There is 1 CNDDB record of alkali-sink goldfields within the nine-quad area surrounding the BSA. The record (Occurrence No. 55) is from an unknown date, approximately 7.8 miles northeast of the BSA. Alkali-sink goldfields plants were mapped around the western portion of the Calhoun Cut Ecological Reserve. The exact date, location, and number of plants are unknown. No alkali-sink goldfields plants were observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Contra Costa goldfields (*Lasthenia conjugens*)

Contra Costa goldfields is an annual herb found in mesic habitats of cismontane woodland, alkaline playas, valley and foothill grassland, and vernal pools from 0 to 1,540 feet. It blooms March through June. This species most likely forms a persistent soil seed bank. The maximum duration of viable seed in the soil is not known. This species is endemic to California. It is known from Alameda, Contra Costa, Mendocino, Monterey, Marin, Napa, Santa Barbara, Santa Clara, Solano, and Sonoma counties. The valley floor grassland, alkali meadow, and seasonal wetlands provide potential habitat for Contra Costa goldfields.

Contra Costa goldfields is federally listed as endangered. Critical habitat for Contra Costa goldfields was designated in 2006.[37] The BSA contains federal designated critical habitat for Contra Costa goldfields. The critical habitat occurs throughout the entire BSA. The primary constituent elements (physical and biological features) essential for the species are: (1) Topographic features characterized by isolated mound and intermound complex within a matrix of surrounding uplands that result in continuously, or intermittently, flowing surface water in the depressional features including swales connecting the pools described below, providing for dispersal and promoting hydroperiods of adequate length in the pools; (2) Depressional features including isolated vernal pools with underlying restrictive soil layers that become inundated during winter rains and that continuously hold water or whose soils are saturated for a period long enough to promote germination, flowering, and seed production of predominantly annual native wetland species and typically exclude both native and non-native upland plant species in all but the driest years. As these features are

[37] Department of the Interior. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants. 71 FR 7118 7316. Federal Register 71, no. 28. February 10, 2006.

inundated on a seasonal basis, they do not promote the development of obligate wetland vegetation habitats typical of permanently flooded emergent wetlands.

There are 16 CNDDB records of Contra Costa goldfields within the nine-quad area surrounding the BSA. The closest CNDDB record (Occurrence No. 42) is approximately 0.6 mile east of the BSA. The record is for approximately 4,000 plants observed in vernal pools southwest of the south gate entrance to Travis Air Force Base in 2016.

Outside of the CNDDB, there is also a known record for plants observed in the BSA based on surveys conducted by LSA Associates in May 2006, March/April 2007, and May 2008 (LSA Associates Inc. 2010). The Contra Costa goldfield plants observed in the BSA were in scattered wetlands on the north half of the site. Most of the goldfields observed on the site during the LSA surveys were common Fremont's goldfields (*Lasthenia fremontii*). The report does not indicate the number of plants observed in the BSA (the BSA is a portion of the area described in the LSA report as the Peterson and Johnson Trust lands (West). The 2010 LSA report describes the following regarding the plants observed in the BSA:

> [. . .] historic leveling of the land has drastically decreased the natural pool/swale topography characteristic of more pristine vernal pool habitats. For example, instead of discrete pools, there are large expanses of grassland that contain marginal wetland characteristics (LSA 2008). The southern portions of the Peterson and Johnson Trust lands (West), Parker Ranch, and the northern portion of the Director's Guild study site are excellent examples of this […] on the Peterson and Johnson Trust lands (West), the southern portions of the site (north of Hwy 12), show characteristics of being a large seasonal wetland; however, only small portions of the site support significant stands of [Contra Costa goldfields].

This species was verified as evident and identifiable at nearby reference populations in April 2021 and in March and April in 2022 and at the Goldfields Conservation Bank site located in Fairfield between Walters Road and Airbase Parkway on April 23, 2021.[38,39] No Contra Costa goldfields were observed in the BSA during the 2021 protocol survey. During the 2022 protocol survey, 47 Contra Costa goldfields plants were documented in Seasonal Wetland (SW) 51 in the western portion of the site. (Figure 1; Attachment C).[40]

Ferris' goldfields (*Lasthenia ferrisiae*)

Ferris' goldfields is an annual herb found in in alkaline, clay substrates in vernal pools from 65 to 2,295 feet. It blooms February through May. Ferris' goldfields is known from Alameda, Butte, Colusa, Contra Costa, Fresno, Kern, Kings, Merced, Monterey, Sacramento, San Joaquin, San Luis Obispo, Solano, Stanislaus, Tulare, and Yolo counties. The valley floor grassland, alkali meadow, and seasonal wetlands provide potential habitat for Ferris' goldfields.

[38] SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation.
[39] SWCA Environmental Consultants (SWCA). 2022. Technical Memorandum. Biological Impacts and Proposed Mitigation Measures.
[40] SWCA Environmental Consultants (SWCA). 2022. 2022 Spring Botanical Survey Results for the Suisun Logistics Center Project, Solano County, California.

The CNDDB does not track records of Ferris' goldfields. The nearest herbarium specimen logged in the Consortium of California Herbaria is from 1971, about 30 miles southeast of the BSA near Byron. The plants were growing in valley grassland along SR-4. No Ferris' goldfields plants were observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Coulter goldfields (*Lasthenia glabrata* ssp. *coulteri*)

Coulter goldfields is an annual herb found in coastal salt marshes and swamps, playas, and vernal pools from 1 to 4,002 feet. Its habitat is also described as "saline places, vernal pools." It blooms February through June. Coulter goldfields is known from Colusa, Merced, Orange, Riverside, Santa Barbara, San Diego, San Luis Obispo, Santa Rosa Island, Solano, Tehama, Ventura, and Yolo counties. It may also occur in Tulare County, where distribution or identity is uncertain. It is presumed extirpated in Kern, Los Angeles, and San Bernardino counties. The valley floor grassland, alkali meadow, and seasonal wetlands provide potential habitat for Coulter goldfields.

There is 1 CNDDB record of Coulter goldfields within the nine-quad area surrounding the BSA. The record (Occurrence No. 124) is from 2018, approximately 4.5 miles east of the BSA. Coulter goldfields plants were mapped around the Wilcox Ranch Preserve. The exact location is unknown. No Coulter goldfields plants were observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Delta tule pea (*Lathyrus jepsonii var. jepsonii*)

Delta tule pea is a perennial herb found in freshwater and brackish marshes and swamps from 0 to 13 feet. It blooms May through July. This species is endemic to California. It is known from Alameda, Contra Costa, Napa, Sacramento, Santa Clara, San Joaquin, Solano, and Sonoma counties. The freshwater marsh in DD-01 and the coastal brackish marsh provide potential suitable habitat for Delta tule pea.

There are 74 CNDDB records of Delta tule pea within the nine-quad area surrounding the BSA. The closest (Occurrence No. 101) is from 2000, approximately 1.8 miles southeast of the BSA. An unknown number of plants were observed near Hill Slough about 0.9 mile northeast of Suisun Hill in Suisun Marsh. Delta tule pea was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Legenere (*Legenere limosa*)

Legenere is an annual herb found in vernal pools from 3 to 2,880 feet. It blooms from April through June. This species is endemic to California. Legenere is known from Alameda, Lake, Monterey, Napa, Placer, Sacramento, Santa Clara, Shasta, San Joaquin, San Mateo, Solano, Sonoma, Stanislaus, Tehama, and Yuba counties. It is presumed extirpated from Stanislaus County. The seasonal wetlands provide potential habitat for legenere.

There are 12 CNDDB records of legenere within the nine-quad area surrounding the BSA. The closest (Occurrence No. 2) is from 1892, is approximately 1.7 miles west of the BSA. Legenere was mapped in the trenches along the railroad about 1 mile northeast of Suisun Station. Legenere was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Heckard's pepper-grass *(Lepidium latipes* var. *heckardii*)

Heckard's pepper-grass is an annual herb found in valley and foothill grassland (alkaline flats) from 6 to 650 feet. It blooms from March through May. This species is endemic to California. It is known from Glenn, Merced, Sacramento, Solano, and Yolo counties. Portions of the valley floor grassland with elevated alkalinity, alkali meadow, and seasonal wetlands provide potential habitat for Heckard's pepper-grass.

There are 2 CNDDB records of Heckard's pepper-grass within the nine-quad area surrounding the BSA. The closest (Occurrence No. 9) is from 2002, approximately 6.7 miles southwest of the BSA. The record is for an unknown number of plants that were observed in alkaline vernal flats along with *Lasthenia fremontii*, *Blennosperma nanum*, *Lolium multiflorum*, *Pleuropogon*, *Deschampsia danthonioides*, *Lepidium nitidum*, *Lepidum oxycarpum, Frankenia salina*, *Cressa truxillensis*, *Alopecurus saccatus,* and *Cotula coronopifolia*. Heckard's pepper-grass was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Showy golden madia (*Madia radiata)*

Showy golden madia is an annual herb found in cismontane woodland valleys and foothill grasslands from 82 to 2,952 feet. It blooms March through May. This species is endemic to California. Showy golden madia is known from Fresno, Kern, San Benito, Santa Clara, San Luis Obispo, and Stanislaus counties. It is presumed extirpated from Contra Costa, Kings, Monterey, Santa Barbara, and San Joaquin counties. The valley floor grassland provides potential habitat for showy golden madia.

There are no CNDDB records of showy golden madia within the nine-quad area surrounding the BSA. According to the Consortium of California Herbaria (specimen number UC112946), the closest collection is from 1908, approximately 18 miles southwest of the BSA near Antioch. The plants were observed at the borders of cultivated fields. Showy golden madia was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Marsh microseris (*Microseris paludosa*)

Marsh microseris is a perennial herb found in closed-cone coniferous forest, cismontane woodland, coastal scrub, and moist valley and foothill grassland from 10 to 1,000 feet. Hayes and Taylor describe habitat as vernally moist to saturated sites in coastal terrace prairie along the coast. It blooms April through June. This species is endemic to California. It is known from Mendocino, Monterey, Marin, San Benito, Santa Cruz, San Luis Obispo, Solano and Sonoma counties. It is presumed extirpated in San Francisco and San Mateo counties. The valley floor grassland, alkali meadow, and seasonal wetlands provide potential habitat for marsh microseris.

There is 1 CNDDB record of marsh microseris within the nine-quad area surrounding the BSA. The record (Occurrence No. 39) is from 2007, approximately 0.8 mile southeast of the BSA. Marsh microseris was observed in grassland habitat 0.25 mile east of Scally Road, north of SR-12 and east of Suisun City. Marsh microseris was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*)

Baker's navarretia is an annual herb found in mesic habitats of cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, and vernal pools from 15 to 5,700 feet. It blooms April through July. This species is endemic to California. Baker's navarretia is known from Colusa, Glenn, Lake, Lassen, Mendocino, Marin, Napa, Solano, Sonoma, Sutter, Tehama, and Yolo counties. The valley floor grassland, alkali meadow, and seasonal wetlands provide potential habitat for Baker's navarretia.

There are 11 CNDDB records of Baker's navarretia within the nine-quad area surrounding the BSA. The closest record (Occurrence No. 42) is from 1930, approximately 2.7 miles north of the BSA. Baker's navarretia was observed in a dry vernal pool near Vacaville. The exact location is unknown. Baker's navarretia was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Colusa grass (*Neostapfia colusana*)

Colusa grass is an annual herb found in large adobe vernal pools from 15 to 660 feet. It blooms May through August. Members of the Orcuttieae tribe inhabit large vernal pools or playas with inundation lasting until May or June, in areas of the pools where other plants are almost entirely absent. In the Sacramento Valley Colusa grass is known from the rim of alkaline basins. This species is endemic to California. Colusa grass is known from Glenn, Merced, Solano, Stanislaus, and Yolo counties. It is presumed extirpated from Colusa County. The deeper seasonal wetlands in the southern portion of the BSA provide potential habitat for Colusa grass.

Colusa grass is federally listed as endangered. Critical habitat for Colusa grass was designated in 2006.[41] The BSA does not contain federally designated critical habitat for Colusa grass. The nearest critical habitat occurs approximately 23.5 miles northeast. There are 4 CNDDB records of Colusa grass within the nine-quad area surrounding the BSA. The closest (Occurrence No. 48) is from 2010, approximately 6.1 miles east of the BSA. One plant was observed in a saline-alkaline playa in annual grassland located southwest of Olcott Lake. Colusa grass was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period. Seasonal wetlands in the central and northern portion of the BSA do not inundate at sufficient depths or durations to support this species.

San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*)

San Joaquin Valley Orcutt grass is an annual herb found in vernal pools from 30 to 2,475 feet. It blooms April through September. Members of the Orcuttieae tribe inhabit large vernal pools or playas with inundation lasting until May or June, in areas of the pools where other plants are almost entirely absent. This species is endemic to California. San Joaquin Valley Orcutt grass is known from Fresno, Madera, Merced, Solano, and Tulare counties. It is presumed extirpated in Stanislaus County. Nearly all occurrences of San Joaquin Valley Orcutt grass are on the east side of the San Joaquin Valley. The deeper seasonal wetlands in the southern portion of the BSA provide potential habitat for San Joaquin Valley Orcutt grass.

[41] Department of the Interior. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants. 71 FR 7118 7316.Federal Register 71, no. 28. February 10, 2006.

San Joaquin Valley Orcutt grass is federally listed as endangered. Critical habitat for San Joaquin Valley Orcutt grass was designated in 2006.[42] The BSA does not contain federally designated critical habitat for San Joaquin Valley Orcutt grass. The nearest critical habitat occurs approximately 97.5 miles southwest. There is 1 CNDDB record of San Joaquin Valley Orcutt grass within the nine-quad area surrounding the BSA. The record (Occurrence No. 63) is from 2011, approximately 5.4 miles northeast of the BSA. Thousands of plants were observed in an alkali playa pool on Solano Loam, and in adjacent vernal pools and swales just east of Travis Air Force Base near Muzzy Ranch mitigation bank. San Joaquin Valley Orcutt grass was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period. Seasonal wetlands in the central and northern portion of the BSA do not inundate at sufficient depths or durations to support this species.

Bearded popcorn flower (*Plagiobothrys hystriculus*)

Bearded popcorn flower is an annual herb found in mesic valley and foothill grassland and vernal pools and swales from 0 to 900 feet. It blooms April through May. This species is endemic to California. Bearded popcorn flower is known only from Solano County, primarily in the Montezuma Hills. The valley floor grassland, alkali meadow, and seasonal wetlands provide potential habitat for bearded popcorn flower.

There are 12 CNDDB records of bearded popcorn flower within the nine-quad area surrounding the BSA. The closest (Occurrence No. 12) is from 2006, and is mapped overlapping the entire BSA, ranging from the south of Travis Air Force Base to north of Hammond Island. The record is for bearded popcorn flower observed in vernal swales and pools associated with *Lolium multiflorum*, *Eryngium aristulatum*, *Achyrachaena mollis*, *Juncus bufonius*, *Lythrum Hyssopifolium*, *Cicendia quadrangularis*, *Ranunculus muricatus*, and *Hordeum marinum*. Location information for the record is suppressed by the CNDDB, but the record does state that the plants occur within a gas pipeline right-of-way with cattle grazing. Information in the herbarium specimen sources for Occurrence No. 12 indicate the plants occur at a specific location over 5 miles southeast of the BSA. No known bearded popcorn plant populations occur in the BSA or within 5 miles. Bearded popcorn flower was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

California alkali grass (*Puccinellia simplex*)

California alkali grass is an annual herb found in alkaline, vernally mesic sinks, flats, and lake margins within chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools from 7 to 3,051 feet. It blooms March through May. California alkali grass is known from Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kern, Lake, Los Angeles, Madera, Merced, Napa, San Bernardino, Santa Clara, Santa Cruz, San Luis Obispo, Solano, Stanislaus, Tulare, and Yolo counties. It is presumed extirpated from Kings County. Portions of the valley floor grassland with elevated alkalinity, alkali meadow, and seasonal wetlands provide potential habitat for California alkali grass.

There are 3 CNDDB records of California alkali grass within the nine-quad area surrounding the BSA. The closest (Occurrence No. 60) is from 1938, approximately 2.7 miles west of the BSA. The exact

[42] Department of the Interior. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants. 71 FR 7118 7316.Federal Register 71, no. 28. February 10, 2006.

location is unknown. California alkali grass was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Long-styled sand-spurrey (*Spergularia macrotheca* var. *longistyla*)

Long-styled sand-spurrey is a perennial herb found in alkaline marshes, mud flats, meadows, and hot springs below 650 feet. It blooms in spring; February through May. This species is endemic to California. Long-styled sand-spurrey is known from Alameda, Contra Costa, Napa, and Solano counties. The seasonal wetland, alkali meadow, and coastal brackish marsh provide potential habitat for long-styled sand-spurrey.

There are 3 CNDDB records of long-styled sand-spurrey within the nine-quad area surrounding the BSA. The closest (Occurrence No. 18) is from 1953, approximately 2.7 miles west of the BSA. The record is based on long-styled sand-spurrey that was observed in an alkaline, open field in Suisun City. The exact location is unknown. Long-styled sand-spurrey was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period. Closely related sticky sand-spurrey (*Spergularia macrotheca* var. *leucantha*; no special-status) was observed in and among the hyperalkaline/hypersaline hummocky seasonal wetlands in the southernmost portion of the BSA.

Slender-leaved pondweed (*Stuckenia filiformis* ssp. *alpina*)

Slender-leaved pondweed is a perennial rhizomatous aquatic herb found in assorted shallow freshwater marshes and swamps from 950 to 7,100 feet. It blooms May through June. Slender-leaved pondweed is known from the Klamath Ranges, central high Sierra Nevada, Great Valley, Central Coast, Bay Area, and Great Basin. The freshwater marsh in DD-01 provides potential habitat for slender-leaved pondweed.

There is 1 CNDDB record of slender-leaved pondweed within the nine-quad area surrounding the BSA. The record (Occurrence No. 17) is from 1981, approximately 3.6 miles northwest of the BSA. The record is for slender-leaved pondweed that was observed around the pond near Fairfield City Hall. Slender-leaved pondweed was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Suisun Marsh aster (*Symphyotrichum lentum*; syn. *Aster lentus*)

Suisun Marsh aster is a perennial rhizomatous herb found in brackish and freshwater marshes and swamps from 0 to 10 feet. It blooms May through November. This species is endemic to California. Suisun Marsh aster is known from Contra Costa, Napa, Sacramento, San Joaquin, Solano, and Yolo counties. The freshwater marsh in DD-01 and the coastal brackish marsh provide potential habitat for Suisun Marsh aster.

There are 71 CNDDB records of Suisun Marsh aster within the nine-quad area surrounding the BSA. The closest (Occurrence No. 9) is from 2016, approximately 0.6 mile southwest of the BSA. The record is for numerous Suisun Marsh aster colonies observed in the brackish slough and riverbanks affected by tidal fluctuations along Hill, Peytonia, Boynton and Sheldrake sloughs near south Suisun City. The Suisun Marsh aster was associated with *Typha*, Juncus, *Schoenoplectus acutus* var. *occidentalis*, *Baccharis*, *Pluchea odorata*, and *Lathyrus jepsonii* var. *jepsonii*. Suisun Marsh aster was

not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period.

Saline clover (*Trifolium hydrophilum*)

Saline clover is an annual herb found in salt marshes and swamps, mesic or alkaline valley and foothill grasslands, and vernal pools from sea level to 985 feet. It blooms April through June. This species is endemic to California. Saline clover is known from Alameda, Contra Costa, Colusa, Lake, Monterey, Napa, Sacramento, San Benito, Santa Clara, Santa Cruz, San Joaquin, San Luis Obispo, San Mateo, Solano, Sonoma, and Yolo counties. The valley floor grassland, alkali meadow, and seasonal wetlands provide potential habitat for saline clover.

There are 8 CNDDB records of saline clover within the nine-quad area surrounding the BSA. The closest (Occurrence No. 10) is from 2007, approximately 2.8 miles north of the BSA. The record is for less than 100 plants observed in scattered pools and swales with alkaline soil substrates between the railroad tracks to the south and Cement Hill Road to the north. The saline clover was associated with *Poa annua*, *Lepidium latipes* var. *latipes*, *Hordeum depressum*, *Bromus hordeaceus*, *Trifolium depauperatum*, *T. truncatum*, and *Lasthenia conjugens*.

An estimated 885 saline clover plants were mapped within the BSA in April 2021. An additional 20 saline clover plants were observed during 2022 rare plant surveys in a new location in the centra-southern portion of the BSA, to the north of the 885 plants mapped in April 2021 (Figure 1; Attachment C).[43] The saline clover plants were in flower and fruit. The plants were growing with Italian rye grass, Mediterranean barley, and dwarf sack clover (*Trifolium depauperatum* var. *depauperatum*).

Solano grass (*Tuctoria mucronata*)

Solano grass is an annual herb found in mesic soils and vernal pools in valley and foothill grassland from 16 to 32 feet. It blooms from April through August. Members of the Orcuttieae tribe inhabit large vernal pools or playas with inundation lasting until May or June, in areas of the pools where other plants are almost entirely absent. Solano grass is known only from alkaline soils of the Pescadero series. This species is endemic to California. Solano grass is known from only three occurrences: one at Olcott Lake at Jepson Prairie Preserve, one nearby on private land, and one south of Davis on federal land. The deeper seasonal wetlands in the southern portion of the BSA provide potential habitat for Solano grass.

Solano grass is federally listed as endangered. Critical habitat for Solano grass was designated in 2006.[44] The BSA does not contain federally designated critical habitat for Solano grass. The nearest critical habitat occurs approximately 23.5 miles northeast.

There are 2 CNDDB records of Solano grass within the nine-quad area surrounding the BSA. The closest (Occurrence No. 2) is from 2010, approximately 6.1 miles northeast of the BSA. The record is

[43] SWCA Environmental Consultants (SWCA). 2022. 2022 Spring Botanical Survey Results for the Suisun Logistics Center Project, Solano County, California.

[44] Department of the Interior. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants. 71 FR 7118 7316.Federal Register 71, no. 28. February 10, 2006.

for approximately 64 plants observed in large saline-alkaline playa pools in annual grasslands, in association with *Malvella leprosa*, *Frankenia salina*, *Cressa truxillensis*, *Eryngium aristulatum*, *Distichlis spicata*, and *Neostapfia colusana*. Solano grass was not observed in the BSA during the protocol botanical survey conducted during the evident and identifiable period. Seasonal wetlands in the central and northern portion of the BSA do not inundate at sufficient depths or durations to support this species.

Evaluation of Sensitive Natural Communities

Waters and Wetlands

The BRE incorporates the results of a field verified Aquatic Resource Delineation Report (ARDR) prepared to USACE minimum standards. The wetlands and waters are summarized previously in Table 3.3-2 and shown on Exhibit 3.3-1. Within the BSA, there is a total of approximately 19.41 acres of waters and wetlands consisting of approximately 14.57 acres of seasonal wetland (plus an additional 0.65 acre of seasonal wetland within Drainage Ditch DD-02), 0.74 acre of freshwater marsh (found only within Drainage Ditch DD-01), 3.36 acres of coastal brackish marsh, and 0.09 acre of roadside ditches.

The approximately 19.41 acres of wetlands and waters in the BSA are potential Clean Water Act Section 404 jurisdictional features and potential waters of the State under the Porter-Cologne Water Quality Control Act and the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to waters of the State. The drainage ditches and some of the wetlands are likely regulated under to the CDFW Lake and Streambed Agreement Program (Fish and Game Code [FGC] § 1600). With the possible exception of the roadside ditches, placement of fill in these features is expected to require a permit from the USACE and a Water Quality Certification from the Regional Water Quality Control Board. Alteration of the flow, bed, bank, or riparian vegetation associated with the channel features would require a CDFW Lake and Streambed Alteration Agreement.

Sensitive Vegetation Types

In addition to the approximately 19.41 acres of wetlands and waters described above, there are approximately 16.91 acres of sensitive (Rank S2) non-wetland alkali meadow in the BSA. Approximately 43.08 acres of sensitive Centromadia parryi Herbaceous Alliance (Rank S2) occurs in the BSA, primarily in the areas mapped as valley floor grassland. Portions of the alkali meadow and seasonal wetlands located within alkali meadow in the southern portion of the BSA may contain Cressa truxillensis–Distichlis spicata Herbaceous Alliance (Rank S2) and Frankenia salina Herbaceous Alliance (Rank S3). Woody riparian vegetation present in the BSA consists of one white alder tree along DD-01 (northern portion), 2 ash trees along DD-01 (southern portion), and several Lombardy poplar trees along DD-02 (southern portion adjacent to SR-12). The riparian trees are shown in the photographs in Appendix C.

Alkali meadow, Centromadia parryi Herbaceous Alliance, Cressa truxillensis–Distichlis spicata Herbaceous Alliance, and Frankenia salina Herbaceous Alliance have State rarity rankings of S2 or S3 and are of conservation concern because they are of limited distribution and vulnerable or imperiled Statewide. Analysis of potential impacts to sensitive natural communities are discussed in further

detail in Impact BIO-2. Impacts to the ditches and the riparian trees along the ditches are regulated under the CDFW Lake and Streambed Alteration Agreement program.

3.3.3 - Regulatory Framework

The Endangered Species Act

The federal Endangered Species Act, administered by the USFWS and National Marine Fisheries Service (NOAA Fisheries), provides protection to plant and wildlife species listed as endangered or threatened. In general, USFWS has jurisdiction over terrestrial and freshwater species, while NOAA Fisheries has jurisdiction over ocean-going species.

Section 9 of the Endangered Species Act generally prohibits all persons from causing the "take" of any member of a listed species (16 USC § 1538). This prohibition applies mainly to animals; it only extends to plants in areas “under federal jurisdiction” and plants already protected under State law. (*Id*., subd. (a)(2)(B); see also *Northern Cal. River Watch v. Wilcox* (9th Cir. 2010) 620 F.3d 1075).

“Take” is defined in statute as, " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC § 1532(19)). Harass is defined in regulation as " . . . an intentional or negligent act or omission that creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns that include, but are not limited to, breeding, feeding, or sheltering." (See 50 Code of Federal Regulations [CFR] § 17.3). Harm is defined in regulation as " . . . significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering.” (*Id*.) Despite the general prohibition against take, the Endangered Species Act in some circumstances permits “incidental take,” which means take that is incidental to, but not the purpose of, the carrying out of an otherwise lawful activity (16 USC § 1539(a)). Under Section 10 of the Endangered Species Act, persons seeking permission to engage in actions that could result in such incidental take can obtain such permission through the approval of a Habitat Conservation Plan (HCP) by either USFWS or NOAA Fisheries (16 USC § 1539(a)).

Proposed federal actions that would result in take of a federal-listed or proposed species require consultation with USFWS or NOAA Fisheries under Section 7 of the Endangered Species Act. (*Id*., § 1536). The objective of consultation is to determine whether the proposed federal action would jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat. Where such an outcome would not occur, USFWS or NOAA Fisheries must still impose reasonable and prudent measures to minimize the effects of the incidental taking. Where such an outcome could occur, USFWS or NOAA Fisheries must propose reasonable and prudent alternatives that, if implemented, would avoid such an outcome. (*Id*.)

Compliance with the Endangered Species Act can be achieved under Section 7 or 10 of the Endangered Species Act depending on the involvement of the federal government. Section 7 requires federal agencies to make a finding on all federal actions, including the approval by an agency of a public or private action, such as the issuance of a “404 permit” for filling wetlands by the USACE, on the potential of the action to jeopardize the continued existence of any listed species impacted by the action or to result in the destruction or adverse modification of such species’ critical

habitat. Provisions of Section 10 are implemented when there is no federal involvement in a project except compliance with the Endangered Species Act. A take not specifically allowed by federal permit under Section 7 or Section 10(a)(1)(B) of the Endangered Species Act is subject to enforcement through civil or criminal proceedings under Section II of the Endangered Species Act.

The Endangered Species Act and Clean Water Act (CWA) Section 404 guidelines prohibit the issuance of wetland permits for projects that jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species. The USACE must consult with the USFWS or NOAA Fisheries when threatened or endangered species under their jurisdiction may be affected by a proposed project. In the context of the proposed project, the Endangered Species Act would be initiated if development resulted in take of a threatened or endangered species or if issuance of a Section 404 permit or other federal agency action could result in take of an endangered species or adversely modify critical habitat of such a species. As noted previously, the project site is within the USFWS-designated critical habitat for Contra Costa goldfields, vernal pool fairy shrimp, vernal pool tadpole shrimp, and conservancy fairy shrimp.

Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of State and federal laws. The federal MBTA of 1989 prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This Act encompasses whole birds, parts of birds, bird nests, and eggs (See 16 USCA § 703). The MBTA makes it unlawful to take (i.e., pursue, kill, harm, harass) any migratory bird or their active nests.

Clean Water Act

The USACE regulates discharge of dredge or fill material into waters of the United States under Section 404 of the CWA. “Discharges of fill material” is defined as the addition of fill material into waters of the United States, including, but not limited to, the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; fill for intake and outfall pipes and subaqueous utility lines (33 CFR § 328.2(f)). In addition, Section 401 of the CWA (33 USC 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

As recently defined by the United States Supreme Court in *Sackett v. Environmental Protection Agency*, the statutory term, “waters of the United States,” includes relatively permanent, standing, or continuously flowing bodies of water forming geographical features that are described in ordinary parlance as streams, oceans, rivers, and lakes, as well as wetlands that are, as a practical matter, indistinguishable from waters of the United States. Wetlands may come within this definition despite temporary interruptions in surface connection may sometimes occur because of phenomena like low tides or dry spells. “Neighboring” wetlands may not qualify, however, unless they are connected to waters such as streams, oceans, rivers, and lakes.

Under federal regulations that predate the *Sackett* decision, methods for delineating wetlands and non-tidal waters are described below.

- Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR § 328.3(b)). Presently, to be a wetland, a site must exhibit three wetland criteria: hydrophytic vegetation, hydric soils, and wetland hydrology existing under the "normal circumstances" for the site.
- The lateral extent of non-tidal waters is determined by delineating the ordinary high water mark (OHWM) (33 CFR § 328.4(c)(1)). The OHWM is defined by the USACE as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR § 328.3(e)).

State

California Endangered Species Act

The CDFW administers a number of laws and programs designed to protect fish and wildlife resources. Principal of these is the California Endangered Species Act of 1984 (CESA) (FGC § 2050 *et seq*.), which regulates the listing and take of State endangered and threatened species, as well as candidate species. Under Section 2081 of CESA, CDFW may authorize take of an endangered and/or threatened species, or candidate species, by a permit or Memorandum of Understanding (MOU) for scientific, educational, or management purposes. In approving an incidental permit, CDFW must ensure, among other things, that "[t]he impacts of the authorized take shall be minimized and fully mitigated." Further, "[t]he measures required to meet this obligation shall be roughly proportional in extent to the impact of the authorized taking on the species. Where various measures are available to meet this obligation, the measures required shall maintain the applicant's objectives to the greatest extent possible. All required measures shall be capable of successful implementation."

Native Plant Protection Act

The legal protection afforded listed plants under this act includes provisions that prohibit the taking of plants from the wild and impose a salvage requirement for landowners. If a landowner has been informed of a listed plant species on his property, CDFW must be notified at least 10 days in advance of any land use change that might affect the species or its habitat, thereby affording CDFW an opportunity to conduct a salvage operation. Candidate species are also protected from taking by the Native Plant Protection Act (Fish & G. Code, §§ 1900-1913).

CDFW has demonstrated a general policy of regarding many of the plants on the CNPS Lists 1 and 2 as meeting the definitions of Chapter 10, Section 1901 of the Native Plant Protection Act. As such, those plants also qualify for protection under the California Environmental Quality Act (CEQA). In addition, plants on CNPS Lists 3 and 4, as well as unique plant communities usually informally protected under this act.

Natural Communities Conservation Planning Act

The Natural Communities Conservation Planning Act is set forth in Fish and Game Code Sections 2800–2835. The intent of the legislation is to provide for conservation planning as an officially recognized policy that can be used as a tool to eliminate conflicts between the protection of natural resources and the need for growth and development. In addition, the legislation promotes conservation planning as a means of coordination and cooperation among private interests, agencies, and landowners, and as a mechanism for multi-species and multi-habitat management and conservation. The development of Natural Community Conservation Plans (NCCPs) is an alternative to obtaining take authorization under Section 2081 of the Fish and Game Code.

California Department of Fish and Game Codes

Sections 1600–1603

Streambeds are potentially subject to regulation by the CDFW under Sections 1600–1603 of the California Fish and Game Code. Streambeds are defined in the California Code of Regulations as a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish or other aquatic life. This definition includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation. CDFW generally asserts that its jurisdiction extends to the edge of the riparian vegetation canopy associated with any stream. Any work within a streambed or the removal of associated riparian vegetation requires the acquisition of a Streambed Alteration Agreement from the CDFW.

Nesting Birds and Birds of Prey

Sections 3503, 3513, and 3800 of the California Fish and Game Code protect all native birds and their nests and make it unlawful to take (i.e., pursue, kill, harm, harass) any migratory bird and their active nests. Birds of prey (the orders Falconiformes and Strigiformes) are specifically protected in California under provisions of the California Fish and Game Code Section 3503.5. This section of the Code establishes that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code. Disturbance that causes nest abandonment and/or loss of reproductive effort, such as construction during the breeding season, is considered take by the CDFW.

Fully Protected Species

Fish and Game Code Sections 3511, 3513, 4700, and 5050 pertain to fully protected wildlife species (birds in Sections 3511 and 3513, mammals in Section 4700, and reptiles and amphibians in Section 5050) and strictly prohibit the take of these species, except under narrow conditions for scientific research or the protection of livestock, or if an NCCP has been adopted. These species "…may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species," although take may be authorized for necessary scientific research. This language makes the "fully protected" designation the strongest and most restrictive regarding the "take" of these species. CDFW cannot issue an incidental take permit for fully protected species under the Endangered Species Act but can where an NCCP is in place.

California Department of Fish and Wildlife Species of Concern

In addition to formal listing under the Endangered Species Act and CESA, species receive additional consideration by CDFW and local lead agencies during the CEQA process. Species that may be considered for review are included on a list of "Species of Special Concern," developed by the CDFW. It tracks species in California whose numbers, reproductive success, or habitat may be threatened. In addition to Species of Special Concern, the CDFW identifies animals that are tracked by the CNDDB but warrant no federal interest and no legal protection. These species are identified as California Special Animals.

Porter-Cologne Water Quality Control Act

Waters of the State fall under the jurisdiction of the nine Regional Water Quality Control Boards (RWQCBs). The Porter-Cologne Water Quality Control Act (Water Code, § 13000 *et seq.*) is California's primary water quality control statute.). Under Porter-Cologne, each RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution. California Water Code Section 13260 requires any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the State to file a report of discharge (an application for waste discharge requirements [WDRs]) with the applicable RWQCB. Construction activities that may discharge wastes into the waters of the State must meet the discharge control requirements of the Porter-Cologne Act.

Historically, California relied on its authority under Section 401 of the CWA to regulate discharges of dredged or fill material to California waters. That section requires an applicant to obtain "water quality certification" from the California State Water Resources Control Board (State Water Board) through its RWQCBs to ensure compliance with State water quality standards before certain federal licenses or permits may be issued. The permits subject to Section 401 include permits for the discharge of dredged or fill materials (CWA Section 404 permits) issued by the USACE. Waste discharge requirements under the Porter-Cologne Water Quality Control Act were typically waived for projects that required certification.

In light of United States Supreme Court cases that have emphasized the somewhat limited jurisdiction of USACE to protect wetlands under the CWA, the RWQCBs have needed to rely on the report of waste discharge process to address wetlands that qualify as waters of the State but not waters of the US. Under the Porter-Cologne Act definition, waters of the State are "any surface water or groundwater, including saline waters, within the boundaries of the State." (Water Code § 13050(e)). Although all waters of the United States that are within the borders of California are also waters of the State, the reverse is not necessarily true. Therefore, California retains authority to regulate discharges of waste into any waters of the State, discharges to receiving waters more broadly than the CWA does.

The State Water Board's State Wetland Definition and Procedures for Discharges of Dredge of Fill Material to Waters of the State (the Procedures), adopted April 2, 2019 along with the Implementation Guidance for the Procedures (the Implementation Guidance), dated April 2020, defines a wetland as an area that under normal circumstances (1) has continuous or recurrent

saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area' s vegetation is dominated by hydrophytes or the area lacks vegetation. The Procedures, along with the Implementation Guidance, state that the permitting authority (e.g., RWQCB) shall rely on any wetland area delineation from a final aquatic resource report verified by the USACE. If the USACE does not require an ARDR, an applicant must submit a delineation of all waters, but these delineations shall be verified by RWQCB' s staff during application review. Similarly, if the USACE does not require a delineation, but similar information is prepared for the CDFW, the applicant can submit that information to the RWQCB, which shall determine if it is sufficient for the RWQCB' s purposes. In addition, as a matter of policy, the State Water Board/RWQCBs consider wetlands and waters determined to be non-jurisdictional by the USACE/United States Environmental Protection Agency (EPA) under the CWA and federal regulations to remain jurisdictional as waters of the State subject to State Water Board/RWQCB jurisdiction.

The Procedures, along with the Interim Guidance, also include procedures for the submission, review, and approval of applications for activities that could result in the discharge of dredged or fill material to any waters of the State and include elements of the CWA Section 404(b)(1) Alternatives Analysis Guidelines, thereby bringing uniformity to the State Water Board regulation of discharges of dredged or fill material to all waters of the State. Typically, the USACE requires a CWA 404(b)(1) Alternatives Analysis for wetland impacts greater than 0.50 acre. The Procedures require an alternatives analyses to be completed in accordance with a three tier system. The level of effort required for an alternatives analysis within each of the three tiers shall be commensurate with the significance of the impacts resulting from the discharge.

California Native Plant Society

Although not a public agency with regulatory powers, the California Native Plant Society (CNPS), a nonprofit corporation, maintains a rank of plant species native to California that has low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS ranked plants often receive consideration under CEQA review under the broad definitions of the terms "endangered" and "rare" species found in CEQA Guidelines Section 15380. The following list defines the CNPS ranks:

- Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
- Rank 1B: Plants rare, threatened, or endangered in California and elsewhere
- Rank 2: Plants rare, threatened, or endangered in California but more numerous elsewhere
- Rank 3: Plants about which more information is needed
- Rank 4: Watch List: Plants of limited distribution

All plants appearing on CNPS List 1 or 2 are generally considered to meet CEQA Guidelines Section 15380 criteria. While only some of the plants ranked 3 and 4 meet the definitions of threatened or endangered species, the CNPS recommends that all Rank 3 and Rank 4 plants be evaluated for consideration under CEQA.

California Department of Fish and Wildlife–Staff Report on Burrowing Owl Mitigation

CDFW issued survey protocols for conducting burrowing owl breeding and nonbreeding season surveys and pre-construction surveys in the *Staff Report on Burrowing Owl Mitigation* dated March 7, 2012.

In summary, for breeding season surveys a minimum of four survey visits shall be conducted: (1) at least one site visit between 15 February and 15 April, and (2) a minimum of three survey visits, at least three weeks apart, between 15 April and 15 July, with at least one visit after 15 June. The survey shall be conducted in all portions of the project site that fit the description of habitat in Appendix A of the staff report. Surveys shall be walked in straight-line transects spaced 7 m to 20 m apart, adjusting for vegetation height and density. At the start of each transect and, at least, every 100 m, the surveyor shall scan the entire visible project area for burrowing owls using binoculars and record all potential burrows used by burrowing owls as determined by the presence of one or more burrowing owls, pellets, prey remains, whitewash, or decoration. For nonbreeding season surveys, the methods described above for breeding season surveys are followed but conducted over at least four visits, spread evenly throughout the nonbreeding season.

Pre-construction surveys, referred to as "take avoidance surveys" in the staff report, are intended to detect the presence of burrowing owls on a project site at a fixed period in time and inform necessary take avoidance actions. Take avoidance surveys may detect changes in owl presence such as colonizing owls that have recently moved onto the site, migrating owls, resident burrowing owls changing burrow use, or young of the year that are still present and have not dispersed. In summary, survey methodology for pre-construction surveys should be conducted no less than 14 days prior to initiating ground disturbance activities.

Regional

Solano Multiple Species Habitat Conservation Plan

The Draft Solano MSHCP is designed to establish a framework for complying with State and federal endangered species regulations while accommodating urban growth, development of infrastructure, and ongoing operations and maintenance activities associated with flood control, irrigation facilities, and other public infrastructure undertaken by or under the permitting authority of the MSHCP participants within Solano County over the next 30 years. The Solano MSHCP is currently an administrative final draft document and at the time of writing of this Draft Environmental Impact Report (Draft EIR) has not been certified.

The MSHCP provides a comprehensive conservation program for impacts on Covered Species and Natural Communities for designated activities within the planning area and applicable Covered Activity Zones. Covered Activities affecting Covered Species within the Plan Area have been divided into four broad categories based on land use. As defined in the Draft MSHCP, the City is in an Urban Zone, which consists of all ground- or habitat-conserving projects and activities needed to accommodate urban growth, including infrastructure. It also includes annexations (MSHCP Section 2.4.1). The plan is also divided into three Covered Activity Zones in which varying types of activities affected Covered Species will be authorized when the MSHCP is adopted. The project site is in Covered Activity Zone 1 (MSHCP Figure 1-4). .Local

General Plan

The City of Suisun City General Plan sets forth the following goals, objectives, and policies relevant to biological resources:

Goal OSC-1 Protect wildlife habitat and movement corridors through the preservation of open space.

Objective OSC-1 Increase the number of new developments that preserve and integrate drainages and other wildlife movement into site plans.

Policy OSC-1.1 The City will require biological resources investigations for proposed developments that could adversely affect potential wildlife movement corridors to determine the value and importance of such corridors to daily and/or seasonal movement and dispersal of local wildlife and identify measures to minimize and avoid adverse effects on wildlife movement. Wildlife movement corridors include marshlands, waterways, and other types of corridors that provide for movement and dispersal.

Policy OSC-1.2 New developments in areas with waterways, riparian habitats, and stands of mature trees shall preserve and incorporate those features into project site planning and design, to the greatest extent feasible.

Policy OSC-1.3 New developments shall be designed to protect and preserve natural watercourses and drainage channels to the maximum extent feasible.

Policy OSC-1.4 New development shall preserve and incorporate into site planning natural drainages that could support riparian habitat.

Policy OSC-1.8 Roads, water lines, sewer lines, drainage facilities, and other public facilities constructed to serve development shall be located and designed to avoid substantial impacts to stream courses, associated riparian areas, and wetlands, to the greatest practical extent.

Goal OSC-2 Ensure consistency with Solano Multiple Species Habitat Conservation Plan.

Objective OSC-2 New development in the planning area supports the conservation objectives of the Solano MSHCP.

Policy OSC-2.1 The City will coordinate environmental review and mitigation requirements with the Solano MSHCP.

Policy OSC-2.3 The City will require that new developments comply with relevant conservation measures detailed within the Conservation Strategy chapter of the Solano MSHCP, as applicable.

3.3.4 - Methodology

SWCA prepared a 2021 BRE that evaluated the biological characteristics of the project site.[45] SWCA also prepared a 2022 technical memorandum describing impacts and proposed mitigation measures for the project, which was followed by an Addendum to the memorandum prepared in 2023 by Huffman-Broadway Group.[46,47] These reports can be found in Appendix C. Also included in Appendix C are two separate technical reports prepared by HBC: a 2023 Federally Listed Large Brachiopod Survey Report and a 2023 California Tiger Salamander Habitat Assessment.[48,49] M&A conducted a protocol survey of the project area for nesting Swainson's hawk, a California Tiger Salamander assessment, and a Federally Listed Large Brachiopod assessment in 2024 for the roadside ditches along Petersen Road. [50,51,52] The M&A reports can be found in Appendix C.

The following is a summary of the methodology employed primarily by SWCA during preparation of the BRE.

Literature and Database Review

SWCA Environmental Consultants obtained lists from the USFWS (USFWS Sacramento Office, unofficial list dated November 9, 2021) and the National Marine Fisheries Service (NOAA Fisheries; unofficial list obtained August 26, 2020) that identify federal-listed species and critical habitat that could potentially occur in or could be affected by the project. The California Natural Diversity Database (CNDDB; data dated November 9, 2021) and the California Native Plant Society Electronic Inventory (CNPSEI; November 9, 2021) were queried for known records of special-status species in the vicinity of the study area, on the Denverton quad and eight surrounding USGS quads. The following nine USGS quads were evaluated: Antioch North, Birds Landing, Denverton, Dozier, Elmira, Fairfield North, Fairfield South, Honker Bay, and Vine Hill. An updated database search of the CNDDB was conducted in July of 2023 during finalization of the Draft EIR Biological Resources section. Lists of CDFW special-status species reviewed included Special Animals, State and Federally Listed Endangered and Threatened Animals of California, Special Vascular Plants, Bryophytes, and Lichens List, and State and Federally Listed Endangered, Threatened, and Rare Plants of California.

The 36 species proposed for coverage by the draft Solano HCP and the 36 special management species in the draft Solano HCP are evaluated in this report.

Survey Dates and Personnel

Biological, botanical, and wetland delineation fieldwork was conducted on numerous dates from October 2020 through November 2024, as summarized in Table 3.3-4. The protocol botanical survey

[45] SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation.
[46] SWCA Environmental Consultants (SWCA). SWCA. 2022. Technical Memorandum. Biological Impacts and Proposed Mitigation Measures.
[47] Huffman-Broadway Group. 2023. Updated Addendum to SWCA's Technical Memorandum.
[48] Helm Biological Consulting (HBC). 2023. Federally Listed Large Branchiopod Sampling Report.
[49] Helm Biological Consulting (HBC). 2023. Habitat Assessment for California Tiger Salamander.
[50] Monk & Associates (M&A). 2023. Protocol Level Nesting Swainson's Hawk Survey Report.
[51] Monk & Associates (M&A). 2024. Amendment to Helm's Habitat Assessment for California Tiger Salamander, Roadside Ditch along North Side of Peterson Road.
[52] Monk & Associates (M&A). 2024. Vernal Pool Branchiopod Wet Season Surveys, Northern Peterson Road Ditch

was conducted in October 2020 and March, April, July, August 2021, March and April 2022, during the published blooming period for special-status plants with potential to occur in the project site.

Table 3.3-4: Survey Dates and Personnel

Date(s)	Personnel	Surveys Conducted
10/28/20 10/29/20	John Little, PhD Mike Bower, MS Alex Jamal, BS	Protocol botanical survey General biological survey Wetland delineation
11/19/20 11/20/20	John Little, PhD Alex Jamal, BS	General biological survey Wetland delineation
02/04/21 02/05/21 02/26/21	Alex Jamal, BS	Wetland delineation
03/08/21 03/11/21 03/12/21	Mike Bower, MS Monica Coll, BS Alex Jamal, BS	General biological survey Protocol botanical survey Wetland delineation
03/17/21 03/19/21	Mike Bower, MS Alex Jamal, BS	General biological survey Protocol botanical survey Wetland delineation
04/22/21	Mike Bower, MS Monica Coll, BS	General biological survey Protocol botanical survey Wetland delineation
07/20/21 07/22/21 08/03/21	Mike Bower, MS Monica Coll, BS Ted Hermanson, MS Alex Jamal, BS	General biological survey Protocol botanical survey Wetland delineation
10/28/21	Mike Bower, MS Jeffery Little	Wetland delineation (field verification)
11/04/21	Charlotte Soergel, BA	Pool depth assessment
3/10/22 3/17/22 4/1/22	Alex Jamal, BS Mike Bower, MS Alex Jamal, BS Mike Bower, MS Alec Villanueva, BS	Protocol botanical survey Protocol botanical survey Protocol botanical survey
8/21/2023 8/22/2023	Brent Helm, PhD Zachary Einweck Kathleen Colima Aguirre	CTS Habitat Assessment
Dry sampling: 11/28/2022, 5/30/2023, 6/22/2023. Wet sampling: 12/16/2022, 12/29/2022, 1/12/2023, 1/26/2023, 2/9/2023, 2/22/2023, 3/9/2023, 3/23/2023, 4/6/2023, 4/24/2023.	Brent Helm, PhD Zachary Einweck Rachel Powell Kathleen Colima Aguirre	Dry and Wet Season Protocol large vernal pool branchiopod survey

Date(s)	Personnel	Surveys Conducted
3/16/2023, 3/22/2023 3/31/2023 4/3/2023, 4/11/2023 4/17/2023, 4/19/2023	Sarah Lynch Mark Jasper Sarah McNamara	Protocol Level Nesting Swainson's Hawk Survey
1/12/24	Sarah Lynch	CTS Habitat Assessment
1/12/2024 1/18/2024 1/26/2024 2/9/2024 2/23/2024 3/13/2024 3/29/2024 4/9/2024	Sarha Lynch	Wet Season Protocol large vernal pool branchiopod survey and habitat assessment
Sources: SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation. SWCA Environmental Consultants (SWCA). 2022. Technical Memorandum. Biological Impacts and Proposed Mitigation Measures. Huffman-Broadway Group. 2023. Updated Addendum to SWCA's Technical Memorandum. Monk & Associates (M&A). 2023. Protocol Level Nesting Swainson's Hawk Survey Report. Monk & Associates (M&A). 2024. Amendment to Helm's Habitat Assessment for California Tiger Salamander, Roadside Ditch along North Side of Peterson Road. Monk & Associates (M&A). 2024. Vernal Pool Branchiopod Wet Season Surveys, Northern Peterson Road Ditch.		

Field Survey Methods

Biological Survey

The biological survey was performed by walking through the study area while looking for special-status wildlife species (including their sign, and their habitats), wildlife movement corridors, potentially jurisdictional wetlands and waters, special-status plants (and their habitats), and any other protected biological resources. Special attention was given to the species and habitats included in the Draft Solano MSHCP. The survey included a search for burrows potentially suitable for burrowing owl (per criteria in the Staff Report on Burrowing Owl Mitigation; CDFW 2012) and other burrow-associated species. Areas adjacent to the study area were inspected for sensitive habitat features such as elderberry (*Sambucus* sp.) shrubs, sensitive aquatic habitat, trees suitable for raptor nesting, and burrows. The location of protected biological resources and important habitat features were recorded on field maps and/or with sub-meter accurate Global Positioning System (GPS) units. Wildlife species observed in the study area can be found in Appendix C.

Botanical Survey

The botanical survey followed CDFW (2018) and USFWS (2000) and guidelines. The botanical survey was "floristic," meaning that every plant taxon found was identified to the taxonomic level necessary to determine rarity and listing status. The botanical survey was conducted by Botanists familiar with the local flora and special-status plant taxa with potential to occur. The survey was conducted using transects spaced approximately 50 feet apart. This distance allowed Botanists to survey areas within

25 feet. Wetlands, marshes, and other mesic habitats were searched more intensively since these habitats provide suitable habitat for numerous special-status plants, including many that are very small or ephemeral. Approximately 40 person-hours were spent in the field during the October 2020 survey. Approximately 100 person-hours were spent in the field during the March-April 2021 surveys. Approximately 80 person-hours were spent in the field during the July-August 2021 surveys. Approximately 32 person-hours were spent conducting the spring 2022 botanical survey with additional time spent keying specimens collected in the field during March-April 2022 surveys. Survey coverage in the study area was 100 percent during all these survey periods. Plant species were either identified on-site or were collected and identified later using dichotomous keys in the Jepson Manual, Second Edition, and Jepson eFlora (2021). Plant species observed in the study area can be found in Appendix C.

The botanical survey included a visit to a nearby Contra Costa goldfields reference population located approximately 0.75 mile southeast of the study area in alkali playa habitat along Scally Lane. Contra Costa goldfields plants were observed in flower in the reference population on April 22, 2021, and April 1, 2022.

On November 29, 2020, Dr. Bruce Baldwin (University of California Berkeley; author of the *Centromadia* treatment in the Jepson Manual, Second Edition) confirmed the identity of pappose tarplant collected in the study area based on photos of flowers provided to him via email.

Special-status plants were mapped as points or polygons. Botanists would stop and count (if fewer than approximately 50 plants were present) or estimate (if more than approximately 50 plants were present) the number of special-status plant individuals within approximately 25 feet. Polygons were used for larger, more dense populations. Population estimates for polygons were obtained by counting and/or estimating the number of plants present in representative sub-areas within the polygon (e.g., within areas approximately 10 x 10 or 100 x 100 feet in size, depending on density), calculating the number of plants per square foot, and then multiplying the result by the number of square feet within the respective polygon. Individual plants were defined as single stems emerging from the soil.

The botanical survey included classification and mapping of natural communities according to Solano Multiple Species HCP land cover type definitions, and methods and vegetation alliance membership rules in A Manual of California Vegetation, 2nd edition. The California Natural Community List was reviewed to verify vegetation alliance rarity ranks and determine if any sensitive vegetation alliances or associations occur. Vegetation data was collected on CNPS and CDFW Vegetation Rapid Assessment forms (Appendix C).

Aquatic Resource Delineation

An aquatic resource delineation was conducted in accordance with standard USACE Wetland Delineation Manual methods. The results of the aquatic resources delineation report have been incorporated into this Biological Resources analysis along with the results of the USACE field verification on October 28, 2021. The USACE issued a letter dated February 1, 2022, verifying the Preliminary Jurisdictional Determination.

Mapping

SWCA mapped biological resources observed in the field with a handheld TDC-100 GPS unit equipped with an R-1 receiver, and with a Trimble Nomad5 equipped with an Empower Module. The GPS data were exported to Google Earth, where feature boundaries were completed with the aid of photographs and field notes. The GPS data and Google Earth polygons were exported to ArcGIS and aligned with the aerial imagery to create Figure 4. The February 7, 2020, aerial photo in Figures 2 through 5 was downloaded from Google Earth Pro.

Addendum

Huffman-Broadway Group peer reviewed the SWCA report and proposed updates to mitigation measures based on the results from new field surveys and resource agency comments. The mitigation measure for Swainson's hawk was further updated based on the results of the M&A Swainson's hawk survey.

3.3.5 - Impacts and Mitigation Measures

Significance Criteria

Appendix G to the CEQA Guidelines is a sample Initial Study checklist that includes questions for determining whether impacts to biological resources are significant. These questions reflect the input of planning and environmental professionals at the Governor's Office of Planning and Research (OPR) and the California Natural Resources Agency, based on input from stakeholder groups and experts in various other governmental agencies, nonprofits, and leading environmental consulting firms. They also reflect the requirements of laws other than CEQA that protect biological resources (e.g., the federal CWA, the Porter-Cologne Water Quality Control Act, the Endangered Species Act and CESA, and the Natural Community Conservation Planning Act). As a result, many lead agencies derive their significance criteria from the questions posed in Appendix G. The City has chosen to do so for this project.

Additional guidance on the significance of biological resource impacts is found in CEQA Guidelines Section 15065, subdivision (a)(1), which provides that a lead agency shall find that a project may have a significant effect on the environment if "[t]he project has the potential to: . . . substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; [or]substantially reduce the number or restrict the range of an endangered, rare or threatened species[.]" The "mandatory findings of significance" are also found in the Appendix G sample Initial Study checklist, though near the end.

Accordingly, biological resources impacts resulting from the implementation of the proposed project would be considered significant if the project would:

a) 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 the California Department of Fish and Wildlife or United States Fish and Wildlife Service;

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service;

c) Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

d) 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 wildlife nursery sites;

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State Habitat Conservation Plan;

g) Substantially reduce the habitat of a fish or wildlife species;

h) Cause a fish or wildlife population to drop below self-sustaining levels;

i) Threaten to eliminate a plant or animal community; or

j) Substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

3.3.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Special-status Species

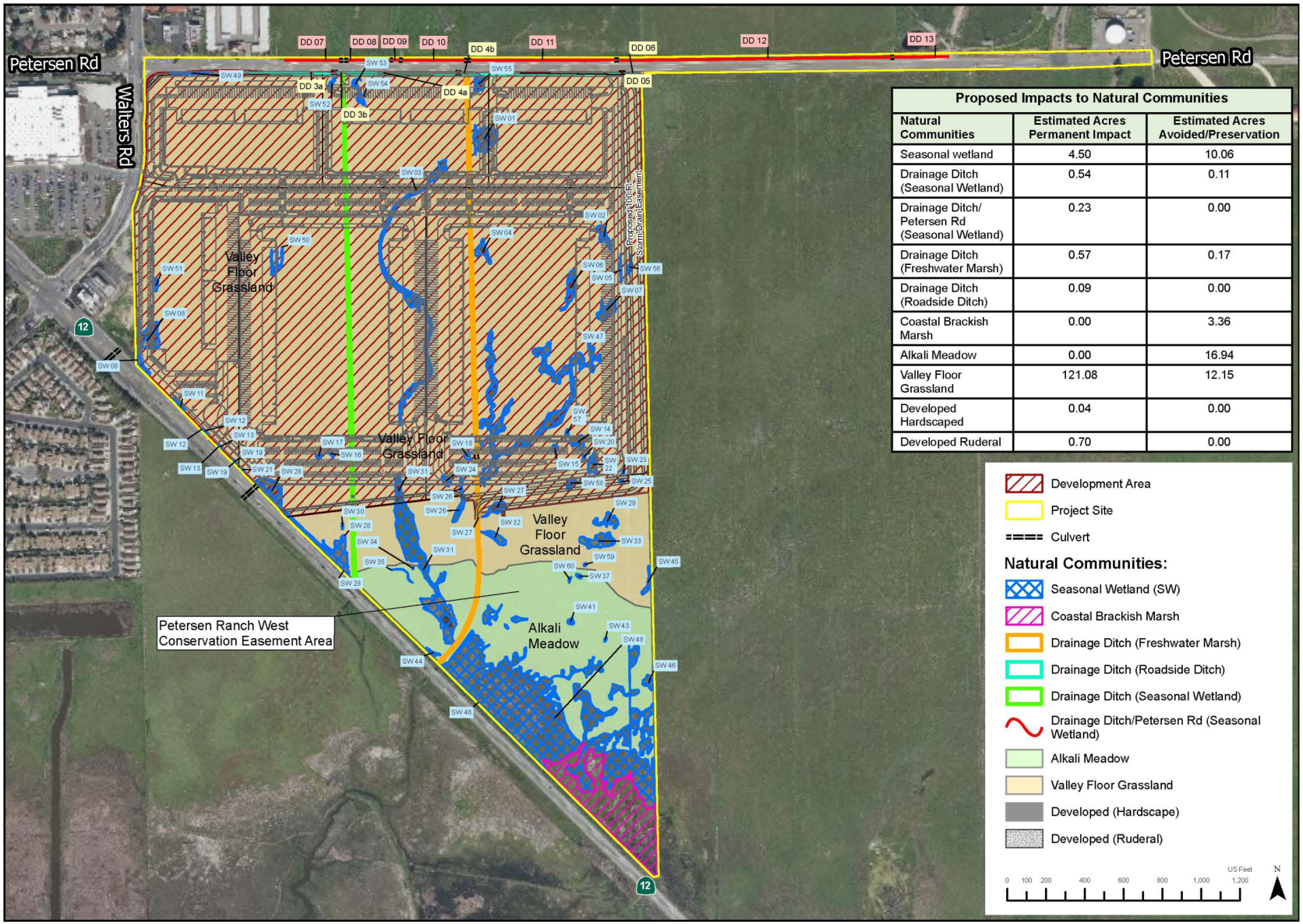
Impact BIO-1:	**The proposed project may have a substantial adverse impact on special-status plant and wildlife species.**

Impact Analysis

This impact assesses impacts to special-status plant species and special-status wildlife species.

Special-status Plant Species

SWCA conducted nine separate protocol botanical surveys between October 2020 and April 2022 during the recognized blooming period for all plants determined to have potential on the project site. These surveys indicated that pappose tarplant, saline clover, and Contra Costa goldfields occurs within the project site. The project site is located within designated critical habitat for Contra Costa goldfields. Exhibit 3.3-2 depicts impacts to natural communities. Exhibit 3.3-4 depicts impacts to rare plants.



Proposed Impacts to Natural Communities

Natural Communities	Estimated Acres Permanent Impact	Estimated Acres Avoided/Preservation
Seasonal wetland	4.50	10.06
Drainage Ditch (Seasonal Wetland)	0.54	0.11
Drainage Ditch/ Petersen Rd (Seasonal Wetland)	0.23	0.00
Drainage Ditch (Freshwater Marsh)	0.57	0.17
Drainage Ditch (Roadside Ditch)	0.09	0.00
Coastal Brackish Marsh	0.00	3.36
Alkali Meadow	0.00	16.94
Valley Floor Grassland	121.08	12.15
Developed Hardscaped	0.04	0.00
Developed Ruderal	0.70	0.00

Source: Huffman-Broadway Group, Inc., 01/16/2024.

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Exhibit 3.3-3
Natural Community Impacts

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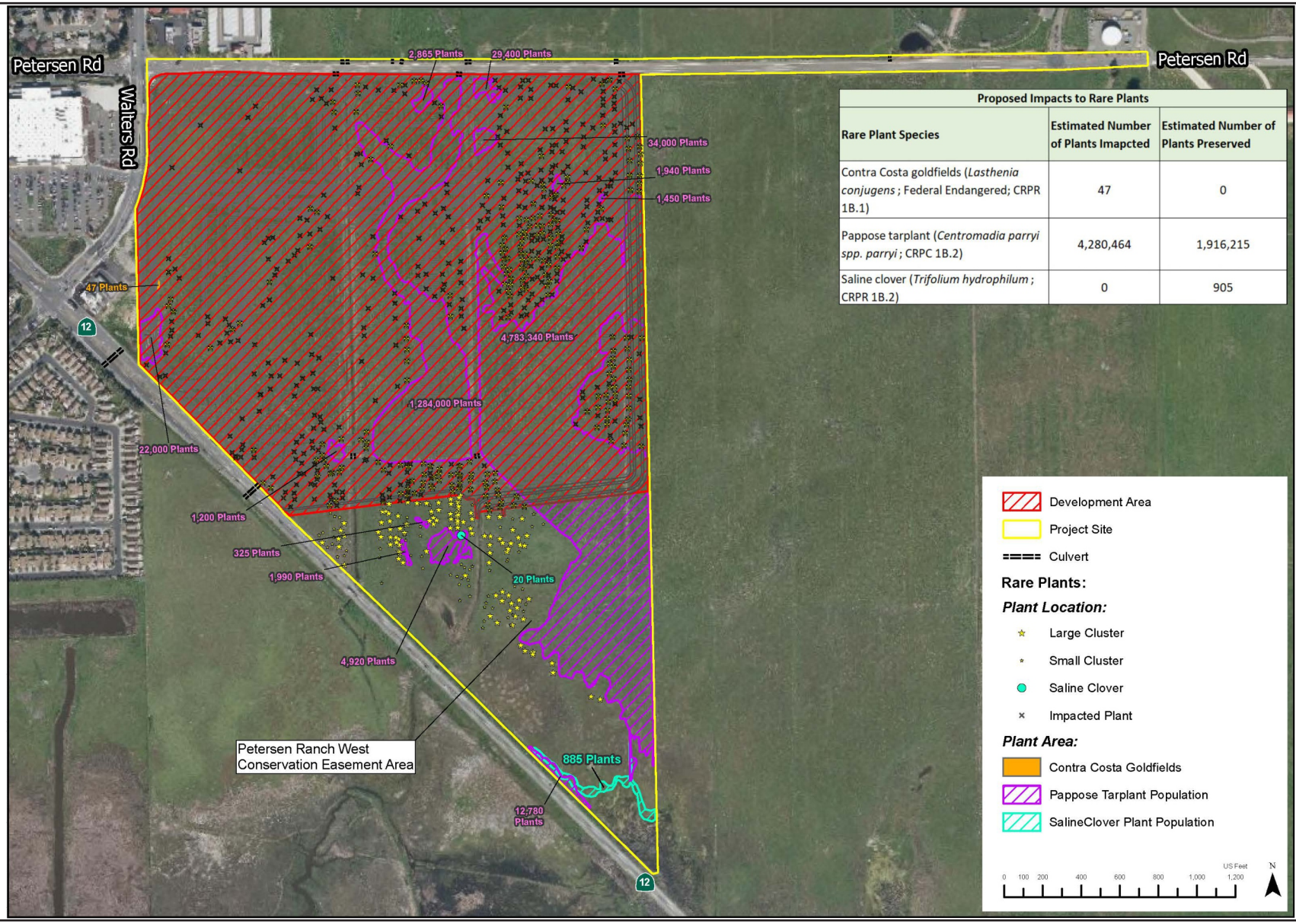

Proposed Impacts to Rare Plants

Rare Plant Species	Estimated Number of Plants Imapcted	Estimated Number of Plants Preserved
Contra Costa goldfields (*Lasthenia conjugens*; Federal Endangered; CRPR 1B.1)	47	0
Pappose tarplant (*Centromadia parryi spp. parryi*; CRPC 1B.2)	4,280,464	1,916,215
Saline clover (*Trifolium hydrophilum*; CRPR 1B.2)	0	905

Source: Huffman-Broadway Group, Inc., 01/16/2024.

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Exhibit 3.3-4
Rare Plant Impacts

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Based on the SWCA Environmental Consultants' botanical survey report titled "2022 Spring Botanical Survey Results for the Suisun Logistics Center Project, Solano County, California" dated April 29, 2022, a seasonal wetland occupying 0.03 acre is the only habitat occupied by Contra Costa goldfields. Grading for the project will directly impact a total of 47 Contra Costa goldfield plants occupying this 0.03-acre seasonal wetland near the western edge of the site and within the designated critical habitat for the species. A total of 14.57 acres of seasonal wetlands that provide suitable habitat for growth of Contra Costa goldfields are present on the site (includes the 0.03 acres of occupied habitat). Grading associated with development of the project would result in the loss of approximately 4.5 acres of seasonal wetlands potentially providing suitable habitat for Contra Costa goldfields within an area designated as critical habitat for the species.

The entire-173.17-acre project site occurs in federally designated critical habitat for Contra Costa goldfields. Grading within the project footprint would result in disturbance to 127.87 acres of critical habitat for Contra Costa goldfields out of the 173.17 acres of designated critical habitat throughout the site. The condition of the critical habitat affected by the proposed project is poor.[53,54] The area has been degraded by cultivation, altered hydrology from ditches and road berms, invasion by non-native grasses, and the presence of Fremont's goldfields (*Lasthenia fremontii*), which are known to hybridize with Contra Costa goldfields. The proposed project would require that compensation for loss of critical habitat for the species be developed in consultation with the USFWS. Direct project impacts to approximately 127.87 acres of Contra Costa goldfields critical habitat would be potentially significant without mitigation.

Grading for the project will also impact approximately 4,280,464 pappose tarplant plants in a 29.92-acre area within the central, eastern, and southern portion of the site. All occurrences of saline cover occur within the preserved portion of the project and as thus, would not be impacted by the proposed project. Impacts to extant populations of Contra Costa goldfields and pappose tarplant would be potentially significant without mitigation.

Mitigation Measure (MM) BIO-1a and MM BIO-1b are proposed requiring the applicant to implement mitigation plans for the pappose tarplant and Contra Costa goldfields. MM BIO-1a will be effective in preserving 14 acres of occupied pappose transplant habitat on the wetland preserve, and implementation of the Pappose Tarplant Mitigation and Monitoring Plan (PTMMP) will be effective in increasing the overall number and acreage of pappose tarplant on the 45-acre Wetland Preserve, but they may not be effective in offsetting the remaining 15.9 acres of the 29.9 acre of pappose tarplant impacted. There is uncertainty that a for-profit organization or nonprofit would be willing to accept salvage seed to implement off-site restoration, habitat enhancement, or research to offset the unmitigated 15.9 acres of occupied habitat, or that a mitigation bank will have pappose tarplant credits available prior to the start of construction. MM BIO-1b is proposed requiring the applicant to obtain federal Endangered Species Act incidental take coverage from the USFWS and purchase preservation credits at a USFWS approved bank at a minimum ratio of 2:1 for occupied impacted habitat.

[53] SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation.
[54] SWCA Environmental Consultants (SWCA). 2022. Technical Memorandum. Biological Impacts and Proposed Mitigation Measures.

Special-status Wildlife Species

The proposed project could result in potentially significant impacts to the following wildlife species: vernal pool fairy shrimp, California tiger salamander-Central California DPS, WPT, burrowing owl, short-eared owl, northern harrier, Swainson's hawk, loggerhead shrike, grasshopper sparrow, Suisun song sparrow, tricolored blackbird, yellow-headed blackbird, and American badger. The proposed project would also result in the loss of designated critical habitat for vernal pool fairy shrimp, Conservancy fairy shrimp and vernal pool tadpole shrimp, though protocol surveys of the site for the latter two species were negative. The project also has the potential to impact active nests of migratory birds protected under the MBTA or California Fish and Game Code if construction and vegetation removal were to occur during the nesting season (February 1 through August 31).

Of the species highlighted in the Section entitled "Special Status Wildlife" in Section 3.3.2, the project would not result in significant impact and would not require implementation of mitigation measures for the following species: monarch butterfly, Delta green ground beetle, RWSB (*Hydrocara rickseckeri*), golden eagle, mountain plover (*Charadrius montanus*), white-tailed kite, yellow rail, California black rail, SMHM, and Suisun shrew.

Findings regarding species impacts and proposed mitigation measures are addressed in the following section.

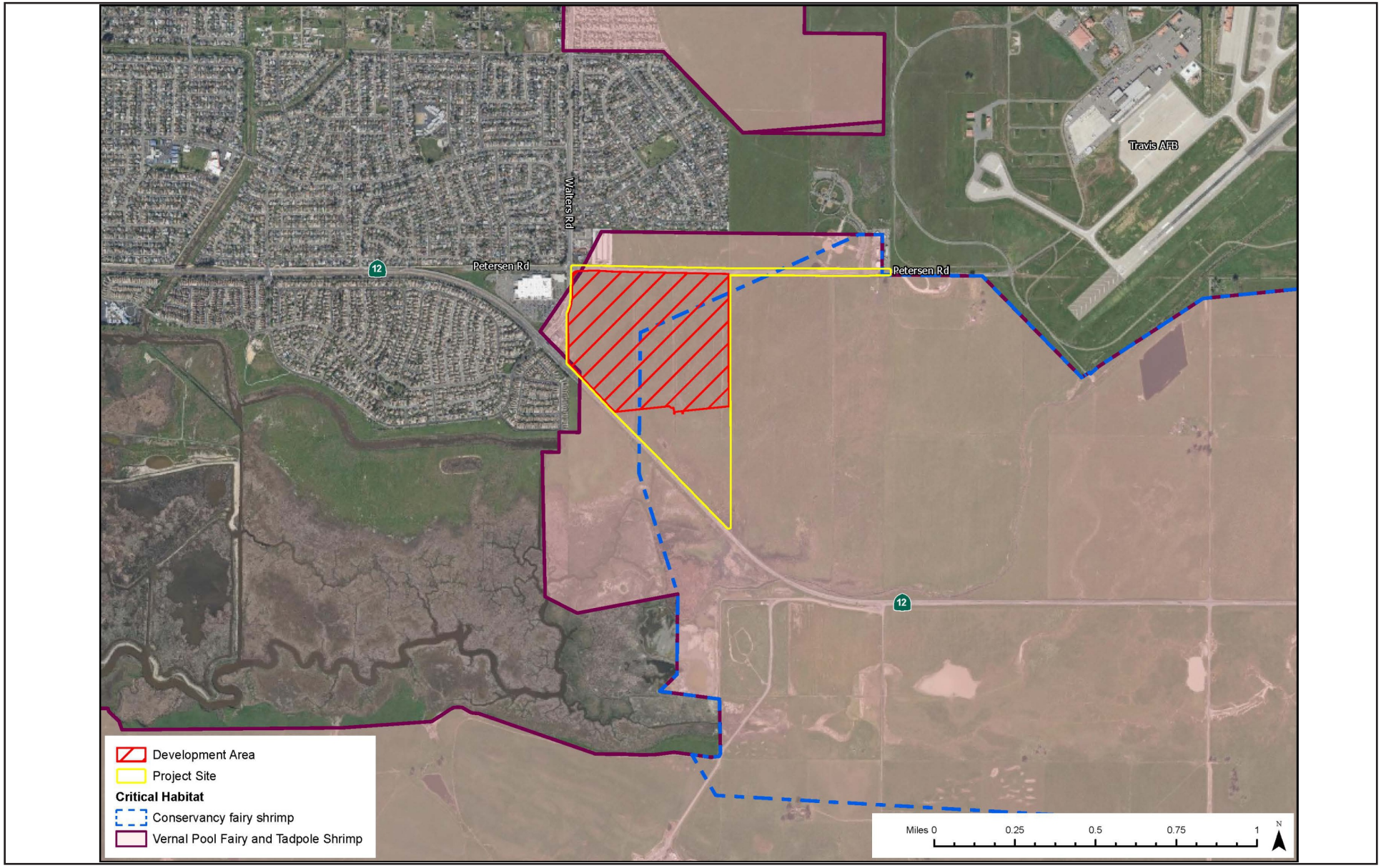
Vernal Pool Crustaceans

Vernal pool fairy shrimp is a sensitive species that is federally listed as threatened, vernal pool tadpole shrimp is federally listed as endangered, and conservancy fairy shrimp is federally listed as endangered. As shown on Exhibit 3.3-5, the project site is mapped as containing critical habitat for vernal pool fairy shrimp, tadpole shrimp, and conservancy fair shrimp.

Based on Large Brachiopod Surveys of the site conducted in 2022 and 2023 by HBC and a brachiopod wet-season survey and habitat assessment conducted in 2024 by M&A along Petersen Road, vernal pool tadpole shrimp and conservancy fairy shrimp do not occur on the site, but the surveys revealed the presence of vernal pool fairy shrimp at 25 locations within the project site. Grading during construction at the project site will result in permanent and direct impacts to a total of 1.15 acres of seasonal wetlands occupied by vernal pool fairy shrimp. Additionally, the non-special-status California fairy shrimp (*Linderiella occidentalis*) was detected on-site in four different habitats (SW-47A, SW-47B, SW47C, and HBC-6). No other large branchiopod species were detected within the project site. Exhibit 3.3-6 depicts impacts to vernal pool fairy shrimp and vernal pool fairy shrimp.

The entire 173.17-acre project site occurs in federally designated critical habitat for vernal pool fairy shrimp, conservancy fairy shrimp, and vernal pool tadpole shrimp. Development of the proposed project would require grading 127.87 acres of the designated critical habitat for these species.

MM BIO-1c is proposed requiring mitigation for impacts to vernal pool fairy shrimp and designated critical habitat for vernal pool fairy shrimp, conservancy fairy shrimp, vernal pool tadpole shrimp. The implementation of this mitigation measure would reduce these impact to a level of less than significant.



Source: Huffman-Broadway Group, Inc., 01/16/2024.

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Exhibit 3.3-5
Vernal Pool Fairy Shrimp, Tadpole Shrimp, and Conservancy Fairy Shrimp Critical Habitat

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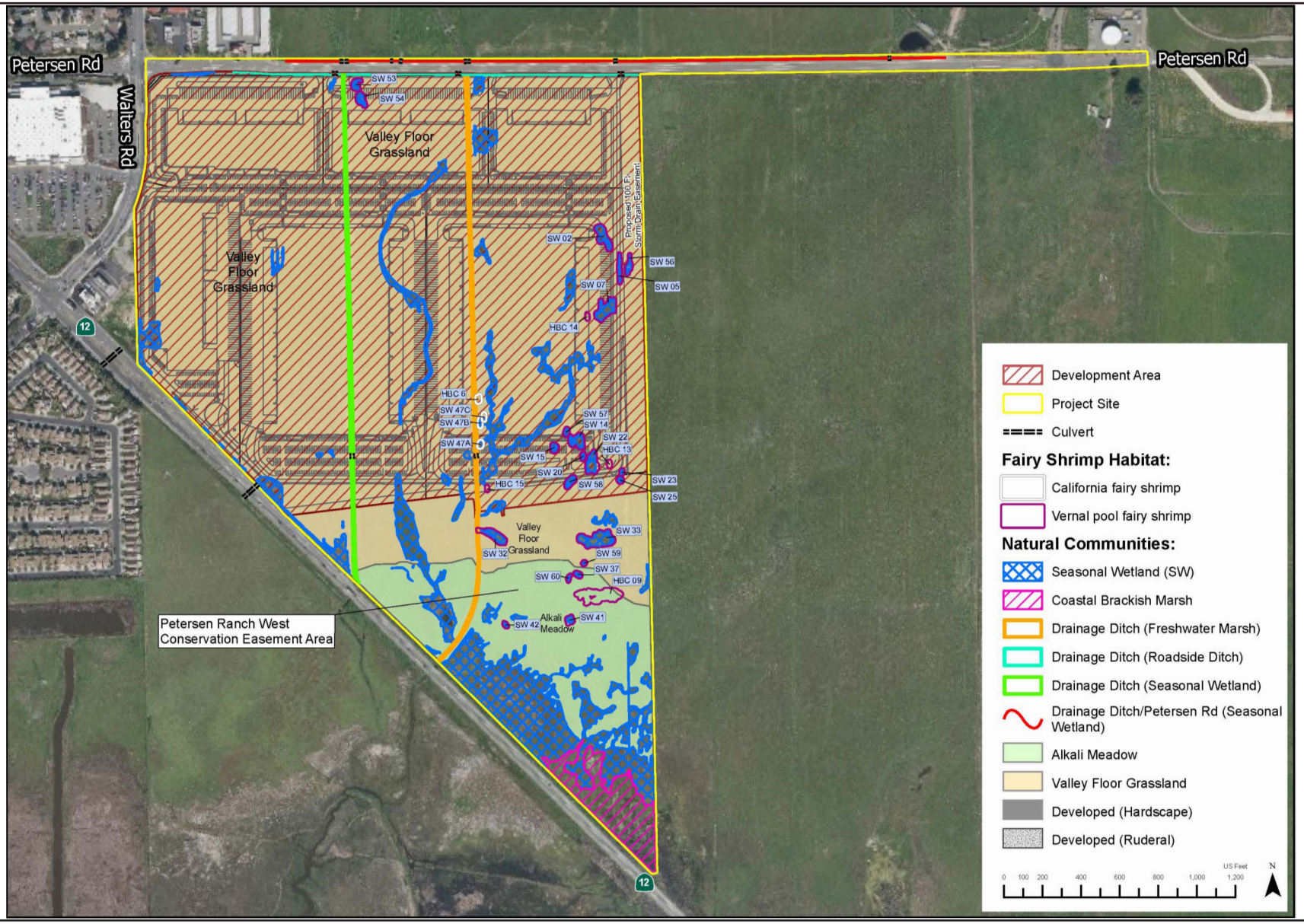

Source: Huffman-Broadway Group, Inc., 01/16/2024.

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Exhibit 3.3-6
Vernal Pool Fairy Shrimp and California Fairy Shrimp Impacts

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California Tiger Salamander

CTS is a species that is federally and State-listed as threatened. A protocol CTS Habitat Assessment conducted by HBC and M&A found that the project site does not support CTS breeding habitat and that the upland habitat is of low quality due to limited burrows, lack of California ground squirrels, and decades of incompatible farming practices (e.g., land leveling, irrigation, disking, etc.). Dispersal within the site is restricted by the two drainage ditches, bisecting in north–south direction, that support CTS predators. Potential dispersal to the project site by CTS is limited due to (1) high constraints of vehicle use along SR-12 to the south, (2) the huge urban housing developments in the west and northwest, (3) an area to the northeast that has been part of Travis Air Force Base and subject to many years rodenticide application, (4) tidal marsh areas of high salinities and supporting CTS predators to the southeast, and (5) areas with incompatible vegetation and ditches and waterways with CTS predators to the east. Because of the lack of breeding, refugial, and dispersal habitat on the site and barriers to movement of CTS onto the site from habitats located in the project vicinity, use of the site by CTS is extremely unlikely. Development of the site as planned would not result in significant impact to populations of CTS.

Western Pond Turtle

The WPT is a California Species of Special Concern. SWCA determined that Drainage Ditch DD-01 and the coastal brackish marsh provide potentially suitable habitat for WPT.[55] The grasslands within the project site may provide marginally suitable upland and potentially nesting habitat for the species. Because of the presence of marginal habitat on the project site, this species has a low to moderate potential to occur on the project site. Although WPT has not been observed on the property during field reviews, the grassland habitat found on the property may be suitable to provide upland habitat and possibly nesting habitat for any WPT individuals that may occur within the drainage. If WPT were to occupy the area proposed for construction, potential impacts to this species could occur. Pre-construction surveys for WPT are warranted to ensure that construction activities do not result in impacts to individuals of this species.

MM BIO-1d is proposed requiring mitigation for this species. The implementation of this mitigation measure would avoid narrowing the range of this wildlife species or otherwise causing substantial adverse effects to the species or its habitat and, thus, reduce the impact to a level of less than significant.

Burrowing Owl

No burrowing owls or suitable burrows have been observed on or in the vicinity of the site during surveys. The nearest CNDDB record of the species is a 1992 sighting approximately 1 mile south of the BSA, though eBird shows a recent sighting just south of State Route 12. Much of the site provides foraging habitat and could support nesting burrowing owl if California ground squirrels were to occupy the site. Future occupation of burrowing owl on the property cannot be ruled out, especially if the property were to be occupied by California ground squirrels. Disturbances to either nesting or wintering burrowing owl could occur during grading or vegetation removal within the proposed

[55] SWCA Environmental Consultants (SWCA). 2021. Biological Resource Evaluation.

development area of the project site. Loss of active burrowing owl burrows or disturbances to nesting or wintering burrowing owl would be potentially significant.

MM BIO-1e is proposed requiring mitigation for this species. The implementation of this mitigation measure would avoid narrowing the range of this wildlife species or otherwise causing substantial adverse effects to the species or its habitat and, thus, reduce the impact to a level of less than significant.

Northern Harrier and Short-eared Owl

Northern harriers and short-eared owls have not been documented nesting on the project site, but suitable nesting habitat for both northern harrier and short-eared owl occur within the non-native grasslands and seasonal wetlands found within the project site. If a northern harrier or short-eared owl were found to be nesting on the project site during the construction period, potential impacts to either of these species from the proposed project could occur, including disturbance to nesting birds and possible mortality of adults and/or young. Disturbances to nest sites for these special-status species would be possible either during grading or vegetation removal for project construction within the proposed development area of the project site. Disturbance causing nest abandonment or loss of nest productivity (e.g., killing or abandonment of eggs or young) would be a violation of the MBTA and California Fish and Game Code and would be a potentially significant impact**.**

MM BIO-1f is proposed requiring mitigation for these species. The implementation of this mitigation measure would avoid any take of nesting birds or their active nests and, thus, reduce the impact to a level of less than significant.

Swainson's Hawk

The project may require the removal of several young/small riparian trees along the drainage ditches DD-01 and DD-02, but these trees are not large enough to support the nest of a large raptor. No nesting habitat would be directly impacted as a result of development at the site. Swainson's hawks could nest in suitable off-site trees located within 0.25 mile and may forage in the study area. Protocol Swainson's hawk nesting surveys conducted by M&A during the 2023 nesting season were negative. Based on the M&A survey no potential nest trees occur in the BSA, and no active Swainson's hawk nests or signs of nesting behavior were observed within the 5-mile study area during these surveys. If future surveys discover Swainson's hawk nesting near project construction during the nesting season, potential impacts to this species could occur, including disturbance to nesting birds, nest abandonment and possible mortality of eggs or nestlings.

Development of the project would permanently remove approximately 127.87 acres of non-native grasslands and mostly seasonal wetlands that provide suitable foraging habitat for Swainson's hawk. The proposed project would also include preservation of 45 acres in the southern portion of the site as an open space preserve protected by conservation easement that would provide acreage suitable as foraging habitat for Swainson's hawk. The net project impact on Swainson's hawk foraging habitat would be 82.87 acres.

MM BIO-1g is proposed requiring mitigation for this species. The implementation of this mitigation measure would avoid any take of nesting birds or their active nests and include compensatory

mitigation for loss of foraging habitat and would thus reduce the impact to a level of less than significant.

Nesting Birds

If construction would occur during the nesting season (February 1 through August 31) in the proposed development area of the project site, grading and vegetation removal could result in direct and indirect impacts to active nests of resident and migratory bird species during project construction. These impacts could occur through habitat removal or disturbance of potential nest sites during construction activities associated with implementation of the project. Potential impacts on nesting birds include visual or auditory disturbance from construction noise, vibration, and human presence. These types of disturbance could result in nest abandonment or failure by deterring birds from preferred nest and foraging sites, and/or distracting adults from tending to their eggs or young. These activities could potentially subject birds to risk of death or injury, and they are likely to avoid using the area until such construction activities have dissipated or ceased. Relocation, in turn, could cause hunger or stress among individual birds by displacing them into adjacent territories belonging to other individuals.

Construction during the nesting season could result in these types of direct and indirect impacts to nesting populations of State species of concern including loggerhead shrike, Suisun song sparrow, grasshopper sparrow, and yellow-headed blackbird, or a nesting colony for State-listed threatened tricolored blackbird, if active nests of these bird species were found to be present in the project area.

With the implementation of MM BIO-1h and MM BIO-1i any potential impacts on the active nests of special-status bird species or birds protected by the MBTA, would be avoided. The implementation of these mitigation measures would avoid any take of nesting birds or their active nests and, thus, reduce the impact to a level of less than significant.

American Badger

Although American badger has not been observed on the property during field reviews, the grassland habitat found on the property may be suitable to support American badger, a California Species of Special Concern. If American badger were to occupy the area proposed for construction, potential impacts to this species could occur. Pre-construction surveys for American badger would be warranted to ensure that construction activities would not result in impacts to individuals of this species.

MM BIO-1j is proposed requiring mitigation for this species. The implementation of this mitigation measure would avoid any take of this species and, thus reduce the impact to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM BIO-1a To offset impacts to pappose tarplant, the approximately 4,280,464 pappose tarplant plants occupying approximately 29.9 acres, the applicant shall, at a minimum, implement the following mitigation measures:

1. The applicant shall preserve the approximately 14-acres of habitat occupied by approximately 1,916,215 pappose tarplant plants on the 45-acre open space area;
2. Prior to issuance of a grading permit, the project applicant shall retain a qualified Botanist/Biologist to prepare a Pappose Tarplant Mitigation and Monitoring Plan (PTMMP). A qualified Botanist/Biologist would need a 4-year college degree in plant biology or related environmental sciences, a minimum of 2 years of experience conducting protocol rare plant surveys, and experience with identification of pappose tarplant.
3. The PTMMP shall include at a minimum:
   - Seedbank salvage procedure(s).
   - Standards for locating areas on the 45-acre open space area to establish new populations and/or to augment existing populations using the salvaged seed.
   - The plan shall set forth a minimum performance standard within the 45-acre open space area which shows a continued increase in the number of plants and absolute cover of plants over the monitoring period.
   - Monitoring to include focused surveys for a minimum of 5 years over a 10 year monitoring period to document if the PTMMP increases the overall pappose tarplant population number and acreage on the 45-acre open space area. Focused surveys shall be implemented in years 1-2, 5, 8, and year 10.
   - Prepare a letter report documenting annual monitoring results and submit them to the City by December of each monitoring year.
4. Prior to the implementation of the PTMMP, the qualified Biologist shall contact organizations that may have interest in salvaged pappose tarplant seed to implement off-site restoration, habitat enhancement, or research for the pappose tarplant. Organizations the qualified Biologist shall contact may include for-profit organizations such as a mitigation bank, or nonprofits such as the Solano Land Trust, California Native Plant Society (CNPS) or University botanical departments. If an organization does request salvaged pappose tarplant seed, the applicant shall provide any excess salvaged pappose tarplant seed to the organization.
5. Currently there are no mitigation banks that offer pappose tarplant preservation credits. Prior to the start of construction if a mitigation bank does offer pappose tarplant preservation credits or the upland or wetland mitigation bank credits available are occupied with pappose tarplant, the applicant may elect to purchase credits equivalent to approximately 15.9 acres of occupied habitat and not implement the PTMMP, should such credits become available.

MM BIO-1b Direct impacts to 47 Contra Costa goldfield plants within a 0.03-acre area in the western portion of the site could, in theory, be avoided through a redesign that removes this area and a setback of at least 50 feet from the project footprint from the site plan. Because such avoidance appears to not be feasible, the applicant shall undertake compensatory mitigation sufficient to achieve a performance standard of no net loss of individual plants. Such compensation may be accomplished either through federal Endangered Species Act incidental take coverage obtained through a United States Army Corp of Engineers (USACE) Endangered Species Act Section 7 consultation process with the United States Fish and Wildlife Service (USFWS) or, in the absence of USACE jurisdiction over the affected 0.03-acre area, through a process overseen by the City. One option for satisfying this performance standard is the purchase Contra Costa goldfields preservation credits at a USFWS-approved bank at a minimum ratio of 2:1 for occupied habitat impacted. The term "occupied habitat" is either the extent of the occupied wetland or, if a plant is located in an upland, an area buffered by a 50-foot radius. To compensate for 0.03 acres of direct impact, a minimum of 0.06 preservation credits must be purchased. Proof of purchase of all required Contra Costa goldfields preservation credits shall be provided to the City prior to issuance of the grading permit.

If preservation credits for Contra Costa goldfields are not available, the applicant shall prepare and submit a Contra Costa Goldfields Mitigation and Monitoring Plan (CCGMMP). If the USACE has jurisdiction over the affected 0.03-acre area, the CCGMMP shall be submitted to the USFWS, via the USACE Endangered Species Act Section 7 consultation process. If the USACE lacks such jurisdiction, the CCGMMP shall be submitted to the City for its approval. At minimum, the CCGMMP shall include seedbank-harvesting procedures, locations where the seedbank will be placed in suitable habitat adjacent to the project site, success criteria, and monitoring activities. The plan shall set forth a minimum 1:1 re-establishment rate performance standard of the number of individual Contra Costa goldfields impacted, or occupied habitat as determined by the most recent botanical survey. Monitoring activities shall include 5 years of annual monitoring of the establishment areas by a qualified Botanist/Biologist. A qualified Botanist/Biologist would need a minimum of a 4-year college degree in plant biology or related environmental sciences, a minimum of 2 years of experience conducting protocol rare plant surveys, and experience with identification of Contra Costa goldfields. Seedbank salvage activities shall be completed prior to grading activities. The applicant shall be responsible for implementing the plan, including funding, monitoring, reporting, and performance of any remedial activities required by the plan. In addition, the 45-acre open space area within Contra Costa goldfields critical habitat shall be protected in perpetuity using a conservation easement.

If the USACE has jurisdiction over the affected 0.03-acre area and during permitting with the USFWS it is determined that additional measures beyond those outlined above are required for impacts to Contra Costa goldfields critical habitat, those

measures shall be implemented by the applicant according to the terms of the project's Endangered Species Act incidental take coverage.

MM BIO-1c Mitigation to compensate for 1.15 acres of direct impact to occupied vernal pool fairy shrimp habitat will be accomplished through the achievement of the following performance standards, which shall function as required minimum standards if the affected 1.15 acre is subject to United States Army Corp of Engineers (USACE) jurisdiction and therefore triggers a Section 7 ESA consultation with the USFWS. The applicant shall ensure compensation for the 1.15 acres of occupied habitat impacted by the project by, at a minimum, preserving occupied habitat at a ratio of 2:1 and creating or restoring habitat that could support vernal pool fairy shrimp (e.g., depth and duration of ponding, proximity to existing occupied habitat etc.) at a ratio of 1:1. Such compensation shall be achieved through the use of conservation easements, mitigation banks, or similar strategies resulting in permanent protection. In addition, the 45-acre open space that contains critical habitat for vernal pool fairy shrimp, vernal pool tadpole shrimp, and Conservancy fairy shrimp shall be protected in perpetuity using a conservation easement. If acceptable to USFWS or the City (depending on whether USACE has jurisdiction over the affected 1.15 acres), the applicant may use preserved lands, or portions thereof, not only for habitat for conservancy fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp, but also for Ricksecker's water scavenger beetle (RWSB), wetlands preservation, and for habitat for other species for which the City may require off-site preservation (e.g., Swainson's hawk).

If during permitting with the USFWS or the City it is determined that additional measures beyond that outlined above are required for impacts to critical habitat, those measures shall be implemented by the applicant according to the terms of the project's Endangered Species Act incidental take coverage.

MM BIO-1d No more than 30 days prior to the first ground-disturbing activities, the project applicant shall retain a qualified Biologist to conduct a focused survey for northwestern pond turtle to determine presence or absence of this species within a 100-foot radius of the disturbance area. A qualified Biologist would need a minimum of a 4-year college degree in wildlife biology or related environmental science, familiarity with northwestern pond turtle and its local ecology, and experience conducting surveys for this species. If construction occurs between April 1 and September 30, this survey shall include turtle nests. If a turtle is found within the project site, the qualified Biologist shall move the turtle to a location outside of the construction zone to suitable habitat. Suitable habitat may be a den the turtle can move into or a ponded area similar to the habitat the turtle was removed from. If a nest is found within the project site or a 100-foot radius of the project site, construction shall not take place within 100 feet of the nest until the turtles have hatched or the eggs have been moved to an appropriate location determined by the qualified Biologist. Construction shall be avoided when adults and hatchlings are overwintering (October 1 to February 28/29), because of the likelihood that turtle

adults and juveniles could be present in upland habitats. If construction activities must occur during this time frame, a survey for overwintering locations shall be conducted no more than 14 days prior to construction. If this species is found to be overwintering within the project site, den locations shall be avoided until the area is unoccupied, as determined by a qualified Biologist.

The qualified wildlife Biologist (see MM BIO-1j) shall be present during initial clearing and grubbing to minimize potential impacts to turtles. In the event that a turtle is found during project implementation, construction activities shall stop until the turtle is moved by a qualified Biologist to a location outside the construction zone within suitable habitat. Suitable habitat may be a den the turtle can move into or a ponded area similar to the habitat the turtle was removed from. In the event a nest is located, the area shall be fenced and signs shall be posted to alert the construction crew as to the sensitivity of the habitat in question.

MM BIO-1e Prior to any ground disturbance, pre-construction surveys for burrowing owl shall be conducted within a minimum of 150 meters of the project site. Where the survey area encroaches onto private property not accessible to the public (e.g., fenced in commercial property, residential backyard, etc.), the qualified Biologist shall either contact the property owner for permission to physically access the property or, if permission cannot be obtained within a reasonable time period, conduct a visual survey of adjacent areas by scanning with binoculars or a spotting scope. The pre-construction surveys shall be conducted within 2 weeks prior to the onset of any ground-disturbing activities. Surveys shall be conducted by a qualified Biologist following California Department of Fish and Wildlife 2012 staff report survey methods and Biologist qualifications to establish the status of burrowing owl on the project site. If no burrowing owls are detected during the pre-construction survey, no further action is necessary. If construction is delayed or suspended for more than 30 days after the survey, the area shall be resurveyed in accordance with previously described methods.

- If burrowing owl are found to occupy the project site during the nonbreeding season (September 1 to January 31), occupied burrows shall be avoided by establishing a no-disturbance buffer zone a minimum of 100 feet around the burrow. Buffers may be increased to address site-specific conditions using the impact assessment approach described in the CDFW 2012 staff report. If a qualified Biologist determines the location of an occupied burrow/s may be impacted even with a 100-foot buffer, or the burrow(s) are in a location(s) on the project site where a buffer cannot be established without preventing the proposed project from moving forward, then a passive relocation effort may be instituted to relocate the individual(s) out of harm's way pursuant to a Burrowing Owl Exclusion Plan prepared in accordance with the CDFW 2012 staff report. The applicant shall notify CDFW at least 14 days prior to the implementation of the Burrowing Owl Exclusion Plan.

- If burrowing owl are found to be present during the breeding season (February 1 to August 31), the proposed project ground-disturbing activities shall follow the CDFW 2012 staff report recommended avoidance protocol whereby occupied burrows shall be avoided with a no-disturbance buffer of between 50 meters and 500 meters depending on time of year and disturbance level, as described in the 2012 CDFW staff report. This breeding season buffer zone shall remain until the young have fledged or an unsuccessful nesting attempt is documented.
- If burrowing owls are ultimately found on the site and burrow eviction/relocation of burrowing owls during the non-nesting season is a selected strategy to move forward with the project without direct impacts to burrowing owl individuals, the applicant shall coordinate this effort with CDFW and provide habitat mitigation consistent with the 2012 CDFW Staff Report on burrowing owl.

MM BIO-1f Prior to ground disturbance, a pre-construction nesting survey shall be conducted for northern harrier and short-eared owl by a qualified Biologist if construction is scheduled during the nesting season (February 1 to September 1). The qualified Biologist shall have a 4-year degree in wildlife biology or related science, familiarity with northern harrier and short-eared owl and their local ecology, and experience conducting wildlife surveys. To determine whether northern harrier or short-eared owl is nesting on-site, a qualified Biologist(s) shall conduct walking transects through the grassland habitat within the project site and a 500-foot radius from the site searching for northern harrier and short-eared owl nests. Where the survey area encroaches onto private property not accessible to the public (e.g., fenced in commercial property, residential backyard, etc.), the qualified Biologist shall either contact the property owner for permission to physically access the property or, if permission cannot be obtained within a reasonable time period, conduct a visual survey of adjacent areas by scanning with binoculars or a spotting scope. An active northern harrier or short-eared owl nest must be protected by implementing a minimum 500-foot radius buffer zone around the nest marked with orange construction fencing. If an active nest is located outside of the project site, the buffer shall be extended onto the project site and demarcated where it intersects the project site. Size of buffer zone may be increased if the qualified Biologist determines the construction activity may result in the abandonment of the nest or impact the health of the fledglings. Factors to consider may include, but are not limited to, the type of construction activity that may occur, physical barriers between the construction site and active nest, behavioral factors, and extent that northern harrier or short-eared owl may have acclimated to the disturbance. No construction or earthmoving activity shall occur within the established buffer zone until it is determined by the qualified Biologist that the young have fledged or that the nesting cycle is otherwise determined to be complete based on monitoring of the active nest by a qualified Biologist.

MM BIO 1g Pre-construction surveys for nesting Swainson's hawk shall be conducted in the project site vicinity prior to initiation of project construction activities. Surveys shall

be conducted by a qualified Biologist with a 4-year degree in wildlife biology or related science, familiarity with Swainson's hawk and its local ecology, and experience conducting surveys for this species. Surveys shall be conducted in accordance with California Department of Fish and Wildlife (CDFW) "Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley" (CDFW 2000) to maximize the potential for locating nesting Swainson's hawk and reduce the potential for nest failures due to project activities and/or disturbances. The protocol recommends a preliminary (optional survey) between January and March 20, but required surveys conducted during March 20 to April 5, April 5 to April 20, and June 10 to July 30. In addition to pre-construction surveys, surveys must also be conducted each year following initiation of construction if project activities are delayed or discontinued for 7 or more days prior to the first required survey period (March 20 to April 5) and are scheduled to recommence construction activities during the second survey period or before August 1. These pre-construction surveys shall include investigation of all potential nesting trees within a 0.5-mile radius around all project activities and shall be completed for at least two survey periods immediately prior to commencement of project construction. Where the survey area encroaches onto private property not accessible to the public (e.g., fenced in commercial property, residential backyard, etc.), the qualified Biologist shall either contact the property owner for permission to physically access the property or, if permission cannot be obtained within a reasonable time period, conduct a visual survey of adjacent areas by scanning with binoculars or a spotting scope.

If no nesting Swainson's hawk are found during the first survey period starting March 20 and extending through April 5, then project construction may commence. If during the second survey (April 5 through April 20) Swainson's hawk are found to be nesting in the project vicinity and construction has commenced, it shall be assumed the Swainson's hawk commenced nesting and thus the Swainson's hawk are habituated to the ambient level of noise and disturbance emanating from the project site. If Swainson's hawk are found to be nesting within 0.5-mile of the project site, a non-disturbance buffer shall be established to keep all construction activities a minimum of 0.25 mile from the nest site. No disturbance such as construction or earthmoving activity shall occur within the established buffer zone until it is determined by a qualified Biologist that the young have fledged or that the nesting cycle is complete based on monitoring of the active nest by the qualified Biologist. The CDFW shall be consulted regarding the adequacy of the buffer established by the qualified Biologist. At that time, the necessity for acquiring a Fish and Game Section 2081 Incidental Take Permit (ITP) authorization would be determined. An ITP authorization shall be required if there were a valid concern the project activities would result in the "take" of an adult Swainson's hawk, eggs, or nestlings.

The applicant shall ensure at a minimum that the 127.87 acres of suitable Swainson's hawk foraging is mitigated at a 0.5:1 ration (63.94 acres). Mitigation will include that (1) the 45-acre open space area remain undeveloped to provide an area suitable as foraging habitat for Swainson's hawk, and (2) compensation for the net 18.94 acres of suitable Swainson's hawk foraging habitat impacted by the project. This compensation will consist of preservation of suitable off-site Swainson's hawk foraging habitat through the use of a deed restriction, conservation easements, mitigation banks, or similar strategies resulting in permanent protection.

MM BIO-1h If construction occurs during the breeding season of migratory and resident birds (February 1 to August 31), a qualified Biologist shall conduct a pre-construction breeding bird survey in areas of suitable habitat within 7 days prior to the onset of construction activity. Surveys shall be conducted within the project footprint and 250 feet from the construction limits. Where the survey area encroaches onto private property not accessible to the public (e.g., fenced in commercial property, residential backyard, etc.), the qualified Biologist shall either contact the property owner for permission to physically access the property or, if permission cannot be obtained within a reasonable time period, conduct a visual survey of adjacent areas by scanning with binoculars or a spotting scope. If the survey area is found to be absent of nesting birds, no further mitigation would be required. However, if construction activities are delayed by more than 7 days, an additional nesting bird survey shall be performed. If active bird nests are found, appropriate buffer zones shall be established around all active nests to protect nesting adults and their young from direct or indirect impacts related to project construction disturbance. An appropriate buffer zone is one that the qualified Biologist determines will ensure that work activities do not adversely affect nests, result in unusual or distressed avian behavior, result in the abandonment of the nest, or impact the health of the fledglings. Construction activity within the established buffer zone may only be conducted at the discretion of the qualified Biologist. The exact sizes of appropriate buffer zones shall be determined per recommendations of qualified Biologist based on site conditions and species involved, but typical buffers around active nests are 500 feet for large raptors such as buteos, 250 feet for small raptors such as accipiters, 300 feet for a tricolored blackbird nesting colony, and 100 feet for passerines (songbirds) and other bird species. If an active nest is located outside of the project site, the buffer shall be extended onto the project site and demarcated where it intersects the project site. Buffer zones shall be maintained until it can be documented that either the nest has failed, or the young have fledged. The size of buffer zone may be decreased if nest monitoring by the qualified Biologist indicates that work activities are not adversely impacting the nest or may be increased if birds are showing signs of unusual or distressed behavior or the qualified Biologist determines that the construction activity may result in the abandonment of the nest or impact the health of the fledglings. Factors to consider may include, but are not limited to, the species involved, type of construction activity that may occur, physical barriers between the construction site and active nest, and behavioral factors.

This mitigation measure mitigates potential impacts to active nests of nesting bird Species of Special Concern not mentioned in MM BIO-1f, MM BIO-1g, and MM BIO-1h, including white-tailed kite, loggerhead shrike, grasshopper sparrow, Suisun song sparrow, yellow-headed blackbird, and tricolored blackbird. This measure also mitigates potential impacts to active nests of bird species protected under the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code.

MM BIO-1i A survey by a qualified Biologist shall be conducted for American badger dens no more than seven days prior to any ground-disturbing activity. Surveys shall be conducted within the project footprint and 100 feet from the construction limits. Where the survey area encroaches onto private property not accessible to the public (e.g., fenced in commercial property, residential backyard, etc.), the qualified Biologist shall either contact the property owner for permission to physically access the property or conduct a visual survey of adjacent areas by scanning with binoculars or a spotting scope. In the event that an active den is discovered in the surveys area, a minimum 100-foot buffer shall be established around the den. The no-disturbance buffer shall be flagged and no ground-disturbing activity shall be allowed to occur until it is determined by the qualified Biologist that the badgers have dispersed the den. The qualified Biologist shall have a 4-year degree in wildlife biology or related science and experience detecting an active badger nest.

MM BIO-1j The applicant shall retain a Qualified Biologist to conduct an environmental awareness program for all construction crews prior to initiation of construction, provide biological monitoring services during the period of active ground disturbance, and conduct required pre-construction surveys (to the extent the biologist meets minimum species-specific qualifications to perform the surveys). All workers involved in the clearing of vegetation or other construction will participate in a training session led by the Qualified Biologist prior to initiation of work. This training session will include information on the ecology and identification of all special-status species that may be impacted by the project: pappose tarplant, Contra Costa goldfields, vernal pool fairy shrimp, western pond turtle, burrowing owl, northern harrier, short-eared owl, Swainson's hawk, and American badger, as well nesting birds protected by the Migratory Bird Treaty Act (MBTA)and California Fish and Game Code. The session will also include information related to both the federal Endangered Species Act and California Endangered Species Act (CESA) as well as relevant sections of the California Fish and Game Code and penalties associated with harm done to an individual of a listed species, and the need workers to stop work and inform the on-site Biologist in the event of a potential sighting.

If qualified to do so the Qualified Biologist shall perform the required pre-construction surveys as per mitigation measures above for western pond turtle, burrowing owl, northern harrier and short-eared owl, Swainson's hawk, American badger, and nesting birds.

The Qualified Biologist shall remain on-site during all work involving vegetation clearing and ground disturbance to help ensure that no special-status species are harmed. If species are found on the site (e.g., western pond turtle), the Qualified Biologist shall move the individual to an appropriate off-site location and out of harm's way. If fences are established to demarcate buffer zones or setbacks from sensitive resources, the Biological Monitor shall check the integrity of these fences daily and search for special-status species to ensure impacts to the species do not occur. The Qualified Biologist shall assist in demarcating buffer zones for any nesting birds and, if necessary, monitor nests to ascertain when young have fledged and work at that location can resume. If a special-status species is found during construction operations (e.g., western pond turtle), work should be halted and the Qualified Biologist shall relocate the individual to a suitable off-site location or (for listed species) allow the individual to leave the project area of its own volition.

Level of Significance After Mitigation

Significant and unavoidable, with respect to pappose tarplant; less than significant for all other species.

There is uncertainty that a for-profit organization or nonprofit would be willing to accept salvage seed to implement off-site restoration, habitat enhancement, or research to offset the unmitigated 15.9 acres of occupied habitat, or that a mitigation bank will have pappose tarplant credits available prior to the start of construction.

Sensitive Natural Communities or Riparian Habitat

Impact BIO-2:	**The proposed project may have adverse impacts on sensitive natural communities or riparian habitat.**

Impact Analysis

The following sensitive natural communities are present in the BSA: drainage ditches (as seasonal wetland/freshwater marsh), coastal brackish marsh, seasonal wetlands, freshwater marsh, and alkali meadow. Sensitive vegetation alliances of conservation concern (*Centromadia parryi* Herbaceous Alliance; *Cressa truxillensis–Distichlis spicata* Herbaceous Alliance; and *Frankenia salina* Herbaceous Alliance) occur within those communities. The coastal brackish marsh and alkali meadow will be avoided and preserved. The *Cressa truxillensis–Distichlis spicata* and *Frankenia salina* alliances occur only in the southernmost seasonal wetlands (located in or south of the alkali meadow) and will be avoided in the preserve. The *Centromadia parryi* Herbaceous Alliance is found within the seasonal wetlands and valley floor grassland communities in the project area. Based on the results of the botanical surveys it is estimated that between four and five million pappose tarplant plants in this vegetation alliance will be impacted within the project footprint. A few riparian trees along the large north–south aligned drainage ditches (220 square feet) will also be removed during project construction.

MM BIO-1a (described above) provides mitigation for impacts to the sensitive vegetation alliance, *Centromadia parryi* Herbaceous Alliance.

Potential impacts of the proposed project to wetlands subject to the regulatory jurisdiction of the USACE and/or the San Francisco Bay RWQCB are addressed under Impact BIO-3. MM BIO-3a and MM BIO-3b require the applicant to obtain all requisite authorizations from agencies with jurisdiction over resources within the project site, and to meet a minimum performance standard (requiring one acre of restoration for each acre impacted by development). Such approvals may include Section 404 permit(s) from USACE; Section 1602 Lake and Stream Alteration Agreement(s) from CDFW, and Section 401 Water Quality Certification(s) and/or Waste Discharge Requirements from the San Francisco Bay RWQCB. These mitigation measures would ensure that there would be no net loss of aquatic habitats, sensitive natural habitat, and riparian habitat and, thus, serve to reduce impacts to a level of less than significant.

Wetlands and Jurisdictional Features

Impact BIO-3: The proposed project may have a substantial adverse impacts on federally or State protected wetlands.

Impact Analysis

The project site contains numerous areas of brackish marsh, seasonal wetland/vernal pool habitat, and drainage channels. These aquatic habitats are found throughout the project site within all general habitat types and are likely to be considered jurisdictional waters under both State and federal jurisdiction.

Grading associated with project construction will result in direct, permanent impacts to a total of 5.7 acres of wetlands subject to the regulatory jurisdiction of USACE and/or the San Francisco Bay RWQCB. These impacted wetlands consist of 4.5 acres of seasonal wetlands, 0.54 acre of seasonal wetland associated with the ditch, 0.57 acre of freshwater marsh drainage ditch, 0.09 acre of unvegetated roadside ditch, and 0.23 acre of roadside ditch/Petersen Road seasonal wetland. Drainage ditches may be subject to the jurisdiction of CDFW under Section 1602 of the California Fish and Game Code.

MM BIO-3a and MM BIO-3b require the applicant to obtain all requisite authorizations from agencies with jurisdiction over resources within the project site, and to meet a minimum performance standard (requiring one acre of restoration and establishment for each acre impacted by development). Such approvals may include Section 404 permit(s) from USACE; Section 1602 Lake and Stream Alteration Agreement(s) from CDFW, and Section 401 Water Quality Certification(s) and/or Waste Discharge Requirements from the San Francisco Bay RWQCB. These mitigation measures would ensure that there would be no net loss of aquatic habitats, sensitive natural habitat, and riparian habitat and, thus, serve to reduce impacts to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM BIO-3a Prior to issuance of grading permits for activities that impact protected aquatic resources, the project applicant shall obtain all requisite authorizations from

agencies with jurisdiction over the affected aquatic resources. Such agencies may include, but may not be limited to, the United States Army Corps of Engineers (USACE), the United States Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), and the San Francisco Bay Regional Water Quality Control Board (San Francisco Bay RWQCB). Regardless of agency permit requirements, impacted resources shall be offset through on-site restoration and/or establishment within the 45-acre wetland preserve area, off-site establishment and/or restoration, purchase of credits at an agency-approved mitigation bank in the region, or another agency-approved habitat mitigation method (e.g., re-establishment, preservation, etc.) at no less than a 1:1 ratio. This ratio applies to wetlands and waters subject to federal and/or State jurisdiction. Such mitigation may simultaneously satisfy other project mitigation requirements for sensitive species or critical habitat (e.g., vernal pool fairy shrimp, vernal pool tadpole shrimp, California tiger salamander, Swainson's hawk, burrowing owl) if the applicant demonstrates to the City and applicable resource agencies with substantial evidence that the mitigation lands provide suitable habitat and meet all other mitigation specifications.

MM BIO-3b If on-site wetland restoration and establishment occurs within the 45-acre open space area, a Wetland Mitigation and Monitoring Plan shall be submitted to the United States Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and/or the San Francisco Bay Regional Water Quality Control Board (San Francisco Bay RWQCB), as applicable in light of these agencies' respective regulatory jurisdictions, for review as part of the process for obtaining any needed permit from these agencies. The Wetland Mitigation and Monitoring Plan shall be prepared in accordance with the Subpart J–Compensatory Mitigation for Losses of Aquatic Resources outlined in the California State Water Resources Control Board (State Water Board) Procedures, and in accordance with the State Water Board Implementation Guidance dated April 2020, and (if applicable) in accordance with the USACE Compensatory Mitigation Rule (33 Code of Federal Regulations [CFR] Part 332).

The basic objective of the Wetland Mitigation and Monitoring Plan is to ensure that project wetland impacts, and compensatory mitigation proposed to offset the wetland impacts, shall provide a no net loss of area of wetlands, and wetlands established/created shall be in-kind to the wetlands impacted. In summary, the Wetland Mitigation and Monitoring Plan shall at a minimum:

- Restore and Establish 4.5 acres of seasonal wetlands, 0.54 acre of seasonal wetland associated with the ditch, 0.57 acre of freshwater marsh drainage ditch, 0.09 acre of unvegetated roadside ditch, and 0.23 acre of seasonal wetland roadside ditch/Petersen Road, in-kind to the impacted aquatic resources at a minimum 1:1 ratio.

- Provide financial assurances to ensure a high level of confidence that the compensatory mitigation shall be successfully completed, in accordance with applicable performance standards in the Plan.
- Design ecological performance standards to assess whether the Wetland Mitigation and Monitoring Plan is achieving the overall objectives, so that it can be objectively evaluated to determine whether it is developing into the desired resource type (e.g., seasonal wetland, freshwater marsh), and attaining any other applicable metrics such as acres, number of native plant species, water saturation and/or ponding depth and duration etc.
- Monitor the site for a duration necessary to determine whether the Wetland Mitigation and Monitoring Plan is meeting the performance standards of the Plan.
- Protect the approximately 45-acre open space area in perpetuity using a conservation easement and provide an endowment sufficient to fund the Long-Term Management Plan.
- An overall assessment of the condition of the wetlands permanently impacted by the proposed project shall be conducted using the California Rapid Assessment Method (CRAM) for depressional wetlands, or a hybrid approach based on CRAM. Each similar wetland type that may be impacted shall be assessed to describe the floristic community and record the native and non-native dominant plants within the vernal pool and palustrine emergent wetlands. Physical structure such as topographic complexity and physical features that may provide habitat for aquatic species (e.g., boulders, woody debris etc.) shall be recorded and used to design the created/established wetlands. The purpose of this assessment is to ensure the design of the wetlands shall provide habitat that is similar to the wetlands being impacted to ensure the impacted wetlands are mitigated in-kind.

Level of Significance After Mitigation

Less than significant impact.

Fish and Wildlife Movement Corridors

Impact BIO-4:	**The proposed project would not have substantial adverse impacts on fish or wildlife movement.**

Impact Analysis

The Draft Solano MSHCP includes an analysis of major and minor barriers and patterns of habitat fragmentation revealing seven major potential corridor areas within the County. The project site sits on the edge of the Jepson Prairie-Suisun Marsh Corridor. Vernal pool grasslands, coastal marsh habitat, and a transitional habitat of these two habitat types intersecting are the characteristic habitats of this corridor. Transitional habitat is not only rare today but is an important element to wildlife conservation and biodiversity. This corridor provides important habitat for several coastal marsh and vernal pool Covered and Special Management Species. As noted in previous impacts discussions, approximately 45 acres of the project site would be permanently preserved as open space. The open space area includes the lowest-lying areas of the project site that contain many of

the emergent wetlands and vernal pools. Wildlife movement in this area will not be directly affected by project development.

Furthermore, SR-12 separates the project site from Suisun Marsh and is a barrier to wildlife movement and hydrology. Because of high traffic volume on the highway, the ability for most animals to cross over successfully is highly unlikely. This assessment is confirmed by the California Habitat Connectivity Maps generated by CDFW. According to CDFW habitat connectivity ends just south of SR-12, (Exhibit 3-3.7). Given the existing barriers and the preservation of open space on the project site, the proposed project would not have significant adverse effects on wildlife movement. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Local Policies or Ordinances

Impact BIO-5:	**The project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.**

Impact Analysis

The Suisun City Code does not have any ordinances that directly regulate biological resources such as a Tree Ordinance or a Creek Setback Ordinance. This precludes the possibility of conflicts with local biological ordinances and policies. No impact.

Level of Significance Before Mitigation

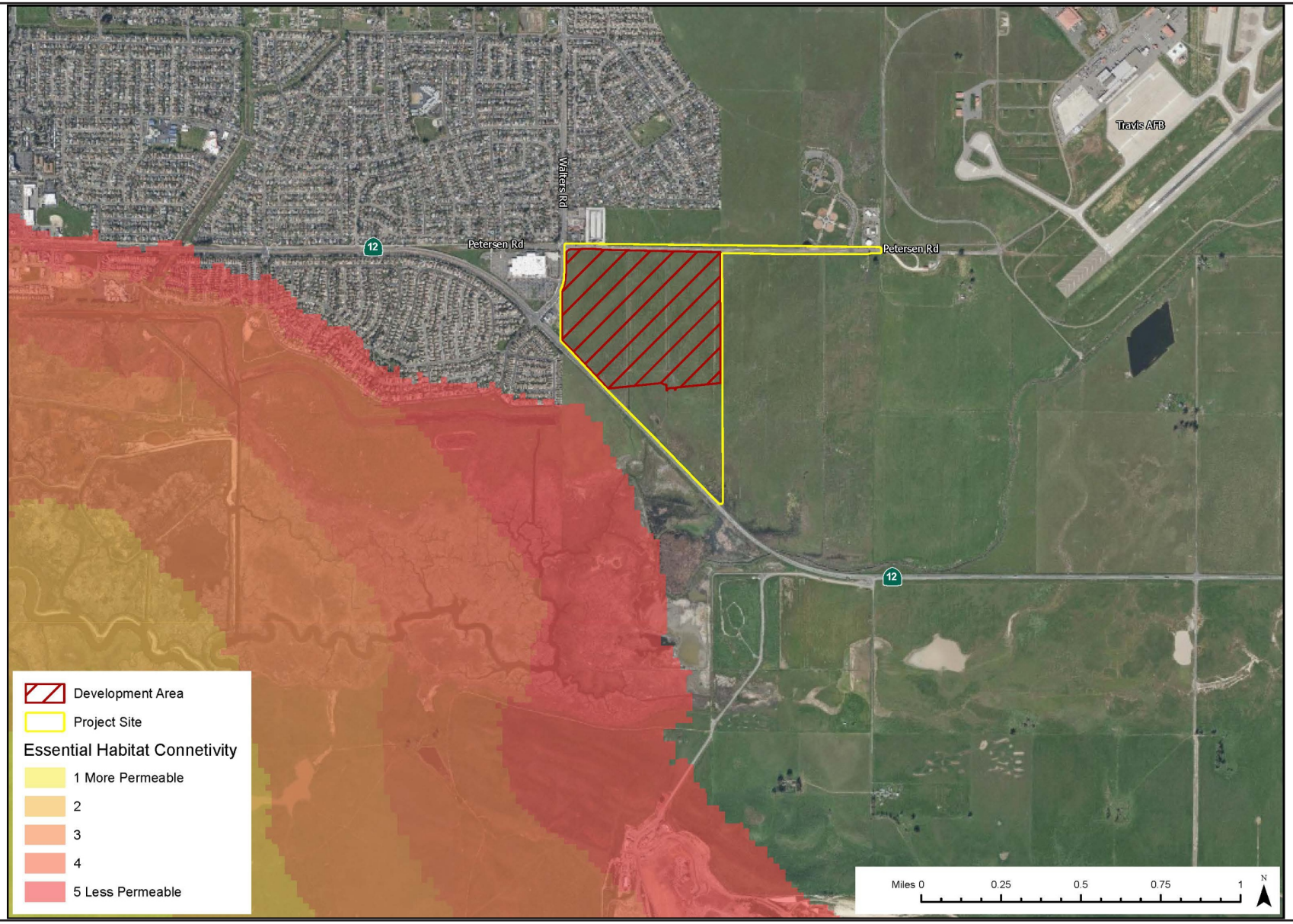
No impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No impact.



Source: Huffman-Broadway Group, Inc., 01/16/2024.

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Exhibit 3.3-7
Habitat Connectivity

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Habitat Conservation Plan Consistency

Impact BIO-6: The proposed project may conflict with applicable provisions of the Solano Multiple Species Habitat Conservation Plan.

Impact Analysis

The Draft Solano MSHCP is currently in final administrative draft format and has not yet been adopted. Thus, at the time of this writing, it is legally non-binding. CEQA normally does not require an analysis of consistency with such a draft, unadopted plan. Even so, this EIR addresses the proposed project's consistency with the currently proposed Solano MSHCP because, as noted earlier, General Plan Goal OSC-2 is to "[e]nsure consistency with Solano Multiple Species Habitat Conservation Plan." This Goal, in turn, gave rise to specific policies (OSC-2.1, OSC-2.2, and OSC-2.3) that require compliance with the Solano MSHCP once it is adopted. Upon adoption, the Solano MSHCP will promote the conservation of biologically significant areas while simultaneously allowing urban development and the continuation of ongoing land use activities, such as agriculture. The Solano MSHCP will be a 50-year plan designed to create a reserve of connected natural habitats throughout Solano County and a portion of Yolo County. In exchange for protecting the reserve area, the Solano MSHCP would allow for the "take" of threatened, endangered, rare, and covered plant and animal species and habitats as part of "covered activities" in non-reserve areas. The project site is located in Covered Activity Zone 1 of the proposed Solano MSHCP, with impacts to covered species and habitats to be fully mitigated at off-site preserve areas by providing fee payments to preserve habitat elsewhere in the plan boundaries.

MM BIO-6 requires that, in the event the Solano MSHCP is adopted prior to the beginning of construction, the applicant must pay mitigation fees to the City of Suisun City in accordance with the provisions of the plan. MM BIO-1a through MM BIO-1j, MM BIO-2a, and MM BIO-2b will also serve to reduce impacts to loss of habitat and both covered and non-covered species under the Solano MSHCP. With the implementation of mitigation, impacts would be reduced to a level of less than significant.

The Solano MSHCP has been in draft form since approximately 2002 (more than 20 years), has gone through several iterations, is still not approved for use, and there is no indication it will be approved in the foreseeable future. If the Draft Solano MSHCP does get approved prior to obtaining all permits and approvals for the proposed project, the applicant would consider the use of the Solano MSHCP or incorporating mitigation measures suggested in the Draft Solano MSHCP.

In the event the Solano MSHCP is adopted prior to the beginning of construction, its provisions would preempt the mitigation measures for MSHCP-covered species and resources set forth in this section and instead any protocols it contains for covered plant and wildlife surveys and mitigation would take precedence. MM BIO-6 requires the applicant to comply with the applicable provisions of the Solano MSHCP including surveys, mitigation requirements, and payment of fees. This would achieve compliance with the Solano MSHCP and, thus, reduce impacts to a level of less than significant. Plant and animal species referenced in Impact BIO-1 which are considered MSHCP "Covered Species" include Contra Costa goldfields, vernal pool fairy shrimp, California tiger salamander, burrowing owl, Swainson's hawk, and tricolored blackbird. Sensitive natural

communities referenced in Impact BIO-2 and wetlands referenced in Impact BIO-3 would likely be associated with the MSHCP Valley Floor Grassland and Fresh Water Marsh communities.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM BIO-6 At the time building permits are issued, the applicant shall pay mitigation fees to the City of Suisun City in accordance with the provisions of the Solano Multiple Species Habitat Conservation Plan (Solano MSHCP), provided that the plan has been adopted and the fee program has been established. Additionally, if the plan is adopted, the applicant shall comply with the applicable provisions of the Solano MSHCP that pertain to plant and wildlife surveys and mitigation requirements (e.g., no net loss of habitat)

Level of Significance After Mitigation

Less than significant impact.

3.4 - Cultural Resources and Tribal Cultural Resources

3.4.1 - Introduction

This section describes the existing cultural and tribal cultural resources setting and potential effects that may result from project implementation on the site and its surrounding area. The descriptions and analysis in this section are based on information provided by the Native American Heritage Commission (NAHC), a records search conducted at the Northwest Information Center (NWIC), archival research, and a pedestrian survey, as presented in the Phase I Cultural Resource Assessment (Phase I CRA) prepared for the proposed project included in confidential Appendix D. Recommendations provided in the Phase I CRA pertaining to mitigation of potential impacts to cultural resources are also addressed in this chapter.

3.4.2 - Environmental Setting

Overview

The term "cultural resources" encompasses historic, archaeological, tribal cultural resources, and burial sites containing human remains. Below is a brief summary of each component:

- **Historic Resources:** Historic resources are associated with the recent past. In California, historic resources are typically associated with the Spanish, Mexican, and American periods in the State's history and are generally less than 200 years old.
- **Archaeological Resources**: Archaeology is the study of artifacts and material culture with the aim of understanding human activities and cultures in the past. Archaeological resources may be associated with prehistoric indigenous cultures as well as historic periods.
- **Tribal Cultural Resources:** Tribal Cultural Resources (TCRs) include sites, features, places, or objects that are of cultural value to one or more California Native American Tribes.
- **Burial Sites and Cemeteries:** Burial sites and cemeteries are formal or informal locations where human remains have been interred. Native American burial sites are also considered TCRs of cultural value to one or more California Native American Tribe.

Cultural Setting

Following is a brief overview of the prehistory, ethnography, and historic background, providing a context in which to understand the background and relevance of sites found in the general project area. This section is not intended to be a comprehensive review of the current resources available; rather, it serves as a general overview. Further details can be found in ethnographic studies, mission records, and major published sources.[1,2,3,4,5]

[1] Kroeber, A.L. 1925. Handbook of the Indians of California. Bulletin 78. Bureau of American Ethnology. Washington, DC: Smithsonian Institution
[2] Beardsley, R.K. 1948. "Cultural Sequences in Central California Archaeology." American Antiquity 14:1-28.
[3] Bennyhoff, J. 1950. Californian Fish Spears and Harpoons. Berkeley: University of California Anthropological Records 9(4):295-338.
[4] Chartkoff J.L. and K.K. Chartkoff. 1984. The Archaeology of California. Menlo Park: Stanford University Press.
[5] Moratto, M.J. 1984. California Archaeology. San Diego: Academic Press.

Prehistory

Early archaeological investigations in central California were conducted at sites located in the Sacramento-San Joaquin Delta region. The first published account documents investigations in the Lodi and Stockton area.[6] The initial archaeological reports typically contained descriptive narratives, with more systematic approaches sponsored by Sacramento Junior College in the 1930s. At the same time, University of California at Berkeley excavated several sites in the lower Sacramento Valley and Delta region, which resulted in recognizing archaeological site patterns based on variations of inter-site assemblages. Research during the 1930s identified temporal periods in central California prehistory and provided an initial chronological sequence.[7] In 1939, Lillard noted that each cultural period led directly to the next and that influences spread from the Delta region to other regions in central California.[8] In the late 1940s and early 1950s, Beardsley documented similarities in artifacts among sites in the San Francisco Bay region and the Delta and refined his findings into a cultural model that ultimately became known as the Central California Taxonomic System (CCTS). This system proposed a uniform, linear sequence of cultural succession.[9,10] The CCTS system was challenged by Gerow, whose work looked at radiocarbon dating to show that Early and Middle Horizon sites were not subsequent developments but, at least partially, contemporaneous.[11,12,13]

To address some of the flaws in the CCTS system, Fredrickson introduced a revision that incorporated a system of spatial and cultural integrative units.[14] Fredrickson separated cultural, temporal, and spatial units from each other and assigned them to six chronological periods: Paleo-Indian 12,000 to 8000 years Before Present (BP); Lower, Middle, and Upper Archaic (8000 to 1500 BP), and Emergent (Upper and Lower, 1500 to 250 BP). The suggested temporal ranges are similar to earlier horizons, which are broad cultural units that can be arranged in a temporal sequence.[15] In addition, Fredrickson defined several patterns—a general way of life shared within a specific geographical region. These patterns include:

- Windmiller Pattern or Early Horizon (4500 to 3500 BP)
- Berkeley Pattern or Middle Horizon (3500 to 1500 BP)
- Augustine Pattern or Late Horizon (1500 to 250 BP)

Brief descriptions of these temporal ranges and their unique characteristics follow.

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6 Schenck, W.E. and E. J. Dawson. 1929. Archaeology of the Northern San Joaquin Valley. American Archaeology and Ethnology 25:286–413.

7 Lillard, J.B. and W.K. Purves. 1936. The Archaeology of the Deer Creek-Cosumnes Area, Sacramento Co., California. Sacramento: Sacramento Junior College, Department of Anthropology Bulletin 1.

8 Lillard, J.B., R.F. Heizer, and F. Fenenga. 1939. An Introduction to the Archaeology of Central California. Sacramento Junior College, Department of Anthropology, Bulletin 2.

9 Beardsley, R.K. 1948. Cultural Sequences in Central California Archaeology. American Antiquity 14:1–28.

10 Beardsley, R.K. 1954. Temporal and Areal Relationships in Central California Archaeology. University of California Archaeological Survey Reports 24:1–62; 25:63–131.

11 Gerow, B.A. 1954. The Problem of Cultural Sequences in Central California Archaeology. Paper presented at the Annual Meeting of the American Association for the Advancement of Sciences.

12 Gerow, B.A. 1974. Comments on Fredrickson's Cultural Diversity. The Journal of California Anthropology 1(2):239–246.

13 Gerow, B.A., with R. Force. 1968. An Analysis of the University Village Complex with a Reappraisal of Central California Archaeology. Stanford University Press. Stanford, California.

14 Fredrickson, D.A. 1973. Early Cultures of the North Coast of the North Coast Ranges, California. PhD dissertation.

15 Moratto, M.J. 1984. California Archaeology. San Diego: Academic Press. Northwest Information Center (NWIC). Rohnert Park. File Number 05-1169.

Windmiller Pattern or Early Horizon (4500 to 3500 BP)

Characterized by the Windmiller Pattern, the Early Horizon was centered in the Cosumnes district of the Delta and emphasized hunting rather than gathering, as evidenced by the abundance of projectile points in relation to plant processing tools. Additionally, atlatl, dart, and spear technologies typically included stemmed projectile points of slate and chert but minimal obsidian. The large variety of projectile point types and faunal remains suggests exploitation of numerous types of terrestrial and aquatic species.[16,17] Burials occurred in cemeteries and intra-village graves. These burials typically were ventrally extended, although some dorsal extensions are known with a westerly orientation and a high number of grave goods. Trade networks focused on acquisition of ornamental and ceremonial objects in finished form rather than on raw material. The presence of artifacts made of exotic materials, such as quartz, obsidian, and shell, indicates an extensive trade network that may represent the arrival of Utian populations into central California. Also indicative of this period are rectangular *Haliotis* and *Olivella* shell beads and charmstones that usually were perforated.

Berkeley Pattern or Middle Horizon (3500 to 1500 BP)

The Middle Horizon is characterized by the Berkeley Pattern, which displays considerable changes from the Early Horizon. This period exhibited a strong milling technology represented by minimally shaped cobble mortars and pestles, although metates and manos were still used. Dart and atlatl technologies during this period were characterized by non-stemmed projectile points made primarily of obsidian. Fredrickson suggests that the Berkeley Pattern marked the eastward expansion of Miwok groups from the San Francisco Bay Area.[18] Compared with the Early Horizon, there is a higher proportion of grinding implements at this time, implying an emphasis on plant resources rather than on hunting. Typical burials occurred within the village with flexed positions, variable cardinal orientation, and some cremations. As noted by Lillard, the practice of spreading ground ochre over the burial was common at this time.[19] Grave goods during this period are generally sparse and typically include only utilitarian items and a few ornamental objects. However, objects such as charmstones, quartz crystals, and bone whistles occasionally were present, which suggest the religious or ceremonial significance of the individual.[20] During this period, larger populations are suggested by the number and depth of sites compared with the Windmiller Pattern. According to Fredrickson, the Berkeley Pattern reflects gradual expansion or assimilation of different populations rather than sudden population replacement and a gradual shift in economic emphasis.[21]

Augustine Pattern or Late Horizon (1500 to 250 BP)

The Late Horizon is characterized by the Augustine Pattern, which represents a shift in the general subsistence pattern. Changes include the introduction of bow and arrow technology; and most

[16] Bennyhoff, J. 1950. Californian Fish Spears and Harpoons. University of California Anthropological Records 9(4):295–338.
[17] Ragir, S.R. 1972. The Early Horizon in Central California Prehistory. Contributions of the University of California Archaeological Research Facility 15. Berkeley, CA.
[18] Fredrickson, D.A. 1973. Early Cultures of the North Coast of the North Coast Ranges, California. PhD dissertation.
[19] Lillard, J.B., R.F. Heizer, and F. Fenenga. 1939. An Introduction to the Archaeology of Central California. Sacramento Junior College, Department of Anthropology, Bulletin 2.
[20] Hughes, R.E. (editor). 1994. Toward a New Taxonomic Framework for Central California Archaeology: Essays by James A. Bennyhoff and David A. Fredrickson. Assembled and edited by Richard E. Hughes. Contributions of the University of California No. 52, Archaeological Research Facility, Berkeley, CA.
[21] Fredrickson, D.A. 1974. Cultural Diversity in Early Central California: A View from the North Coast Ranges. Journal of California Anthropology 1:41–53.

importantly, acorns became the predominant food resource. Trade systems expanded to include raw resources as well as finished products. There are more baked clay artifacts and extensive use of Haliotis ornaments of many elaborate shapes and forms. Burial patterns retained the use of flexed burials with variable orientation, but there was a reduction in the use of ochre and widespread evidence of cremation.[22] Judging from the number and types of grave goods associated with the two types of burials, cremation seems to have been reserved for individuals of higher status, whereas other individuals were buried in flexed positions. Johnson suggests that the Augustine Pattern represents expansion of the Wintuan population from the north, which resulted in combining new traits with those established during the Berkeley Pattern.[23]

Central California research has expanded from an emphasis on defining chronological and cultural units to a more comprehensive look at settlement and subsistence systems. This shift is illustrated by the early use of burials to identify mortuary assemblages and more recent research using osteological data to determine the health of prehistoric populations.[24] Although debate continues over a single model or sequence for central California, the general framework consisting of three temporal/cultural units is generally accepted. The identification of regional and local variation is a major goal of current archaeological research.

Regional Investigations

The majority of previous investigations in the lower Sacramento Valley have been conducted east of the Sacramento River, typically along the Cosumnes River. Two investigations that focused on the lower Sacramento Valley are CA-SAC-133 and CA-SAC-16, among others.[25,26] Pertinent to the proposed project is CA-SOL-363 located in Dixon, which documented 15 features and 39 burials. The assemblage included projectile points, primarily lanceolate forms, manufactured from obsidian found in Napa Valley, which are typically associated with the Berkeley Pattern. The predominant type of shell beads were Olivella, Class F2a, F2b, F3b, G5, and C3, which were attributed to the Intermediate Phase of the Middle Period. The lack of Augustine Pattern components is indicated by the absence of Olivella Class M shell beads and clamshell disk beads.[27] The paucity of milling tools in relation to projectile points suggests that subsistence strategies relied on hunting rather than vegetal resources. The analyzed faunal remains indicated that the site was used seasonally as a winter camp. Consistent with Berkeley Pattern burial practices, burials at the site were flexed with variable cardinal orientation. No cremations were reported at the site.

[22] Moratto, M.J. 1984. California Archaeology. San Diego: Academic Press. Northwest Information Center (NWIC). Rohnert Park. File Number 05-1169.

[23] Johnson, P.J. 1978. Patwin. In R.F. Heizer, vol. ed., Handbook of the North American Indians, Volume 8, California 350–360. Washington, DC. Smithsonian Institution.

[24] Dickel, D.N., P. D. Schulz, and H.M. McHenry. 1984. Central California: Prehistoric Subsistence Changes and Health. In Paleopathology at the Origins of Agriculture, edited by Mark Nathan Cohen and George J. Armelagos, pp. 439–462. Academic Press, Inc. Orlando, FL.

[25] Bouey, P.D. and S.A. Waechter. 1992. Preliminary Report on Phase II Test Excavations at CA-SAC-133 near Sloughhouse, Sacramento County, California. Report to California Department of Transportation, District 3, Marysville, CA.

[26] Derr, E.H. 1983. Archaeological Investigations at CA-SAC-16: Interpretations of a Middle/Late Horizon Village in the Lower Sacramento Valley of California. Master's thesis.

[27] Rosenthal, J.S. and G. White. 1994. Archaeological Investigations at the Pheasant Run Site, CA-Sol-363. Report to Kaufman and Broad of Northern California, Inc., Roseville, CA.

The Patwin Tribe

At the time of European contact, the project vicinity was occupied by the Patwin Tribe of California Native Americans. The Patwin occupied the southwest Sacramento Valley from the town of Princeton, north of Colusa, south to San Pablo and Suisun Bays, and from the lower hills of the eastern North Coast Ranges to the Sacramento River. Patwin territory extended approximately 40 miles east to west and 90 miles north to south. Based primarily on linguistic variation, the Patwin are the most southern division of the Wintuan population, who are members of the Penutian linguistic stock. Distinction is made between the Hill and River Patwin. Hill Patwin had villages located in valleys along the hills of the Vaca Mountains and Coast Ranges with populations concentrated in Indian, Bear, Capay, Cortina, Long, and Napa valleys. In general, the River Patwin occupied the west banks of the lower Sacramento River below the Feather River as well as the lower reaches of Cache and Putah creeks in the Sacramento Valley.[28] The Hill Patwin village closest to the project area is ethnographically known as Tolenas.

The Patwin political organization was centered on the Tribelet, which consisted of a primary village with smaller satellite villages governed by a head chief. Tribelets were autonomous and differed from each other with minor cultural variations. The economic and ceremonial activities of each village were administered by a chief whose position was typically passed on patrilineally, although some chiefs were chosen by village elders. The chief administered subsistence ventures, such as hunting and gathering expeditions, and served as the primary resource distributor.[29]The Patwin subsistence base varied with the seasons and included gathering seeds and plant resources on the plains, netting migratory waterfowl in the tule marshes, and netting salmon and other fish in the rivers and streams. Acorns were a staple in the Patwin diet and were obtained from communally owned hill and valley oak groves. The Patwin stored the acorns in granaries as insurance against famine in poor harvest years. Ethnographic reports indicate the Patwin obtained large game such as deer, tule elk, and antelope by using nets or shooting with bows and arrows. Fish resources were of particular importance to the River Patwin and included perch, sturgeon, salmon, sucker, trout, pike, and other riverine species such as mussels and turtles, which were caught with bone fishhooks, nets, weirs, and seines.[30] The Patwin trade system included various resources that were exchanged with the Wappo, Nomlake, Southeastern Pomo, and Hill Patwin. The River Patwin obtained obsidian from sources to the west and east. Initially, finished shell beads were obtained from coastal Tribes, but later, the River Patwin traded for whole shells from the Pacific Coast and produced the beads themselves. Relationships with nearby Tribes and other Patwin Tribelets were not always friendly. Patwin relations with Napa Valley groups were strained by provocations primarily incited by poaching; subsequent retaliations resulted in organized battles between individuals or groups or surprise attacks on villages.

Patwin mortuary practices included burials in cemeteries located at one end of the village in which the possessions of the deceased were buried with them; at some locations, property was burned near the grave. Typically, only people who died or were killed away from the village were cremated. According to a Hill Patwin informant, “The River people [Patwin] set a corpse upright, then pushed

[28] Cook, S.F. 1976. The Population of the California Indians 1769–1970. University of California Press. Berkeley, California.
[29] McKern, W.K. 1922. Functional Families of the Patwin. American Archaeology and Ethnology 13(7)235–258. Berkeley, California.
[30] Johnson, P.J. 1978. Patwin. In R.F. Heizer, vol. ed., Handbook of the North American Indians, Volume 8, California 350–360. Washington, DC: Smithsonian Institution.

the head down, broke the back, wrapped the body in a skin, and put it in the grave." In addition, long burial ropes constructed of hemp were wrapped around the deceased, and the River Patwin utilized temporary containers made of tule reeds.[31]

Regional Historic Background

Spanish and Mexican Period

Spanish exploration into the Central Valley dates back to the late 1700s. Spanish mission records indicate that by 1800, Patwin inhabitants at Aguastos, the south-central area, and other villages were being taken to Mission Dolores and that Mission Sonoma, built in 1823, was baptizing Patwin Tribal members until secularization of the missions in 1833. Many Native Americans were not willing converts: there are numerous accounts of neophytes fleeing the missions, and a series of "Indian Wars" broke out when the Spanish tried to return them to the missions. During this period, Native American populations were declining rapidly because of an influx of Euro-American diseases. In 1832, a party of trappers from the Hudson's Bay Company, led by John Work, traveled down the Sacramento River, unintentionally spreading a malaria epidemic to Native Californians. Four years later, a smallpox epidemic decimated local populations. It is estimated that up to 75 percent of the Patwin died.[32]

The Mexican Period, 1821 to 1848, was marked by secularization and division of mission lands among the Californios as land grants, termed ranchos. During this period, Mariano G. Vallejo assumed authority of Sonoma Mission and established a friendly relationship with the Native Americans who were living there. In particular, Vallejo worked closely with Chief Solano, a Patwin who served as Vallejo's spokesperson when problems with Native American Tribes arose. The large rancho lands often were worked by Native Americans who were used as forced labor.

The Fairfield-Suisun area lies within the area petitioned by José Francisco Armijo in 1839. Armijo was granted the Rancho Tolenas land by Governor Alvarado the following year. Armijo's son, Antonia, acquired the land when his father died in 1850, and it was subsequently acquired by Captain R.H. Waterman in 1858. Shortly after acquiring the land, Waterman offered 16 acres to Solano County for a new, more centrally located County seat. Solano County voters accepted the offer, and the County seat was relocated from Benicia to the new town of Fairfield, where it remains today.[33]

Gold Rush and American Expansion

In 1848, James W. Marshall discovered gold at Coloma in modern-day El Dorado County, which started the gold rush into the region that forever altered the course of California's history. The arrival of thousands of gold seekers in the territory contributed to the exploration and settlement of the entire State. By late 1848, approximately four out of five men in California were gold miners.[34] The gold rush originated along the reaches of the American River and other tributaries to the Sacramento River, and Hangtown, present-day Placerville, became the closest town offering mining

[31] Johnson, P.J. 1978. Patwin. In R.F. Heizer, vol. ed., Handbook of the North American Indians, Volume 8, California 350–360. Washington, DC: Smithsonian Institution.

[32] Cook, S.F. 1955. The Epidemic of 1830–1833 in California and Oregon. American Archaeology and Ethnology, 43(3): 303–326.

[33] Charles Hall Page and Associates. 1982. Survey of Cultural Resources: Central California. Office of Environmental Affairs, City of Fairfield.

[34] Robinson, W.W. 1948. Land in California. University of California Press, Berkeley.

supplies and other necessities for the miners in El Dorado County. Gold subsequently was found in the tributaries to the San Joaquin River, which flowed north to join the Sacramento River in the Great Delta east of San Francisco Bay.

As mining spread, mining techniques changed. Initially, miners relied on gold panning in a shallow pan until the heavier, gold-bearing materials fell to the bottom while the water and lighter sand spilled out over the rim. This technique was displaced by simple mining machines like the wooden "rocker" into which pails of water were emptied and processed at one time. The gold in and around stream beds was soon exhausted, and hard-rock mining took over, digging shafts up to 40 feet deep with horizontal tunnels radiating from these shafts in search of subterranean veins of gold-bearing quartz.[35]

By 1864, California's gold rush had essentially ended. The rich surface and river placers were largely exhausted and the miners either returned to their homelands or stayed to start new lives in California. After the gold rush, people in towns such as Jackson, Placerville, and Sonora turned to other means of commerce, such as ranching, agriculture, and timber production. With the decline of gold mining, agriculture and ranching came to the forefront in the State's economy. California's natural resources and moderate climate proved well suited for cultivation of a variety of fruits, nuts, vegetables, and grains.[36]

Local History

Solano County and Fairfield-Suisun City

Solano County was created in 1850 and is one of the original 18 counties created at statehood. Originally named Benicia County in January 1850, its name was changed three months later to Solano County in honor of Chief Solano, who ruled over most of the indigenous Tribes between the Sacramento River and Petaluma Creek. The County retains its original boundaries as they were delineated in 1850. Early settlers into the County cultivated fruits and vegetables for local consumption, and grains were grown on a larger scale for export. Dry farm crops such as wheat and oats used for cattle fodder proved profitable in the area despite limited irrigation. Initially, all products were transported via the waterways, but with the completion of California Pacific Railroad, goods were transported by rail.[37]

Fruit and nut crops were particularly successful in the project vicinity, and by 1910, Solano-Yolo Land and Water Company proposed dam and irrigation systems to support these crops. However, by 1930, government standards resulted in sales and abandonment of orchards with subsequent fruit worker strikes and riots resulting in the 1934 to 1935 closure of the peach and cherry shipping industry. The fruit and nut industries slowly recuperated and were aided by the formation of the Solano Irrigation District in 1948. Solano County continued to grow over the years with the addition of Travis Air Force Base in 1943, new industrial parks, and a resurgence of fruit processing and packing warehouses.[38]

[35] The Virtual Museum of San Francisco (VMSF). 2006. California Notes. Website: http://www.sfmuseum.org/hist9/turrillgold.html.
[36] Beck, W. and Y.D. Haase. 1974. Historical Atlas of California. University of Oklahoma Press. Norman, Oklahoma.
[37] Rawls, J.J. and W. Bean. 1993. California: An Interpretive History. McGraw Hill, San Francisco
[38] RootsWeb.com. 2006. Website: www.rootsweb.com/cascgsi/soltimeline.htm.

The primary industry that brought early settlers into the Fairfield-Suisun area was farming. The rich Delta soil and temperate climate proved beneficial for cultivating vegetables and fruit, and the nearby Suisun Slough provided a ready source of transportation for shipping to the gold mining towns of the Sierra Nevada. In addition to growing fruits and vegetables, farmers soon discovered that dry farm crops such as oats and wheat could be grown in the area with minimal irrigation. The first railroad into the Fairfield-Suisun area was the California Pacific built in 1874, which replaced water transport as the main source for transporting local products.

The Fairfield-Suisun area continued to grow throughout the 20th century. Because of its prime location between the major cities of San Francisco and Sacramento, roads and highways were constructed, which supported the increasing agricultural and light manufacturing industries. In addition, the development Travis Air Force Base brought military personnel who encouraged construction of homes, schools, and shopping complexes. Construction of the base began in 1942: originally named the Fairfield-Suisun Army Air base, it was renamed in 1951 after Brigadier General Robert F. Travis, who was killed in an explosion in 1950. The base is called the "Gateway to the Pacific" and continues to provide extensive support to United States troops around the globe.

3.4.3 - Methodology

Records Searches and Pedestrian Survey to Identify Existing Cultural Resources

The information in this section is based on the Phase I CRA prepared for this project by FirstCarbon Solutions (FCS) in February 2017 and an updated NWIC records search performed in 2021. The Phase I CRA used the following methods to analyze the potential impacts of project implementation:

Northwest Information Center

On September 28, 2016, and February 2, 2021, FCS staff conducted records searches for the project site and a 0.5-mile radius beyond the project boundaries at the NWIC, located at California State University Sonoma. To identify any historic properties or resources, the current inventories of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Historical Landmarks (CHL) list, the California Points of Historical Interest (CPHI) list, and the California Built Environment Resource Directory (BERD) for Solano County were reviewed to determine the existence of previously documented local historical resources. Results from the NWIC indicate that no resources have been recorded within 0.5 mile of the project site. In addition, 29 area-specific survey reports are on file with the NWIC for the search radius. Fifteen of the previous surveys assessed the project site, 12 of which address the project site in its entirety, suggesting the project site has been previously surveyed for cultural resources with negative results.

Table 1: Previous Investigations within a 0.5-mile Radius of the Project Area

Report Number	Report Title/Project Focus	Author	Date
S-000595	A Report on the Status of Generally Available Data Regarding Archaeological, Ethnographic, and Historical Resources Within a 5-mile-wide Corridor through Portions of Colusa, Yolo, Solano, and Contra Costa Counties, California	R.F. King	1974

Report Number	Report Title/Project Focus	Author	Date
S-000848	A Summary of Knowledge of the Central and Northern California Coastal Zone and Offshore Areas, Vol. III, Socioeconomic Conditions, Chapter 7: Historical and Archaeological Resources	David A. Fredrickson	1976
S-001784	Preliminary Cultural Resources Identification: San Francisco Bay Study for Corps of Engineers Projects	David Chavez	1979
S-005167	Cultural Resources Evaluation of the North Bay Aqueduct Alignment Alternatives (Routes 1, 4 and 6), Solano County, California	David Chavez	1980
S-005171	Archaeological Surveys in Solano County, California: Solano County Water Project Feasibility Study	D. L. True	1979
S-006210	Final Environmental Impact Report, Potrero Hills Project	Mike Rushton	1974
S-009462	Identification and Recording of Prehistoric Petroglyphs in Marin and Related Bay Area Counties	Teresa Ann Miller	1977
S-009795	Late Prehistoric Obsidian Exchange in Central California	Thomas Lynn Jackson	1986
S-012743	An archaeological survey for a proposed highway widening project, 10-SOL-Walters Rd. 10201-926434	Greg Greenway	1975
S-012752	Archaeological Evaluation of the Proposed Urban Development of Suisun City, Solano County, California	Miley Paul Holman, Dean H. Gaumer, and David Chavez	1976
S-015732	An Archaeological and Historic Resources Survey and Inventory of Travis Air Force Base, Fairfield, Solano County, California	Argonne National Laboratory	1992
S-017835	Biological Distance of Prehistoric Central California Populations Derived from Non-Metric Traits of the Cranium	Judy Myers Suchey	1975
S-026377	Records Search Results and Site Visit for Sprint PCS Facility Candidate SF59XC201B (Suisun Monument), Highway 12 and Walters Road, Suisun, Solano County, California	Wayne H. Bonner	2004
S-029928	Proposed 70-foot-tall new light pole with antennas and new equipment shelter, East Suisun City/CA-2720A, 4489 Peterson Road, Suisun, California	Lorna Billat	2005
S-030204	**The Distribution and Antiquity of the California Pecked Curvilinear Nucleated (PCN) Rock Art Tradition**	**Donna L. Gillette**	**2003**
S-030857	Cultural Resource Records Search Results and Site Visit for T-Mobile Telecommunications Facility Candidate BA10460 (Suisun Sports Complex), 4479-4555 Peterson Road, Suisun City, Solano County, California	Wayne H. Bonner and James M. Keasling	2006
S-032047	Historic Property Survey Report, Historical Resources Evaluation Report, and Archaeological Survey Report, Jepson Parkway Project, Caltrans District 4, Solano County	Madeline Bowen and Barbra Siskin	2005

Report Number	Report Title/Project Focus	Author	Date
S-032596	**The Central California Ethnographic Community Distribution Model, Version 2.0, with Special Attention to the San Francisco Bay Area, Cultural Resources Inventory of Caltrans District 4 Rural Conventional Highways**	**Randall Milliken, Jerome King, and Patricia Mikkelsen**	**2006**
S-033032	**Results and Recommendations for Cultural Resource Assessment of the Connector Road Project in the County of Solano, California (letter report)**	**Deborah McLean**	**1999**
S-033132	Archaeological Survey Report for the Solano 12 Road Rehabilitation Project, 04-SOL-12, PM 7.9/20.6, EA 0T0900/0T1010	Christopher Caputo	2006
S-033265	Travis Air Force Base, Fairfield, California: Inventory of Cold War Properties	Karen J. Weitze	1996
S-033600	**Geoarchaeological Overview of the Nine Bay Area Counties in Caltrans District 4**	**Jack Meyer and Jeff Rosenthal**	**2007**
S-041950	PG&E PSEP DFM 0604-16—Travis Air Force Base, Solano County, California (letter report)	Amy Foutch	2013
S-042485	Draft Integrated Cultural Resources Management Plan, Travis Air Force Base, Fairfield, California	Parsons Engineering	2003
S-043268	**Volume 1—Archaeological Resources: Suisun Marsh Habitat Management, Preservation, and Restoration Plan, Cultural Resources Contextual Report**	**Jack Meyer, Julia Costello, Patricia Mikkelsen, Melissa Johnson, and Naomi Scher**	**2013**
S-044157	Cultural Resources Constraints Report: Peabody 2109-Fairfield Pole Replacements and New Pole Installations	Mark Kile	2013
S-046407	Cultural Resources Study of the PG&E Hydrostatic Test Segment T-225-13, on DFM-0604-07, Solano County, California	Amy Foutch Porras	2013
S-049780	**San Francisco Bay-Delta Regional Context and Research Design for Native American Archaeological Resources, Caltrans District 4**	**Brian F. Byrd, Adrian R. Whitaker, Patricia J. Mikkelsen, and Jeffrey S. Rosenthal**	**2017**
S-050984	**Expansion of Cooperative Program to Eradicate Mediterranean Fruit Fly (Medfly) Infestation and Prevent the Spread of Medfly to Non-Infested Areas of the United States (letter report)**	**Elizabeth Nelson**	**2017**

Source: NWIC Records Search September 28, 2016, and February 2, 2021.
Reports listed in **Bold** address sections of the project site

Native American Heritage Commission

On September 22, 2016, FCS sent a request letter to the NAHC in an effort to determine whether any sacred sites are listed on its Sacred Lands File for the project area. A response was received on October 4, 2016, indicating that the Sacred Lands File failed to indicate the presence of Native American cultural resources in the immediate project area. The NAHC included a list of two Tribal representatives available for consultation. To ensure that all Native American knowledge and concerns over potential TCRs that may be affected by the proposed project are addressed, a letter containing project information and requesting any additional information was sent to each Tribal representative on October 13, 2016. No responses were received.

Pursuant to Senate Bill (SB) 18 (2004) (California Government Code § 65352.3), and the proposed General Plan Amendment, the City of Suisun City sent a letter to the NAHC on July 6, 2016, in an effort to identify Tribal representatives who may wish to consult on the proposed project. A response was received from the NAHC on July 25, 2016, that included a list of two Tribal representatives available for consultation. Letters containing project information and an invitation to consult under SB 18 were sent by certified mail to both Tribes on July 26, 2016. On August 17, 2016, a letter was received from the Yocha Dehe Wintun Nation expressing concerns for cultural resources in the area, and requesting a copy of the cultural resources study.

The City responded on August 28, 2016, stating that a cultural resources study would be required to complete the EIR and that the City would provide a copy of the study once completed. The City also requested a meeting to discuss the resources identified within the project area. This meeting was arranged by Archaeologist Nichole Davis of Michael Baker International, who conducted a site visit with Duke Thomas Johnson Ellingson of the Yocha Dehe Wintun Nation at the project site on January 6, 2017. The site was walked and wetlands were closely inspected at the southern extent of the project site. No cultural places were observed and none have been identified. During the site visit, Michael Baker International provided a new site plan and answered questions regarding excavation depths and equipment use. During the site visit with Mr. Ellingson and a follow-up telephone call with Mr. Laverne Bill, the Tribe indicated that they would draft a letter to summarize the site visit and provide next steps.

On January 23, 2017, the City received a letter from the Yocha Dehe stating that the Tribe had completed a records search and had identified a resource near the project area, which elevates the sensitivity of encountering prehistoric archaeological resources. The Yocha Dehe requested a monitoring agreement be established where the applicant would pay for a Native American Monitor during construction, the specifics of which would be detailed in the agreement. After FCS provided initial results of the field survey and records search, Nichole Davis responded on behalf of the City asking to set up a meeting with City, FCS, and MBI to discuss the Tribe's findings and request for monitoring.

On February 14, 2017, Nichole Davis followed-up with James Sarmento of the Yocha Dehe Wintun Nation, asking to set up a meeting. Mr. Sarmento requested additional project description information which was provided same day. Mr. Sarmento said he would review and respond with whether the Yocha Dehe would still requesting monitoring, given that the majority of the area the Tribe feels is sensitive is located in the southern portion of the project area, where the project

proposes open space and no impacts. As of this date, no additional correspondence has been received.

On January 22, 2021, FCS sent an updated request letter to the NAHC in an effort to determine whether any sacred sites are listed on its Sacred Lands File for the project site. A response was received on February 1, 2021, indicating that the Sacred Lands File again failed to indicate the presence of Native American cultural resources in the immediate project area. The NAHC included a list of seven Tribal representatives available for consultation. To ensure that all Native American knowledge and concerns over potential TCRs that may be affected by the proposed project are addressed, a letter containing project information and requesting any additional information was sent to each Tribal representative on February 4, 2021. No responses have been received to date.

On October 21, 2021, the City of Suisun City received another letter from the Yocha Dehe Wintun Nation reiterating its previous comments regarding monitoring.

Cultural Resoures Pedestrian Survey

On November 15, 2016, FCS Senior Archaeologist Dana DePietro, PhD, and Robert Carroll, MA, surveyed the project area for additional unrecorded cultural resources. The survey began in the northwest corner of the project site and moved east, inspecting each parcel for cultural resources using north–south transects spaced at 15-meter intervals whenever possible. The area has been subject to extensive agricultural activity, including grading, disking, and the realignment of agricultural canals. Soil visibility was moderate across the site, ranging from 50 to 80 percent, which was due to foliage and light ground cover. Soils in sections of poor visibility were intermittently inspected using a hand trowel. Observed soils were largely composed of light gray brown silt interspersed with small (5- to 10-centimeter) stones primarily composed of quartz, schist, and basalt. These soils exhibited a tendency to become darker in color and less friable in the south of the project area, but when sampled and dried, it was determined this was the result of moisture and closer proximity to the marshy areas in the south of the site.

Survey conditions were documented using digital photographs and field notes. During the survey, Dr. DePietro examined all areas of the exposed ground surface for prehistoric artifacts (e.g., fire-affected rock, milling tools, flaked stone tools, toolmaking debris, ceramics), soil discoloration and depressions that might indicate the presence of a cultural midden, faunal and human osteological remains, and features indicative of the former presence of structures or buildings (e.g., postholes, standing exterior walls, foundations) or historic debris (e.g., glass, metal, ceramics).

Several modern fences and drains were observed within the project site, delineating parcel boundaries from north to south. These structures were determined to be less than 45 years in age and do not appear to be eligible for inclusion in the NRHP or CRHR. Isolated historic remains, including a rusted horseshoe, a tractor gear, and a derelict windmill, were observed at various points during the survey; however, these did not appear to be part of a larger contiguous site or historic trash heap and, as such, do not rise to the level of potential historic significance under the California Environmental Quality Act (CEQA).

Particular attention was paid to areas closer to water and natural resources, such as the marshlands located along the southern boundary of the site. These areas were closely inspected for culturally modified soils or other indicators of potential historic or prehistoric resources. No historic or prehistoric cultural resources or raw materials commonly used in the manufacture of tools (e.g., obsidian, Franciscan chert) were found in these areas, nor were any observed elsewhere within the project site.

3.4.4 - Regulatory Framework

Federal

National Historic Preservation Act

The National Historic Preservation Act of 1966 (NHPA), as amended, established the NRHP, which contains an inventory of the nation's significant prehistoric and historic properties. Under 36 Code of Federal Regulations 60, a property is recommended for possible inclusion on the NRHP if it is at least 50 years old, has integrity, and meets one of the following criteria:

- It is associated with significant events in history, or broad patterns of events.
- It is associated with significant people in the past.
- It embodies the distinctive characteristics of an architectural type, period, or method of construction; or it is the work of a master or possesses high artistic value; or it represents a significant and distinguishable entity whose components may lack individual distinction.
- It has yielded, or may yield, information important in history or prehistory.

Certain types of properties are usually excluded from consideration for listing in the NRHP, but they can be considered if they meet special requirements in addition to meeting the criteria listed above. Such properties include religious sites, relocated properties, graves and cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act (ARPA) amended the Antiquities Act of 1906 (16 United States Code [USC] 431–433) and set a broad policy that archaeological resources are important to the nation and should be protected and required special permits before the excavation or removal of archaeological resources from public or Indian lands. The purpose of ARPA was to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites that are on public lands and Indian lands, and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data that were obtained before October 31, 1979.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act (AIRFA) established federal policy to protect and preserve the inherent rights of freedom for Native groups to believe, express, and exercise their

traditional religions. These rights include but are not limited to access to sites, use and possession of sacred objects, and freedom to worship through ceremonials and traditional rites.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act of 1990 sets provisions for the intentional removal and inadvertent discovery of human remains and other cultural items from federal and Tribal lands. It clarifies the ownership of human remains and sets forth a process for repatriation of human remains and associated funerary objects and sacred religious objects to the Native American groups claiming to be lineal descendants or culturally affiliated with the remains or objects. It requires any federally funded institution housing Native American remains or artifacts to compile an inventory of all cultural items within the museum or with its agency and to provide a summary to any Native American Tribe claiming affiliation.

State

CEQA Guidelines Section 15064.5(a)—CEQA Definition of Historical Resources

CEQA Guidelines Section 15064.5(a), in Title 14 of the California Code of Regulations, defines a "historical resource" as:

(1) A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the California Register of Historical Resources.

(2) A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

(3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources.

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

Therefore, under the CEQA Guidelines, even if a resource is not included on any local, State, or federal register, or identified in a qualifying historical resources survey, a lead agency may still determine that any resource is a historical resource for the purposes of CEQA if there is substantial

evidence supporting such a determination. A lead agency must consider a resource to be historically significant if it finds that the resource meets the criteria for listing in the CRHR.

Archaeological and historical sites are protected pursuant to a wide variety of State policies and regulations, as enumerated in the Public Resources Code Section 5024.1. Cultural resources are recognized as nonrenewable resources and receive additional protection under the Public Resources Code and CEQA.

Public Resources Code 5024.1(c)—Definition of a Historic Resource

CEQA Guidelines Section 15064.5(a)(3), in Title 14 of the California Code of Regulations, incorporates into the definition of a "historical resource" a resource that qualifies for inclusion in the CRHR, as set forth in subdivision (c) of Public Resources Code Section 5024.1. That provision states that a resource may be listed as a historical resource in the CRHR if it meets any of the following NRHP criteria:

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

The CRHR and many local preservation ordinances have employed the criteria for eligibility to the NRHP as a model (see criteria described above under the description of the NHPA) since the NHPA provides the highest standard for evaluating the significance of historic resources. A resource that meets NRHP criteria is clearly significant. In addition, a resource that does not meet NRHP standards may still be considered historically significant at a local or State level.

Public Resources Code Section 21083.2 and CEQA Guidelines 15064.5(c)—Effects on Archaeological Resources

CEQA also requires lead agencies to consider whether projects will impact unique archaeological resources. Public Resources Code 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 any of the following criteria:

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

In contrast, "'nonunique archaeological resource' means an archaeological artifact, object, or site which does not meet the criteria in subdivision (g). A nonunique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects."

CEQA Guidelines Section 15064.5 states that a cultural resource need not be listed on any register to be found historically significant. This applies to archaeological resources. Lead agencies should evaluate archaeological sites to determine whether they meet the criteria for listing in the CRHR and thus qualify as a historical resource. Section 15064.5(c) provides that if an archaeological site is a historical resource, in that it is listed or eligible for listing in the CRHR, potential adverse impacts to it must be considered pursuant to the rules governing historical resources. If an archaeological site is considered not to be a historical resource but meets the definition of a unique archaeological resource as defined in Public Resources Code Section 21083.2, then it would be treated in accordance with the provisions of that section.

CEQA Guidelines Section 15126.4 – Mitigation for Impacts to Historical Resources

CEQA Guidelines Section 15126.6(b) sets forth special rules for mitigating impacts to historical resources. There rules address both "built" historical resources and "historical resources of an archaeological nature":

(1) Where maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction of the historical resource will be conducted in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (1995), Weeks and Grimmer, the project's impact on the historical resource shall generally be considered mitigated below a level of significance and thus is not significant.

(2) In some circumstances, documentation of a historical resource, by way of historic narrative, photographs or architectural drawings, as mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur.

(3) Public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The following factors shall be considered and discussed in an EIR for a project involving such an archaeological site:
   (A) Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.
   (B) Preservation in place may be accomplished by, but is not limited to, the following:
      1. Planning construction to avoid archaeological sites;
      2. Incorporation of sites within parks, greenspace, or other open space;
      3. Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site.
      4. Deeding the site into a permanent conservation easement.

(C) When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archaeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code. If an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation.

(D) Data recovery shall not be required for a historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented in the EIR and that the studies are deposited with the California Historical Resources Regional Information Center.

CEQA Guidelines Section 15064.5(d)—Effects on Human Remains

Native American human remains and associated burial items may be significant to descendant communities and/or may be scientifically important for their informational value. They may be significant to descendant communities for patrimonial, cultural, lineage, and religious reasons. Human remains may also be important to the scientific community, such as prehistorians, epidemiologists, and physical anthropologists. The specific stake of some descendant groups in ancestral burials is a matter of law for some groups, such as Native Americans (CEQA Guidelines § 15064.5(d); PRC § 5097.98). CEQA and other State regulations regarding Native American human remains provide the following procedural requirements to assist in avoiding potential adverse effects on human remains within the contexts of their value to both descendant communities and the scientific community:

- When an initial study identifies the existence or probable likelihood that a project would affect Native American human remains, the lead agency is to contact and work with the appropriate Native American representatives identified through the NAHC to develop an agreement for the treatment and disposal of the human remains and any associated burial items (CEQA Guidelines § 15064.5(d); PRC § 5097.98).
- If human remains are accidentally discovered, the County Coroner must be contacted. If the County Coroner determines that the human remains are Native American, the Coroner must contact the NAHC within 24 hours. The NAHC must identify the Most Likely Descendant (MLD) to provide for the opportunity to make recommendations for the treatment and disposal of the human remains and associated burial items.
- If the MLD fails to make recommendations within 24 hours of notification or the project applicant rejects the recommendations of the MLD, the Native American human remains and associated burial items must be reburied in a location not subject to future disturbance within the project site (PRC § 5097.98).
- If potentially affected human remains or a burial site may have scientific significance, whether or not it has significance to Native Americans or other descendant communities, then under

CEQA, the appropriate mitigation of effect may require the recovery of the scientific information of the remains/burial through identification, evaluation, data recovery, analysis, and interpretation (CEQA Guidelines § 15064.5(c)(2)).

Health and Safety Code Section 7050.5

Section 7050.5 of the Health and Safety code sets forth provisions related to the treatment of human remains. As the code states, "every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor"[39] except under circumstances as provided in Section 5097.99 of the Public Resource Code. The regulations also provides guidelines for the treatment of human remains found in locations other than a dedicated cemetery including responsibilities of the Coroner.

Public Resources Code Section 5097.98

Section 5097.98 provides protocol for the discovery of human remains. It states that "when the commission receives notification of a discovery of Native American human remains from a County Coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, it shall immediately notify persons believed to be most likely descended from the deceased Native American."[40] It also sets forth provisions for descendants' preferences for treatment of the human remains and what should be done if the commission is unable to identify a descendant.

California Public Resources Code Section 5097.91—Native American Heritage Commission

Section 5097.91 of the Public Resources Code established the NAHC, whose duties include the inventory of places of religious or social significance to Native Americans and the identification of known graves and cemeteries of Native Americans on private lands. Under Section 5097.91 of the Public Resources Code, a State policy of noninterference with the free expression or exercise of Native American religion was articulated along with a prohibition of severe or irreparable damage to Native American sanctified cemeteries, places of worship, religious or ceremonial sites, or sacred shrines located on public property. Section 5097.98 of the Public Resources Code specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a County Coroner. Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands.

California Senate Bill 18—Protection of Tribal Cultural Places

California SB 18 (2004) (California Government Code § 65352.3) incorporates the protection of California traditional Tribal cultural places into land use planning for cities, counties, and agencies by establishing responsibilities for local governments to contact, refer plans to, and consult with California Native American Tribes as part of the adoption or amendment of any general or specific plan proposed on or after March 1, 2005. SB 18 requires public notice to be sent to Tribes listed on the NAHC SB 18 Tribal Consultation list within the geographical areas affected by the proposed changes. Tribes must respond to a local government notice within 90 days (unless a shorter time

[39] California Legislative Information. 2019. Health and Safety Code—HSC. Website: http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=HSC&sectionNum=7050.5. Accessed February 22, 2019.

[40] Find Law. 2019. California Code, Public Resources Code—PRC § 5097.98. Website: https://codes.findlaw.com/ca/public-resources-code/prc-sect-5097-98.html. Accessed February 22, 2019.

frame has been agreed upon by the Tribe), indicating whether or not they want to consult with the local government. Consultations are for the purpose of preserving or mitigating impacts to places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code that may be affected by the proposed adoption or amendment to a general or specific plan.

California Assembly Bill 52—Effects on Tribal Cultural Resources

California Assembly Bill (AB) 52 was signed into law on September 25, 2014, and provides that any public or private "project with an effect that may cause a substantial adverse change in the significance of a Tribal Cultural Resource (TCR) is a project that may have a significant effect on the environment." TCRs include "[s]ites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are eligible for inclusion in the CRHR or included in a local register of historical resources." Under prior law, TCRs were typically addressed under the umbrella of "cultural resources," as discussed above. AB 52 formally added the category of "tribal cultural resources" to CEQA and extends the consultation and confidentiality requirements to all projects, rather than just projects subject to SB 18 as previously discussed.

The parties must consult in good faith, and consultation is deemed concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect on a TCR (if such a significant effect exists); or (2) when a party concludes that mutual agreement cannot be reached. Mitigation measures agreed upon during consultation must be recommended for inclusion in the environmental document. AB 52 also identifies mitigation measures that may be considered to avoid significant impacts if there is no agreement on appropriate mitigation. Recommended measures include:

- Preservation in place.
- Protecting the cultural character and integrity of the resource.
- Protecting the traditional use of the resource.
- Protecting the confidentiality of the resource.
- Permanent conservation easements with culturally appropriate management criteria.

California Public Resources Code Section 21074—Effects on Tribal Cultural Resources

AB 52 amended the CEQA statute to identify an additional category of resource to be considered under CEQA, called "tribal cultural resources." It added Public Resources Code Section 21074, which defines "tribal cultural resources" as follows:

(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 CRHR.
    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.

Local

City of Suisun City

General Plan

The following policies from the Suisun City General Plan are relevant to the proposed project:

Policy OSC-6.1 Buildings and other resources that have historical or architectural value should be preserved, wherever feasible.

Policy OSC-5.1 The City will use geologic mapping and cultural resource databases to determine the likely presence of resources and the appropriate level of cultural resources analysis and mitigation required for new developments.

Policy OSC-5.2 New developments shall be designed to avoid adverse impacts to any known archaeological and paleontological resources, wherever feasible.

3.4.5 - Thresholds of Significance

Appendix G of the CEQA Guidelines is a sample Initial Study checklist that includes a number of factual inquiries related to the subjects of cultural resources (including historical resources) and TCRs, as it does on a whole series of additional environmental topics. For most topics, lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance on the subject of aesthetics, or indeed on any subject addressed in the checklist. (*Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1068). Rather, with few exceptions, "CEQA grants agencies discretion to develop their own thresholds of significance" (Id.). Even so, it is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G and to use that language in fashioning thresholds.

Unlike many of inquires found in Appendix G, the inquiries on the subject of cultural resource impacts is informed by statutory language describing what constitute significant effects to historical resources and TCRs as well as by language in CEQA Guidelines Section 15064.5 addressing significant effects on historical resources. Under Public Resources Code Section 21084.1, "[a] project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment." Similarly, under Public Resources Code Section 21084.2, "[a] project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment."

Section 15064.5(b)(1) defines "[s]ubstantial adverse change in the significance of a historical resource" to mean "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired." Section 15064.5(b)(2) goes on to state that "[t]he significance of a historical resource is materially impaired when a project:

(A) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

(B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in a historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(C) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA."

No similar guidance in CEQA or the CEQA Guidelines is available with respect to impacts to unique archaeological resources or to human remains that might be disturbed during project construction.

In light of the foregoing, the City has determined that cultural resources impacts resulting from the implementation of the proposed project would be considered significant if the project would:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.

b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5.

c) Disturb any human remains, including those interred outside of formal cemeteries.

d) Cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).

e) 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 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.

f) 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:
    i. 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

ii. 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.

3.4.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the proposed project and provides mitigation measures where appropriate.

Historic Resources

Impact CUL-1:	**The proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.**

Impact Analysis

Historical resources in this context generally refer to the built environment, mainly buildings and structures over 45 years in age that may be eligible for inclusion on the CRHR or NRHP. No historic era built environment resources have been previously recorded within a 0.50-mile radius of the project site, and no additional resources were encountered during the pedestrian field survey. Accordingly, the proposed project would not have an adverse impact on historic era built environment resources.

The potential for the proposed project to cause a substantial adverse change in the significance of a historic resource would be limited to the construction phase of the proposed project during ground-disturbing activities. Therefore, operational impacts would have no impact on historical resources.

Level of Significance Before Mitigation

No impact.

Mitigation Measures

None required.

Level of Significance After Mitigation

No impact.

Archaeological Resources

Impact CUL-2:	**The proposed project may cause a substantial adverse change in the significance of a historical resource of an archaeological nature or a unique archaeological resource.**

Impact Analysis

Records search results from the NWIC indicate that no archaeological resources have been recorded within the project boundary or within a 0.5-mile radius of the project site. Previous surveys of the project site, including a survey conducted by FCS for the current project in 2017 did not identify any archaeological resources; however, there is always the possibility that subsurface archaeological resources may be encountered during project construction. Such resources may consist of, but are

not limited to stone, bone, wood, or shell artifacts or features, including hearths and structural elements. This represents a potentially significant impact related to archaeological resources.

Implementation of MM CUL- 2 would reduce potential impacts to historical resources of an archaeological nature or unique archaeological resources that may be discovered during project construction. The measure is also written so as to reduce potential impacts to any subsurface TCRs that might unexpectedly be encountered during construction. If a potential resource in one of these categories is identified, construction would be required to stop until appropriate identification and treatment measures are implemented. Therefore, direct and indirect impacts related to archaeological resources would be less than significant with mitigation.

The potential for the proposed project to cause a substantial adverse change in the significance of a historical resource of an archaeological nature, a unique archaeological resource, or a subsurface TCRs would be limited to the construction phase of the proposed project during ground-disturbing activities. Therefore, operational impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM CUL-2 (a) Prior to the initiation of construction activities, all construction personnel conducting ground disturbance at the site shall be provided a Worker Environmental Awareness Program (WEAP) cultural resources "tailgate" training. The training shall include visual aids, a discussion of applicable laws and statutes relating to archaeological resources, types of resources that may be found within the project site, and procedures to be followed in the event such resources are encountered. The training shall be conducted by an Archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for archaeology and any Native American Monitors or representatives consulting on the project. This shall be followed by an Archaeological Monitor reporting to the qualified Archaeologist, along with a Tribal Monitor, shall be present during all ground disturbance activities, including backhoe trenching and excavation. In the event a potentially significant cultural resource is encountered during subsurface earthwork activities, all construction activities within a 100-foot radius of the find shall cease and workers should avoid altering the materials until an Archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for archaeology has evaluated the find. The project applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Potentially significant cultural resources consist of, but are not limited to, stone, bone, glass, ceramics, fossils, wood, or shell artifacts, or features including hearths, structural remains, or historic dumpsites. The Archaeologist and the Tribal Monitor shall assess the find to determine whether it includes Tribal Cultural

Resources (TCRs), historical resources of an archaeological nature, or unique archaeological resources.

(b) **If** the Archaeologist, in collaboration with the Tribal Monitor, determines that the find does not include cultural resources in any of one of these three categories, work may resume immediately.

(c) If the Tribal Monitor determines that the find appears to constitute a TCRs, then the Archaeologist or Tribal Monitor shall immediately notify the City Development Services Director (CDSD), the landowner, and any other Native American representative from any traditionally and culturally affiliated Native American Tribes that requested consultation. The Tribal Monitor or any other consulting Native American representative shall be invited to assess the significance of the find and to make recommendations for further evaluation and treatment, as necessary. If no such representative can be notified or any such representative is notified but fails to respond on a timely basis (e.g., within three days), the Archaeologist may develop, for consideration by the CDSD, a proposed mitigation program that treats the TCRs with appropriate dignity, consistent with the requirements of paragraph (e) and MM CUL-4 below.

(d) If the Tribal Monitor or any other consulting Native American representative determines that the find does not constitute a TCRs but does constitute either a historical resource of an archaeological nature or a unique archaeological resource, he or she shall immediately notify the Archaeologist, the CDSD, and the landowner and shall develop mitigation or treatment measures for consideration and approval by the CDSD. Mitigation shall be developed and implemented in accordance with Public Resources Code Section 21083.2 and Section 15126.4 of the CEQA Guidelines, with a preference for preservation in place. Consistent with Section 15126.4(b)(3), preservation in place may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If approved by the CDSD, such measures shall be implemented and completed prior to commencing further work for which grading or building permits were issued, unless otherwise directed by the CDSD.

(e) Avoidance or preservation of TCRs, unique archaeological resources, or historical resources of an archaeological nature shall not be required where such avoidance or preservation in place would preclude the construction of important structures or infrastructure or require exorbitant expenditures, as determined by the CDSD. Where avoidance or preservation are not appropriate for these reasons, the Archaeologist, in consultation with the CDSD (and, for TCRs, any Native American representative who has timely responded after notification) shall prepare a detailed recommended treatment plan as outlined in MM CUL-4 for consideration and approval by the CDSD, which may include data recovery (unless the Native American representative objects with respect to TCRs). If employed, data recovery strategies for unique archaeological resources that do not also qualify as historical resources of an archaeological

nature shall follow the applicable requirements and limitations set forth in Public Resources Code Section 21083.2. Data recovery will normally consist of (but would not be limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim of recovering important scientific data contained within the unique archaeological resource or historical resource of an archaeological nature. The data recovery plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and State repositories, libraries, and interested professionals. If data recovery is determined by the CDSD to not be appropriate, then an equally effective treatment shall be proposed and implemented. Any previously undiscovered resources found during construction within the project site shall be recorded on appropriate California Department of Parks and Recreation (DPR) 523 forms and shall be submitted to the City of Suisun City, the Northwest Information Center (NWIC), and the California Office of Historic Preservation (OHP), as required.

(f) Work may not resume within the no-work radius until the CDSD, in consultation with the Archaeologist and Native American representative, determines that either: (1) the site does not contain unique archaeological resources or historical resources of an archaeological nature; or (2) the preservation and/or treatment measures have been completed to the satisfaction of the CDSD.

Level of Significance After Mitigation

Less than significant impact.

Human Remains

Impact CUL-3:	**The proposed project may disturb human remains, including those interred outside of formal cemeteries.**

Impact Analysis

While no formal cemeteries or areas containing human remains are known to be in the project vicinity, the possibility always exists that construction-related ground disturbance may uncover previously undiscovered human remains. In the unlikely event such a discovery is made, CEQA Guidelines Section 15064.5, Health and Safety Code Section 7050.5, and Public Resources Code Sections 5097.94 and Section 5097.98 must be followed. Implementation of MM CUL-3, which details inadvertent discovery procedures, would reduce potential impacts to previously undiscovered human remains to a less than significant level.

The potential for the proposed project to disturb human remains, including those interred outside of formal cemeteries, would be limited to the construction phase of the proposed project during ground-disturbing activities. Therefore, operational impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM CUL-3 In the event of the accidental discovery or recognition of any human remains, CEQA Guidelines Section 15064.5, Health and Safety Code Section 7050.5, and Public Resources Code Sections 5097.94 and Section 5097.98 shall be followed. If, during the course of project construction, there is accidental discovery or recognition of any human remains, the following steps shall be taken:

1. There shall be no further excavation or disturbance within 100 feet of the remains until the County Coroner is contacted to determine whether the remains are Native American and if an investigation of the cause of death is required. If the Coroner determines the remains to be Native American, the Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours, and the NAHC shall identify the person or persons it believes to be the Most Likely Descendant (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work within 48 hours, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resource Code Section 5097.98.
2. Where the following conditions occur, the landowner or his or her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the MLD or on the project site in a location not subject to further subsurface disturbance:
   - The NAHC is unable to identify an MLD or the MLD failed to make a recommendation within 48 hours after being notified by the commission.
   - The descendant identified fails to make a recommendation.
   - The landowner or his authorized representative rejects the recommendation of the descendant, and mediation by the NAHC fails to provide measures acceptable to the landowner.

Additionally, California Public Resources Code Section 15064.5 requires the following relative to Native American remains:

- When an initial study identifies the existence of, or the probable likelihood of, Native American remains within a project, a lead agency shall work with the appropriate Native Americans as identified by the NAHC as provided in Public Resources Code Section 5097.98. The applicant may develop a plan for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American Burials with the appropriate Native Americans as identified by the NAHC.

Level of Significance After Mitigation

Less than significant impact.

Listed or Eligible Tribal Cultural Resources

Impact CUL-4: **The proposed project would not cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).**

Impact Analysis

No listed or potentially eligible TCRs have been identified within the project site. Specifically, a review of the CRHR, the NAHC Sacred Lands File, records searches conducted at the NWIC, and a pedestrian survey of the project site failed to identify any listed TCRs that could be adversely affected by construction of the proposed project. As such, there are no known eligible or potentially eligible TCRs that could be adversely affected by the proposed project. Therefore, no construction impacts related to previously listed or eligible TCRs would occur. Additionally, as addressed in Impacts CUL-2 and CUL-5, Mitigation Measure CUL-2 will ensure the proper protection or mitigation for any unlisted subsurface TCRs that could unexpectedly be encountered during construction. Mitigation Measure CUL-3 and CUL-4 will ensure the proper disposition of any Native American remains found during construction.

Impacts related to a proposed project's potential to cause a substantial adverse change in the significance of a listed or eligible TCR are limited to construction impacts. No respective operational impacts would occur.

Level of Significance Before Mitigation

No impact.

Mitigation Measures

None required.

Level of Significance After Mitigation

No impact.

Lead Agency Determined Tribal Cultural Resources

Impact CUL-5: **The proposed project could 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 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.**

Impact Analysis

Pursuant to SB 18 and the proposed General Plan Amendment, the City of Suisun City sent certified letters to both Tribes identified by the NACH on July 26, 2016. On August 17, 2016, a letter was received from the Yocha Dehe Wintun Nation expressing concerns for cultural resources in the area. The City responded on August 28, 2016, and arranged a site visit with representatives from the Dehe Wintun Nation at the project site on January 6, 2017. No TCRs were identified during the site visit.

On January 23, 2017, the City received a letter from the Yocha Dehe stating that the Tribe had completed a records search and had identified a resource near the project area. The Yocha Dehe requested a monitoring agreement be established which included Native American monitoring during construction. Given that the majority of the area the Tribe felt is sensitive is located in the southern portion of the project area where the project proposes open space and no impacts, the question of Native American monitoring was readdressed with Mr. James Sarmento at Yoche Dehe on February 14, 2017. Mr. Sarmento requested updated information which was provided same day. Mr. Sarmento said he would review and respond with whether the Yocha Dehe would still request monitoring.

On January 22, 2021, FCS sent an updated request letter to the NAHC. A response was received on February 1, 2021, indicating that the Sacred Lands File again failed to indicate the presence of recorded TCRs within the project area. FCS sent updated letters to all seven Tribal representatives identified by the NAHC on February 4, 2021. The City of Suisun City received a response from the Yocha Dehe Wintun Nation on October 21, 2021 reiterating its previous comments regarding monitoring. The Yocha Dehe Wintun Nation expressed their concerns about the proposed project and the potential impacts to known TCRs. The Tribe outlined Treatment Protocol to be incorporated into the mitigation measures for the proposed project. The Yocha Dehe Wintun Nation's Treatment Protocol is provided in MM CUL-4.

The City of Suisun City, in its capacity as lead agency, has also not identified or determined any TCRs within the project site that are significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. However, the possibility remains that TCRs, in the form of subsurface archaeological resources or human remains, may be encountered during project construction. Implementation of MM CUL-2, MM CUL-3, and MM CUL-4 would require that construction be stopped upon encountering archaeological resources, human remains, or TCRs and that appropriate steps be taken to protect those resources. Therefore, construction impacts related to lead agency determined TCRs would be less than significant with mitigation.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implementation of MM CUL-2 and MM CUL-3

MM CUL-4 Treatment Protocol for Handling Human Remains and Cultural Items Affiliated with the Yocha Dehe Wintun Nation

The purpose of this Protocol is to formalize procedures for the treatment of Native American human remains, grave goods, ceremonial items, and items of cultural patrimony in the event that any are found in conjunction with development, including archaeological studies, excavation, geotechnical investigations, grading, and any ground-disturbing activity. This Protocol also formalizes procedures for Tribal monitoring during archaeological studies, grading, and ground-disturbing activities.

I. Cultural Affiliation

The Yocha Dehe Wintun Nation traditionally occupied lands in Yolo, Solano, Lake, Colusa, and Napa Counties. The Tribe has designated its Cultural Resources Committee (Committee) to act on the Tribe's behalf with respect to the provisions of this Protocol. Any human remains which are found in conjunction with projects on lands culturally-affiliated with the Tribe shall be treated in accordance with Section III of this Protocol. Any other cultural resources shall be treated in accordance with Section IV of this Protocol.

II. Inadvertent Discovery of Native American Human Remains

Whenever Native American human remains are found during the course of a project, the determination of Most Likely Descendant (MLD) under California Public Resources Code Section 5097.98 will be made by the Native American Heritage Commission (NAHC) upon notification to the NAHC of the discovery of said remains at a project site. If the location of the site and the history and prehistory of the area is culturally-affiliated with the Tribe, the NAHC contacts the Tribe; a Tribal member shall be designated by the Tribe to consult with the landowner and/or project applicant.

Should the NAHC determine that a member of an Indian Tribe other than Yocha Dehe Wintun Nation is the MLD, and the Tribe is in agreement with this determination, the terms of this Protocol relating to the treatment of such Native American human remains shall not be applicable; however, that situation is very unlikely.

III. Treatment of Native American Remains

In the event that Native American human remains are found during development of a project and the Tribe or a member of the Tribe is determined to be MLD pursuant to Section II of this Protocol, the following provisions shall apply. The Medical Examiner shall immediately be notified, ground-disturbing activities in that location shall cease, and the Tribe shall be allowed, pursuant to California Public Resources Code Section 5097.98(a), to (1) inspect the site of the discovery and (2) make determinations as to how the human remains and grave goods should be treated and disposed of with appropriate dignity.

The Tribe shall complete its inspection and make its MLD recommendation within forty-eight (48) hours of getting access to the site. The Tribe shall have the final determination as to the disposition and treatment of human remains and grave goods. Said determination may include avoidance of the human remains, reburial on-site, or reburial on Tribal or other lands that will not be disturbed in the future.

The Tribe may wish to rebury said human remains and grave goods or ceremonial and cultural items on or near the site of their discovery, in an area which will not be subject to future disturbances over a prolonged period of time. Reburial of human remains shall be accomplished in compliance with the California Public Resources Code Sections 5097.98(a) and (b).

The term "human remains" encompasses more than human bones because the Tribe's traditions call for the burial of associated cultural items with the deceased (funerary objects) and/or the ceremonial burning of Native American human remains, funerary objects, grave goods, and animals. Ashes, soils, and other remnants of these burning ceremonies, as well as associated funerary objects and unassociated funerary objects buried with or found near the Native American remains, are to be treated in the same manner as bones or bone fragments that remain intact.

IV. Non-disclosure of Location of Reburials

Unless otherwise required by law, the site of any reburial of Native American human remains shall not be disclosed and will not be governed by public disclosure requirements of the California Public Records Act, California Government Code Section 6250, *et seq.* The Medical Examiner shall withhold public disclosure of information related to such reburial pursuant to the specific exemption set forth in California Government Code Section 6254(r). The Tribe will require that the location for reburial is recorded with the California Historic Resources Inventory System (CHRIS) on a form that is acceptable to the CHRIS center. The Tribe may also suggest that the landowner enter into an agreement regarding the confidentiality of site information that will run with title on the property.

V. Treatment of Cultural Resources

Treatment of all cultural items, including ceremonial items and archaeological items, will reflect the religious beliefs, customs, and practices of the Tribe. All cultural items, including ceremonial items and archaeological items, which may be found at a project site should be turned over to the Tribe for appropriate treatment unless otherwise ordered by a court or agency of competent jurisdiction. The project applicant should waive any and all claims to ownership of Tribal ceremonial and cultural items, including archaeological items, which may be found on a project site in favor of the Tribe. If any intermediary, (for example, an Archaeologist retained by the project applicant) is necessary, said

entity or individual shall not possess those items for longer than is reasonably necessary, as determined solely by the Tribe.

VI. Inadvertent Discoveries

If additional significant sites or sites not identified as significant in a project environmental review process, but later determined to be significant, are located within a project impact area, such sites will be subjected to further archaeological and cultural significance evaluation by the project applicant, the lead agency, and the Tribe to determine whether additional mitigation measures are necessary to treat sites in a culturally appropriate manner consistent with CEQA requirements for mitigation of impacts to cultural resources. If there are human remains present that have been identified as Native American, all work shall cease for a period of up to 30 days in accordance with federal law.

VII. Work Statement for Tribal Monitors

The description of work for Tribal Monitors of the grading and ground-disturbing operations at the development site is attached hereto as Addendum I and incorporated herein by reference.

Level of Significance After Mitigation

Less than significant impact.

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3.5 - Geology, Soils, and Seismicity

3.5.1 - Introduction

This section describes the existing geology, soils, and seismicity setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on the Preliminary Soil Investigation prepared by Raney Geotechnical and included in this Draft Environmental Impact Report (Draft EIR) as Appendix E.

3.5.2 - Environmental Setting

Regional Geology

Solano County is situated in the Great Valley Geomorphic Province of California. This province is characterized as a relatively undeformed sedimentary basin bounded by highly deformed rock units of the Coastal Ranges to the west and by the gently sloping western foothills of the Sierra Nevada Mountain Range to the east. The Sacramento Valley, which forms the northern portion of the Great Valley Province, is composed of unconsolidated and recent-age alluvial sediments. The underlying bedrock is thought to be composed of early tertiary marine deposits.

Seismicity

The term seismicity describes the effects of seismic waves that are radiated from an earthquake as it ruptures. While most of the energy released during an earthquake results in the permanent displacement of the ground, as much as 10 percent of the energy may dissipate immediately in the form of seismic waves. The probability of one or more earthquakes of magnitude 6.7 (Richter scale) or higher occurring in the project area has been evaluated by the United States Geological Survey (USGS). Based on the results of the USGS evaluation, there is a 63 percent likelihood that such an earthquake event will occur in the Bay Area between 2007 and 2036. The faults with the greater probability of movement with a magnitude of 6.7 or higher earthquake are the Hayward Fault at 27 percent, the San Andreas Fault at 21 percent, and the Calaveras Fault at 11 percent. To understand the implications of seismic events, a discussion of faulting and seismic hazards follows.

Faulting

Faults form in rocks when stresses overcome the internal strength of the rock, resulting in a fracture. Large faults develop in response to large, regional stresses operating over a long time, such as those stresses caused by the relative displacement between tectonic plates. According to the elastic rebound theory, these stresses cause strain to build up in the Earth's crust until enough strain has built-up to exceed the strength along a fault and cause a brittle failure. The slip between the two stuck plates or coherent blocks generates an earthquake. Following an earthquake, strain will build once again until the occurrence of another earthquake. The magnitude of slip is related to the maximum allowable strain that can be built-up along a particular fault segment. The greatest buildup in strain that is due to the largest relative motion between tectonic plates or fault blocks over the longest period of time will generally produce the largest earthquakes. The distribution of these earthquakes is a study of much interest for both hazard prediction and the study of active deformation of the earth's crust. Deformation is a complex process, and strain caused by tectonic

forces is not only accommodated through faulting but also by folding, uplift, and subsidence, which can be gradual or in direct response to earthquakes.

Faults are mapped to determine earthquake hazards, since they occur where earthquakes tend to recur. A historic plane of weakness is more likely to fail under stress and strain than a previously unbroken block of crust. Faults are, therefore, a prime indicator of past seismic activity, and faults with recent activity are presumed to be the best candidates for future earthquakes. However, since slip is not always accommodated by faults that intersect the surface along traces, and since the orientation of stresses and strain in the crust can shift, predicting the location of future earthquakes is complicated. Earthquakes sometimes occur in areas with previously undetected faults or along faults previously thought inactive.

The Kirby Hills, Cordelia, and Concord-Green Valley Fault Zones are the closest faults to Suisun City. These faults and their characteristics are summarized in Table 3.5-1. The Kirby Hills Fault is located in the Potrero Hills south of the project site, while the Cordelia Fault and Concord-Green Valley Fault are located within the Cordelia area of Fairfield.

Table 3.5-1: Fault Summary

Fault Name	Type	Status	Relationship to Project Site		Maximum Credible Earthquake (Magnitude)	Alquist-Priolo Zoned?
			Direction	Distance (Miles)		
Kirby Hills	N/A	Inactive	South	< 1	6.75	No
Cordelia	Strike-Slip	Active	West	10	6.50	Yes
Concord-Green Valley	Right-Lateral Strike-Slip	Active	West	11	6.75	Yes

Notes:
The Kirby Hills Fault is also referred to as the "Vaca-Kirby Hills Fault." There is disagreement among geologists whether the Kirby Hills Fault has connectivity to the Vaca Fault.
Source: FCS, 2021.

Seismic Hazards

Seismicity describes the effects of seismic waves that are radiated from an earthquake as it ruptures. While most of the energy released during an earthquake results in the permanent displacement of the ground, as much as 10 percent of the energy may dissipate immediately in the form of seismic waves. To understand the implications of seismic events, a discussion of faulting and seismic hazards is provided below.

Seismic hazards pose a substantial danger to property and human safety and are present because of the risk of naturally occurring geologic events and processes impacting human development. Therefore, the hazard is influenced as much by the conditions of human development as by the frequency and distribution of major geologic events. Seismic hazards present in California include ground rupture along faults, strong seismic shaking, liquefaction, ground failure, landsliding, and slope failure.

Fault Rupture

Fault rupture is a seismic hazard that affects structures sited above an active fault. The hazard from fault rupture is the movement of the ground surface along a fault during an earthquake. Typically, this movement takes place during the short time of an earthquake, but it also can occur slowly over many years in a process known as creep. Most structures and underground utilities cannot accommodate the surface displacements of several inches to several feet commonly associated with fault rupture or creep.

Ground Shaking

The severity of ground shaking depends on several variables such as earthquake magnitude, epicenter distance, local geology, thickness, seismic wave-propagation properties of unconsolidated materials, groundwater conditions, and topographic setting. Ground shaking hazards are most pronounced in areas near faults or with unconsolidated alluvium.

Based on observations of damage from recent earthquakes in California (e.g., San Fernando 1971, Whittier-Narrows 1987, Landers 1992, Northridge 1994), ground shaking is responsible for 70 to 100 percent of all earthquake damage. The most common type of damage from ground shaking is structural damage to buildings, which can range from cosmetic stucco cracks to total collapse. The overall level of structural damage from a nearby large earthquake would likely be moderate to heavy, depending on the characteristics of the earthquake, the type of ground, and the condition of the building. Besides damage to buildings, strong ground shaking can cause severe damage from falling objects or broken utility lines. Fire and explosions are also hazards associated with strong ground shaking.

During the 2014 South Napa Earthquake, USGS instrument readings at monitoring sites in Napa and Vallejo reported peak ground acceleration values ranging from 19.8 to 40.7 percent of gravity, which corresponds to “strong” and “very strong” ground shaking. Following the earthquake, more than 200 persons sought treatment at local hospitals, more than 150 buildings were “red tagged,”[1] and numerous utility lines experienced ruptures or leaks that disrupted service.

Ground Failure

Ground failure includes liquefaction and the liquefaction-induced phenomena of lateral spreading, and lurching.

Liquefaction is a process by which sediments below the water table temporarily lose strength during an earthquake and behave as a viscous liquid rather than a solid. Liquefaction is restricted to certain geologic and hydrologic environments, primarily recently deposited sand and silt in areas with high groundwater levels. The process of liquefaction involves seismic waves passing through saturated granular layers, distorting the granular structure, and causing the particles to collapse. This causes the granular layer to behave temporarily as a viscous liquid, resulting in liquefaction.

Liquefaction can cause the soil beneath a structure to lose strength, which may result in the loss of foundation-bearing capacity. This loss of strength commonly causes the structure to settle or tip.

[1] A red-tagged building is considered uninhabitable without further assessment or repair under the California Building Standards Code.

Loss of bearing strength can also cause light buildings with basements, buried tanks, and foundation piles to rise buoyantly through the liquefied soil.

Lateral spreading is lateral ground movement, with some vertical component, caused by liquefaction. In effect, the soil rides on top of the liquefied layer. Lateral spreading can occur on relatively flat sites with slopes less than 2 percent, under certain circumstances, and can cause ground cracking and settlement.

Lurching is the movement of the ground surface toward an open face when the soil liquefies. An open face could be a graded slope, stream bank, canal face, gully, or other similar feature.

Landslides and Slope Failure

Landslides and other forms of slope failure form in response to the long-term geologic cycle of uplift, mass wasting, and disturbance of slopes. Mass wasting refers to a variety of erosional processes from gradual downhill soil creep to mudslides, debris flows, landslides, and rock fall—processes that are commonly triggered by intense precipitation, which varies according to climactic shifts.

Often, various forms of mass wasting are grouped together as landslides, which are generally used to describe the downhill movement of rock and soil.

Geologists classify landslides into several different types that reflect differences in the type of material and type of movement. The four most common types of landslides are translational, rotational, earth flow, and rock fall. Debris flows are another common type of landslide similar to earth flows, except that the soil and rock particles are coarser. Mudslide is a term that appears in non-technical literature to describe a variety of shallow, rapidly moving earth flows.

Subsurface Exploration

Raney Geotechnical conducted a subsurface investigation of the project site in November 2015. Test borings revealed soils that are derived from the Tehama Formation. The Tehama Formation includes partially cemented clays, silts, and sands that are characterized by light orange, yellow, tan, and white colors and are derived from volcanic sources. The upper 8 to 10 inches of the borings were observed to consist of light brown clayey, fine, sandy, silts. Patches of dark gray and gray-brown silty clays were noted elsewhere on the site surface. These surface materials appear to have been amended for agricultural purposes.

Underlying the immediate surface and extending to the 15-foot-depth drilled in most borings, interlayered, stiff to very stiff, mottled light yellow-brown, orange-brown, and tan silty to very silty clays and clayey silts were observed. A few isolated lenses of medium dense, yellow-to-range brown silty to clayey fine to coarse sands were also observed. Clays dominated the upper 3 to 7 feet of the soil profile. Most clays appear to be of low plasticity. However, the clays within about the upper 2 feet often appear darker and of moderate plasticity.

Below a depth of 15 feet and extending to the 50-foot depth drilled in the deepest boring, interlayered, very stiff to hard yellow, orange, and tan clays and silts similar to those observed in the upper 15 feet were noted.

Groundwater was measured at depths ranging from 6 to 9 feet below ground surface.

Soils

The United States Department of Agriculture, Natural Resources Conservation Service indicates that the project site contains mostly Antioch-San Ysidro complex, 0 to 2 percent soils, with small areas of Solano loam and Pescadero clay loam soils. Table 3.5-2 summarizes the properties of the soils that underlie the project site.

Table 3.5-2: Soil Properties Summary

Soil Type	Drainage Class	Landform	Parent Material	Prime Agricultural Soil?
Antioch-San Ysidro complex, 0 to 2 percent	Moderately well drained	Terraces	Alluvium derived from sedimentary rock	No
Solano loam	Moderately well drained	Terraces	Alluvium derived from sedimentary rock	No
Pescadero clay loam	Somewhat poorly drained	Basin floors	Alluvium derived from sedimentary rock	No
Source: Natural Resources Conservation Service. 2021.				

Groundwater

As previously mentioned, Raney Geotechnical found that groundwater levels within the project site range from 6 to 9 feet below the ground surface. Groundwater flow is expected to follow the prevailing grade, which is generally southerly toward Hill Slough. In addition, the groundwater in the project vicinity is tidally influenced.

Paleontological Resources

The often-unseen records of past life buried in the sediments and rocks below the ground surface are among natural resources deserving conservation and preservation. These records are often under the pavement, buildings, soils, and vegetation that are covered by developed areas, but are also found in undeveloped areas that are either in their natural condition or under agricultural use. These records–fossils and their geologic context–can exist in large quantities below the surface in many areas in Solano County, and span millions of years in age of origin. Fossils constitute a nonrenewable resource, meaning once they are lost or destroyed, the exact information they contained can never be reproduced.

Paleontology is the science that attempts to unravel the meaning of these fossils in terms of the organisms they represent, the ages and geographic distribution of those organisms, how they interacted in ancient ecosystems and responded to past climatic changes, and the changes through time of all of these aspects.

The sensitivity of a given area or body of sediment with respect to paleontological resources is a function of both the potential for the existence of fossils and the predicted significance of any fossils

which may be found there. The primary consideration in the determination of paleontological sensitivity of a given area, body of sediment, or rock formation is its potential to include fossils. Information that can contribute to assessment of this potential includes: (1) direct observation of fossils within the project area; (2) the existence of known fossil localities or documented absence of fossils in the same geologic unit (e.g., "Formation" or one of its subunits); (3) descriptive nature of sedimentary deposits (such as size of included particles or clasts, color, and bedding type) in the area of interest compared with those of similar deposits known elsewhere to favor or disfavor inclusion of fossils; and (4) interpretation of sediment details and known geologic history of the sedimentary body of interest in terms of the ancient environments in which they were deposited, followed by assessment of the favorability of those environments for the preservation of fossils.

The most general paleontological information can be obtained from geologic maps, but geologic cross-sections (slices of geologic layers to view the third dimension) must be reviewed for an area in question (i.e., if such resources are discovered). These usually accompany geologic maps or technical reports. Once it can be determined which formations may be present in the subsurface, the question of paleontological resources must be addressed. Even though a formation is known to contain fossils, they are not usually distributed uniformly throughout the many square miles the formation may cover. If the fossils were part of a marine environment when they died, perhaps a scattered layer of shells will be preserved over large areas, or possibly a fossil bone only in one small area of less than a few hundred square feet. Other resources to be considered in the determination of paleontological potential are regional geologic reports, site records on file with paleontological repositories and site-specific field surveys.

Paleontologists consider all vertebrate fossils to be of significance. Fossils of other types are considered significant if they represent a new record, a new species, an oldest occurring species, the most complete specimen of its kind, a rare species worldwide, or a species helpful in the dating of formations. However, even a previously designated low potential site may yield significant fossils.

Geologic mapping indicated that the project site is entirely underlain by Pleistocene-age alluvial deposits. While not mapped at the surface at the project site, the Pleistocene-age Montezuma Formation and the Pliocene-age Tehama Formation are mapped in the project vicinity (approximately 5.8 miles southeast and approximately 3.3 miles northwest, respectively) and both could occur in the subsurface.[2]

A review of the University of California Museum of Paleontology (UCMP) online fossil locality database indicates that there are nine fossil localities (two invertebrate and seven vertebrate) recorded in unnamed Pleistocene-age deposits within Solano County. The exact localities are not provided through the online database; however, the locations can be inferred by the locality name (i.e., Suisun Slough (V2703) and Suisun Creek (V65183).[3] Suisun Slough and Suisun Creek are approximately 2.2 miles southwest and 6.7 miles west of project site, respectively.

[2] Graymer, R.W., D.L. Jones, and E.E. Brabb. 2002. Geologic map and map database of northeastern San Francisco Bay region, California – most of Solano County and parts of Napa, Marin, Contra Costa, San Joaquin, Sacramento, Yolo, and Sonoma counties. Miscellaneous Filed Studies Map MF-2403. United states Geological Survey. Map. Scale 1:100,000.

[3] University of California Museum of Paleontology (UCMP). 2024. UC Museum of Paleontology Localities – results for Pleistocene-age localities within Solano County.

The UCMP fossil locality database was also searched for fossil localities from the Montezuma and Tehama formations. The results revealed three vertebrate localities within Solano County from the Montezuma Formation, near Montezuma Hills (V5510) and Putah Creek (V69182 and V69184).[4] There is one Tehama Formation locality from Solano County, in Vacaville (V4546); however, there are 42 vertebrate fossil localities from Colusa, Glenn, Tehama, and Yolo counties from the Tehama Formation.[5]

The localities at Putah Creek represent ground sloth (*Glossotherium harlani*) and mammoth (*Mammuthus columbi*) specimens recovered from localities along Putah Creek, near Stevenson Bridge (approximately 21 miles northeast of the project site).[6]

Another locality approximately 12 miles southeast of the project site (near Stratton Lane in Collinsville) produced a cotton rat (*Sigmodon lindsayi*) fossil, which provided a unique record of the genus (*Sigmodon*). This specimen was recovered from Pleistocene-age deposits along the southern flank of the Montezuma Hills but is not attributed to the Montezuma Formation.[7]

In general, Pleistocene-age alluvial deposits have a moderate to high potential to contain significant paleontological resources, given the extensive vertebrate fossils that have been recovered from such deposits throughout California. Based on the Pleistocene-age fossil localities within Solano County, and throughout California, the Pleistocene-age alluvial deposits underlying the project site are considered to have a moderate to high potential to contain significant paleontological resources.

Based on the various fossil discoveries from the Montezuma and Tehama formations, these formations are considered to have a high potential to contain significant paleontological resources.

3.5.3 - Regulatory Framework

Federal

National Earthquake Hazards Reduction Program

The National Earthquake Hazards Reduction Program (NEHRP) was established by the United States Congress when it passed the Earthquake Hazards Reduction Act of 1977, Public Law 95–124. In establishing the NEHRP, Congress recognized that earthquake-related losses could be reduced through improved design and construction methods and practices, land use controls and redevelopment, prediction techniques and early warning systems, coordinated emergency preparedness plans, and public education and involvement programs. The four basic goals remain unchanged:

[4] University of California Museum of Paleontology (UCMP). 2024. UC Museum of Paleontology Localities – results for Pleistocene-age localities within Solano County.

[5] University of California Museum of Paleontology (UCMP). 2024. UC Museum of Paleontology Localities – results for localities associated with the Tehama Formation throughout California.

[6] Dundas, Robert G., and Laura M. Cunningham. 1993. Harlan's Ground Sloth (*Glossotherium harlani*) and a Columbian Mammoth (*Mammuthus columbi*) from Stevenson Bridge, Yolo County, California. *PaleoBios* 15(3). May 24, 1993.

[7] Bell, Christopher J., and C. Bruce Hanson. 1995. A Fossil *Sigmodon* (Mammalia: Rodentia) from the San Francisco Bay Area, Solano Co., California, with Comments on Additional Fossil Material from Kern Co., California. *PaleoBios* 16(4), pp. 9-12. December 8, 1995.

- Develop effective practices and policies for earthquake loss reduction and accelerate their implementation.
- Improve techniques for reducing earthquake vulnerabilities of facilities and systems.
- Improve earthquake hazards identification and risk assessment methods, and their use.
- Improve the understanding of earthquakes and their effects.

Several key federal agencies contribute to earthquake mitigation efforts. There are four primary NEHRP agencies:

- National Institute of Standards and Technology of the Department of Commerce
- National Science Foundation
- United States Geological Survey (USGS) of the Department of the Interior
- Federal Emergency Management Agency (FEMA) of the Department of Homeland Security

Implementation of NEHRP priorities is accomplished primarily through original research, publications, and recommendations to assist and guide state, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program, authorized by Section 402(p) of the federal Clean Water Act, controls water pollution by regulating point sources, such as construction sites and industrial operations that discharge pollutants into waters of the United States. A Storm Water Pollution Prevention Plan (SWPPP) is required to control discharges from a project site, including soil erosion, to protect waterways. A SWPPP describes the measures or practices to control discharges during both the construction and operational phases of the project. A SWPPP identifies project design features and structural and nonstructural Best Management Practices (BMPs) that will be used to control, prevent, remove, or reduce stormwater pollution from the site, including sediment from erosion.

State Regulations

California Building Standards Code

The 2019 California Building Code is another name for the body of regulations known as the California Code of Regulations, Title 24, Part 2, which is a portion of the California Building Standards Code (CBC). The CBC incorporates by reference the International Building Code requirements with necessary California amendments. Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards.

Compliance with the CBC requires that (with very limited exceptions) structures for human occupancy be designed and constructed to resist the effects of earthquake motions. The Seismic Design Category for a structure is determined in accordance with either CBC Section 1613–Earthquake Loads or the American Society of Civil Engineers Standard No. 7-05, Minimum Design Loads for Buildings and Other Structures. In brief, based on the engineering properties and type of soils at a project site, the site is assigned a Site Class ranging from A to F. The Site Class is then combined with Spectral Response

(ground acceleration induced by earthquake) information for the location to arrive at a Seismic Design Category ranging from A to D, of which D represents the most severe conditions. The classification of a specific site and related calculations must be determined by a qualified Geotechnical Engineer and are site-specific.

Finally, the CBC requires that a geotechnical investigation be prepared for all new buildings that are 4,000 square feet or larger, as well as for smaller buildings if they meet certain criteria. The geotechnical investigation must be prepared by a California Registered Geotechnical Engineer and address the classification and investigation of the soil, including requirements for geotechnical designs necessary to meet standards for reducing exposure to geological hazards.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code [PRC] Sections 2621 to 2630) was passed in 1972 to provide a statewide mechanism for reducing the hazard of surface fault rupture to structures used for human occupancy. The main purpose of the Act is to prevent the siting of buildings used for human occupancy across the traces of active faults. It should be noted that the Act addresses the potential hazard of surface fault rupture and is not directed toward other earthquake hazards, such as seismically-induced ground shaking or landslides.

The law requires the State Geologist to identify regulatory zones (known as Earthquake Fault Zones or Alquist-Priolo Zones) around the surface traces of active faults, and to depict these zones on topographic base maps, typically at a scale of 1 inch to 2,000 feet. Earthquake Fault Zones vary in width, although they are often 0.75-mile wide. Once published, the maps are distributed to the affected cities, counties, and State agencies for their use in planning and controlling new or renewed construction. With the exception of single-family wood frame and steel-frame dwellings that are not part of a larger development (i.e., four units or more), local agencies are required to regulate development within the mapped zones. In general, construction within 50 feet of an active fault zone is prohibited.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (PRC §§ 2690–2699.6), which was passed in 1990, addresses earthquake hazards other than surface fault rupture. These hazards include strong ground shaking, earthquake-induced landslides, liquefaction, or other ground failures. Much like the Alquist-Priolo Earthquake Fault Zoning Act discussed above, these seismic hazard zones are mapped by the State Geologist to assist local government in the land use planning process. The Act states, “it is necessary to identify and map seismic hazard zones in order for cities and counties to adequately prepare the safety element of their general plans and to encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety.” The Act also states, “cities and counties shall require, prior to the approval of a project located in a seismic hazard zone, a geotechnical report defining and delineating any seismic hazard.”

State Laws Pertaining to Paleontological Resources

Section 5097.5 of the California Public Resources Code prohibits “knowing and willful” excavation, removal, destruction, injury, and defacement of any “vertebrate paleontological site, including

fossilized footprints," on public lands, except where the agency with jurisdiction has granted express permission. "As used in this section, 'public lands' means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof." Section 30244 of the California Public Resources Code requires reasonable mitigation for impacts on paleontological resources that occur as a result of development on public lands.

Section 4307–4309 of the California Code of Regulations relating to the California Department of Parks and Recreation (DPR) affords protection to geologic features, "paleontological features" and objects of archaeological, or historical interest or value, and grants the DPR the power to grant a permit to "remove, treat, disturb, or destroy plants or animals or geological, historical, archaeological or paleontological materials." (California Code of Regulations, Title 14, Section 4307–4309).

Local

City of Suisun City

General Plan

The Suisun City General Plan sets forth the following goal, objective, and policies relevant to geology, soils, and seismicity:

Goal PHS-14 Reduce risks to people and property from geologic hazards and soils conditions.

Objective PHS-14 Avoid risks to property and life through the implementation of City policies, programs, and standards related to geologic and soils hazards.

Policy PHS-14.1 The City will implement State and local building code requirements, including those related to structural requirements and seismic safety criteria, in order to reduce risks associated with seismic events and unstable and expansive soils.

Policy PHS-14.2 The City will require the preparation of a geotechnical site investigation for new development projects, which will be required to implement recommendations to reduce the potential for ground failure due to geologic or soil conditions.

Policy PHS-14.3 The City will require new developments that could be adversely affected by geological and/or soil conditions to include project features that minimize these risks.

City Code

Suisun City has adopted the 2019 California Building Code pursuant to Chapter 15.04 of the City Code; as such, all new construction within the city limits is required to adhere to its seismic safety standards. The Suisun City Development Services Department is responsible for the administration and enforcement of the Building Code.

3.5.4 - Methodology

This analysis in this section is based on the Preliminary Soil Investigation prepared by Raney Geotechnical. The complete report is provided in Appendix E.

Raney Geotechnical drilled borings on the project site in November 2015. Seven borings were drilled, with the deepest to 50 feet below ground surface. The soil attributes of the borings were recorded, including moisture, density, and unconfined compressive strength. One sample was subjected to sieve analyses. Raney subsequently laboratory tested the samples to determine additional attributes including plasticity index and R-value. Although the Preliminary Soil Investigation was more than 5 years old at the date of Notice of Preparation issuance, its conclusions are still considered valid because no substantial changes have occurred to the project site's surface or subsurface conditions since the report was prepared.

FCS also obtained information about faults and seismic hazards from sources including the USGS, the United States Department of Agriculture, and Suisun City General Plan.

3.5.5 - Thresholds of Significance

CEQA Guidelines Appendix G is a sample Initial Study checklist that includes a number of factual inquiries related to the subject of geology and soils, in addition to a series of other environmental topics. Notably, lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance for these subjects, or on any subject addressed in the checklist. (*Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1068). Rather, with few exceptions, "CEQA grants agencies discretion to develop their own thresholds of significance." (*Id*.) Even so, it is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G and to use that language in fashioning thresholds. The City has done so here. Thus, for purposes of this EIR, a significant impact would occur if implementation of the proposed project would:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:
    i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42.
    ii. Strong seismic ground shaking.
    iii. Seismic-related ground failure, including liquefaction.
    iv. Landslides.
b) Result in substantial soil erosion or the loss of topsoil.
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. (Refer to Section 7, Effects Found not to be Significant).
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

It is noteworthy that, in *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, 377 ("CBIA"), the California Supreme Court held that "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents." (Italics added). For this reason, the court found the following language from CEQA Guidelines Section 15126.2, subdivision (a), to be invalid: "[A]n EIR on a subdivision astride an active fault line should identify as a significant effect the seismic hazard to future occupants of the subdivision. The subdivision would have the effect of attracting people to the location and exposing them to the hazards found there." (Id. at p. 390).

The court did not hold that CEQA never requires consideration of the effects of existing environmental conditions on the future occupants or users of a proposed project. But the circumstances in which such conditions may be considered are narrow: "when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. 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." (Id. at pp. 377-378, italics added). Because this exception to the general rule would presumably never apply to existing seismic hazards, the court concluded that this particular topic was outside the ambit of CEQA. (Id. at p. 390). The court also recognized that, within the entirety of CEQA, certain very specific statutes require consideration of existing conditions on project occupants; and the court treated these statutes as exceptions to the general rule it announced. (Id. at pp. 391-392).

In light of the CBIA decision, the City is not required by CEQA to address the extent to which existing seismic hazards–in the form of possible earthquakes, ground shaking, liquefaction, or subsidence–could affect future occupants or users of lands that might be developed in the future. Even so, the City believes that such issues are important from a public policy standpoint, and intends to address them under its police power, as opposed to under CEQA. (See Cal. Const., Art. XI, § 7; *Associated Home Builders, Inc. v. City of Livermore* (1976) 18 Cal.3d 582, 600-601; *Candid Enterprises, Inc. v. Grossmont Union High School District* (1985) 39 Cal.3d 878, 875; *DeVita v. County of Napa* (1995) 9 Cal.4th 763, 782). Thus, readers should treat the discussions below of potential impacts on future project residents and users as being beyond the scope of CEQA and provided to the public on a voluntary basis in the interests of full disclosure.

3.5.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Seismic Hazards

Impact GEO-1:	**The proposed project may expose people or structures to potential substantial adverse effects associated with seismic hazards.**

Impact Analysis

This impact evaluates potential exposure to seismic hazards, including fault rupture, strong ground shaking, ground failure and liquefaction, and landslides. Each issue is discussed separately.

Fault Rupture

The Kirby Hills Fault Zone is located less than 1 mile from the project site, but it does not extend into the site. Moreover, the Kirby Hills Fault is inactive and is not zoned pursuant to the Alquist-Priolo Earthquake Fault Zoning Act. For these reasons, the proposed project would not be subject to fault rupture during a seismic event. Impacts in this regard would be less than significant.

Strong Ground Shaking

The project site is located in a seismically active region of California and is susceptible to strong ground shaking during a seismic event.

A design-level geotechnical report for the proposed project would be prepared by the time building permits are sought. Such a report would provide recommendations on the appropriate level of soil engineering and building design necessary to minimize ground shaking hazards. These design recommendations are not necessary to prevent the proposed project from exacerbating any existing seismic hazards, but rather are only necessary to protect future project occupants and users from existing hazards. Thus, under the approach required under the CBIA decision, the proposed project will not cause, or contribute to the causation of, any direct or indirect substantial adverse effects involving the risk of loss, injury, or death. Even so, Mitigation Measure (MM) GEO-1 is proposed in order to protect those future project occupants and users. In a sense, MM GEO-1 is not a true CEQA mitigation measure, in that it is not necessary to reduce the severity of a potentially significant environmental effect caused by the proposed project. Rather, it is imposed as a matter of good planning and engineering. MM GEO-1 requires the applicant to submit a design-level geotechnical study to Suisun City for review and approval. Standard soil engineering and building design practices would include standards for foundations and structural support of buildings to ensure that they withstand strong ground shaking during a seismic event. The implementation of this mitigation measure would ensure that the proposed project is not exposed to strong ground shaking hazards.

Ground Failure and Liquefaction

The project vicinity is underlain by partially cemented clays, silts, and sands characterized as stiff and very stiff. The Preliminary Soil Investigation determined that these soils are cohesive and not susceptible to liquefaction. Thus, the proposed project would not be susceptible to ground failure, liquefaction, or liquefaction-related phenomena. Impacts would be less than significant.

Landslides

The project site contains flat relief. There are no slopes near the project site that may be susceptible to landsliding during a seismic event. This precludes the possibility of the proposed project being susceptible to landsliding. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

MM GEO-1 Prior to the issuance of a grading permit for each structure, the project applicant shall submit a design-level Geotechnical Investigation to the City of Suisun City for review and approval. The investigation shall be prepared by a qualified engineer and identify grading and building practices necessary to achieve compliance with the latest adopted edition of the California Building Standards Code (CBC) geologic, soils, and seismic requirements, including abatement of expansive soil conditions. The report shall also determine the final design parameters for walls, foundations, foundation slabs, and surrounding related improvements (e.g., utilities roadways, parking lots, and sidewalks). The measures identified in the approved report shall be incorporated into the project plans and all applicable construction-related permits.

Level of Significance After Mitigation

Less than significant impact.

Erosion

Impact GEO-2: The proposed project may result in substantial soil erosion or the loss of topsoil.

Impact Analysis

The proposed project would involve grading, building construction, paving, and utility installation activities that may cause erosion and sedimentation. This includes construction activities associated with the proposed project. Left unabated, the accumulation of sediment in downstream waterways could result in the blockage of flows, potentially causing increased localized ponding or flooding. As such, MM HYD-1a in Section 3.8, Hydrology and Water Quality, would require the implementation of stormwater quality control measures during construction activities to prevent pollutants from entering downstream waterways. Standard stormwater pollution prevention measures would include implementing structural and nonstructural control measures within and around disturbed areas to prevent soil and pollutants from leaving the project site. Impacts would be less than significant after mitigation.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement MM HYD-1a.

Level of Significance After Mitigation

Less than significant impact.

Unstable Geologic Location

Impact GEO-3: The proposed project would not be located on an unstable geologic unit or soil.

Impact Analysis

The stability of the underlying geologic units and soils are functions of their constituents. For example, soils with high organic or fill content would generally be considered unsuitable to support urban development. Likewise, soils that are composed of well-compacted alluvium would generally be considered suitable to support urban development.

The project site is underlain by partially cemented clays, silts, and sands characterized as stiff and very stiff. The Preliminary Soil Investigation determined that these soils are cohesive and not susceptible to liquefaction. As such, the proposed project would not be susceptible to or cause landslides, lateral spreading, collapse, ground failure, liquefaction, or liquefaction-related phenomena. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Expansive Soil

Impact GEO-4:	**The proposed project may create substantial risks to life or property as a result of expansive soil conditions on the project site.**

Impact Analysis

The Preliminary Soil Investigation found that the project site is underlain by soils with high clay content and are therefore capable of being expansive. The design-level Geotechnical Investigation required by MM GEO-1 would outline standard grading and soil engineering practices which would abate these potential hazards. Standard grading and soil engineering practices would include replacing native soils with engineered fill that would not possess expansive characteristics. As with Impact GEO-1, reliance on, and implementation of, standard grading and soil engineering practices are not necessary to prevent the proposed project from exacerbating any existing environmental hazards. Rather, they are only necessary to protect future project occupants and users from existing hazards associated with expansive soil conditions. Thus, under the approach required under the CBIA decision, the proposed project will not cause, or contribute to the causation of, any direct or indirect substantial risks to life and property associated with expansive soil conditions. Even so, MM GEO-1 is proposed in order to protect those future project occupants and users. In a sense, as noted earlier, MM GEO-1 is not a true CEQA mitigation measure, in that it is not necessary to reduce the severity of a potentially significant environmental effect caused by the proposed project. Rather, it is imposed as a matter of good planning and engineering.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

Implement MM GEO-1.

Level of Significance After Mitigation

Less than significant impact.

Paleontological Resources or Unique Geologic Features

Impact GEO-5: The proposed project may directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Impact Analysis

The Suisun City General Plan indicates that Pleistocene alluvium is paleontologically sensitive, and Policy OSC-5.3 indicates that the City shall include training, notification, and recovery procedures for fossils for development sites underlain by this formation.

Accordingly, MM GEO-5 requires that paleontological monitoring be conducted during the initial phase of ground disturbance and inadvertent discovery procedures be implemented if fossils are encountered during ground-disturbing activities. The implementation of these procedures would ensure that significant paleontological resources are treated appropriately and documented for posterity. Impacts would be less than significant after mitigation.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM GEO-5 Prior to the initial ground disturbance phases, a professional Paleontologist acceptable to the City of Suisun City's Development Services Director or the Director's designee shall provide training to construction personnel regarding paleontological resources. During the initial ground disturbance phases, the professional Paleontologist shall be present to spot check excavations for paleontological resources. If fossils with the potential to qualify as unique paleontological resources are discovered during project implementation, all earthwork or other types of ground disturbance within 100 feet of the find shall stop immediately until a qualified professional Paleontologist can assess the nature and importance of the find (i.e., whether the fossils actually do qualify as unique paleontological resources). A unique paleontological resource means a paleontological resource 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 of the two following criteria: (1) contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information; or (2) has a special and particular quality such as being the oldest of its type or the best available example of its type. The Paleontologist shall report his or her findings to the City of Suisun City. If the fossils are determined to be unique paleontological resources, the Paleontologist shall either record the

find and recommend that the City of Suisun City allow work to continue or recommend salvage and recovery of the fossil. The City shall implement the recommended measures if the City determines that they are feasible in light of project design, logistics, and cost considerations. The Paleontologist, if requested by the City, may also propose modifications to the stop-work radius based on the nature of the find, site geology, and the activities occurring on the site. If treatment and salvage are required, recommendations will be consistent with Society of Vertebrate Paleontology guidelines and currently accepted scientific practice. If required, treatment for fossil remains shall include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection, and, if required, shall also include preparation of a report for publication describing the finds.

Level of Significance After Mitigation

Less than significant impact.

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3.6 - Greenhouse Gas Emissions and Energy

3.6.1 - Introduction

This section describes the existing greenhouse gas (GHG) emissions and energy setting and potential effects from project implementation on the project site and its surrounding area. Descriptions and analysis in this section are based on information provided in Section 3.2, Air Quality. The GHG analysis is based, in part, on information, calculations, and modeling results in the Suisun Logistics Center Greenhouse Gas Emissions Technical Report prepared by Ramboll America Engineering Solutions, Inc. (GHG Report), included in this Draft Environmental Impact Report (Draft EIR) as Appendix B2. The energy analysis is based on information, calculations, and modeling results in the Suisun Logistics Center Energy Technical Report prepared by Ramboll America Engineering Solutions, Inc. (Energy Report), included in this Draft EIR as Appendix B3.

3.6.2 - Environmental Setting

Greenhouse Effect, Global Warming, and Climate Change

Most of the energy that affects Earth's climate comes from the sun. Some solar radiation is absorbed by Earth's surface, and a smaller portion of this radiation is reflected by the atmosphere back toward space. As Earth absorbs high-frequency solar radiation, its surface gains heat and then re-radiates lower frequency infrared radiation back into the atmosphere.[1]

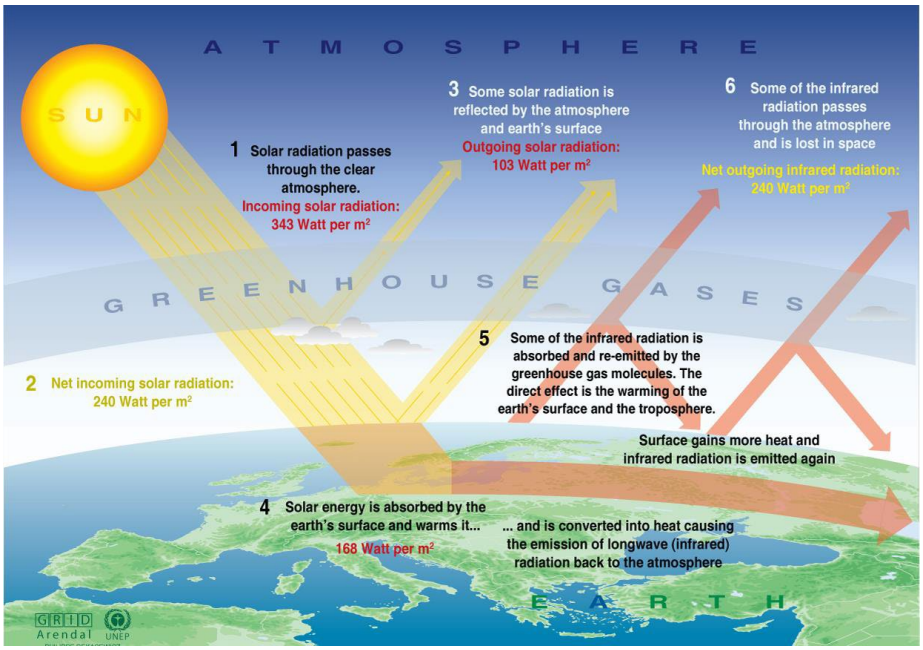
Most solar radiation passes through gases in the atmosphere classified as GHGs; however, infrared radiation is selectively absorbed by GHGs. GHGs in the atmosphere play a critical role in maintaining the balance between Earth's absorbed and radiated energy—Earth's radiation budget[2]—by trapping some of the infrared radiation emitted from Earth's surface that otherwise would have escaped to space (Figure 3.6-1). Radiative forcing is the difference between incoming energy and outgoing energy.[3] Specifically, GHGs affect the radiative forcing of the atmosphere,[4] which in turn affects Earth's average surface temperature. This phenomenon, the *greenhouse effect*, keeps Earth's atmosphere near the surface warmer than it would be otherwise and allows successful habitation by humans and other forms of life.

Combustion of fossil fuels and deforestation release carbon into the atmosphere that historically has been stored underground in sediments or in surface vegetation, thus exchanging carbon from the geosphere and biosphere to the atmosphere in the carbon cycle. With the accelerated increase in fossil fuel combustion and deforestation since the Industrial Revolution of the nineteenth century, concentrations of GHGs in the atmosphere have increased exponentially. Such emissions of GHGs in excess of natural ambient concentrations contribute to the enhancement of the natural greenhouse effect. This enhanced greenhouse effect has contributed to *global warming*, an increased rate of

[1] Frequencies at which bodies emit radiation are proportional to temperature. Earth has a much lower temperature than the sun and emits radiation at a lower frequency (longer wavelength) than the high-frequency (short-wavelength) solar radiation emitted by the sun.
[2] This includes all gains of incoming energy and all losses of outgoing energy; the planet is always striving to be in equilibrium.
[3] Positive forcing tends to warm the surface while negative forcing tends to cool it.
[4] This is the change in net irradiance at the tropopause after allowing stratospheric temperatures to readjust to radiative equilibrium, but with surface and tropospheric temperatures and state held fixed at the unperturbed values.

warming of Earth's average surface temperature.[5] Specifically, increases in GHGs lead to increased absorption of infrared radiation by Earth's atmosphere and warm the lower atmosphere further, thereby increasing temperatures and evaporation rates near the surface.

Variations in natural phenomena such as volcanoes and solar activity produced most of the global temperature increase that occurred during preindustrial times; more recently, however, increasing atmospheric GHG concentrations resulting from human activity have been responsible for most of the observed global temperature increase.[6]



Source: Philippe Rekacewicz, UNEP/GRID-Arendal. Website: https://www.grida.no/resources/6467. Accessed February 9, 2024.

Figure 3.6-1: The Greenhouse Effect

Global warming affects global atmospheric circulation and temperatures; oceanic circulation and temperatures; wind and weather patterns; average sea level; ocean acidification; chemical reaction rates; precipitation rates, timing, and form; snowmelt timing and runoff flow; water supply; wildfire risks; and other phenomena, in a manner commonly referred to as *climate change*. Climate change is a change in the average weather of Earth that is measured by alterations in wind patterns, storms, precipitation, and temperature. These changes are assessed using historical records of temperature changes occurring in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level of statistical significance specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

[5] This condition results when Earth has to work harder to maintain its radiation budget, because when more GHGs are present in the atmosphere, Earth must force emissions of additional infrared radiation out into the atmosphere.

[6] These basic conclusions have been endorsed by more than 45 scientific societies and academies of science, including all of the national academies of science of the major industrialized countries. Since 2007, no scientific body of national or international standing has maintained a dissenting opinion.

Temperature Predictions by the Intergovernmental Panel on Climate Change

The United Nations Intergovernmental Panel on Climate Change (IPCC) was established by the World Meteorological Organization and United Nations Environment Programme (UNEP) to assess scientific, technical, and socioeconomic information relevant to understanding climate change, its potential impacts, and options for adaptation and mitigation. The IPCC constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. In its Sixth Assessment Report, the IPCC predicted that the global mean temperature change from 2015 to 2100, given five scenarios, could range from 1.4°C (degrees Celsius) to 4.4°C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios.[7] The report also concluded that "[i]t is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred." Warming of the climate system is now considered to be indisputable,[8] with the likely range of total human-caused global surface temperature increases from approximately 0.8°C to 1.3°C since 1850.[9]

Greenhouse Gases and Global Emission Sources

Gases that trap heat in the atmosphere are referred to as GHGs. The effect is analogous to the way a greenhouse retains heat. Prominent GHGs that naturally occur in Earth's atmosphere are water vapor, carbon dioxide (CO_2), methane (CH_4), oxides of nitrogen (NO_X), and ozone. Anthropogenic (human-caused) GHG emissions include releases of these GHGs plus release of human-made gases with high global warming potential (GWP)—ozone-depleting substances such as chlorofluorocarbons (CFCs)[10] and aerosols, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). The GHGs listed by the IPCC (CO_2, CH_4, nitrous oxide [N_2O], HFCs, PFCs, and SF_6) are discussed below, in order of abundance in the atmosphere. Water vapor, despite being the most abundant GHG, is not discussed below because natural concentrations and fluctuations far outweigh anthropogenic influences, making it impossible to predict. Ozone is not included because it does not directly affect radiative forcing. Ozone-depleting substances, which include chlorofluorocarbons, halons, carbon tetrachloride, methyl chloroform, and hydrochlorofluorocarbons, are not included because they have been primarily replaced by HFCs and PFCs.

The GWP is the potential of a gas or aerosol to trap heat in the atmosphere. The GWP of a gas is essentially a measurement of the radiative forcing of a GHG compared with the reference gas, CO_2.

Individual GHG compounds have varying potential for contributing to global warming. For example, methane is 25 times as potent as CO_2, while SF_6 is 22,200 times more potent than CO_2 on a molecule-per-molecule basis. To simplify reporting and analysis, methods have been set forth to describe emissions of GHGs in terms of a single gas. The most commonly accepted method for comparing GHG emissions is the GWP methodology defined in the IPCC reference documents. The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of

[7] United Nations Intergovernmental Panel on Climate Change (IPCC). 2021. Climate Change 2021: The Physical Science Basis Summary for Policymakers.
[8] Ibid.
[9] Ibid.
[10] CFCs destroy stratospheric ozone. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited CFCs production in 1987.

carbon dioxide equivalents (CO_2e), which compares the gas in question to that of the same mass of CO_2 (by definition, CO_2 has a GWP of 1). The GWP of a GHG is a measure of how much a given mass of a GHG is estimated to contribute to global warming. Thus, to describe how much global warming a given type and amount of GHG may cause, the CO_2e is used. A CO_2e is the mass emissions of an individual GHG multiplied by its GWP. As such, a high GWP represents high absorption of infrared radiation and a long atmospheric lifetime compared to CO_2. One must also select a time horizon to convert GHG emissions to equivalent CO_2 emissions to account for chemical reactivity and lifetime differences among various GHG species. The standard time horizon for climate change analysis is 100 years. Generally, GHG emissions are quantified in terms of metric tons (MT) of CO_2e (MT CO_2e) emitted per year.

The atmospheric residence time of a gas is equal to the total atmospheric abundance of the gas divided by its rate of removal.[11] The atmospheric residence time of a gas is, in effect, a half-life measurement of the length of time a gas is expected to persist in the atmosphere when accounting for removal mechanisms such as chemical transformation and deposition.

Table 3.6-1 lists the GWP of each GHG and its lifetime. Units commonly used to describe the concentration of GHGs in the atmosphere are parts per million (ppm), parts per billion (ppb), and parts per trillion (ppt), referring to the number of molecules of the GHG in a sampling of 1 million, 1 billion, or 1 trillion molecules of air. Collectively, HFCs, PFCs, and SF_6 are referred to as high GWP gases. CO_2 is by far the largest component of worldwide CO_2e emissions, followed by CH_4, N_2O, and high GWP gases, in order of decreasing contribution to CO_2e.

The primary human processes that release GHGs include the burning of fossil fuels for transportation, heating, and electricity generation; agricultural practices that release CH_4, such as livestock grazing and crop residue decomposition; and industrial processes that release smaller amounts of high GWP gases. Deforestation and land cover conversion have also been identified as contributing to global warming by reducing Earth's capacity to remove CO_2 from the air and altering Earth's albedo or surface reflectance, thus allowing more solar radiation to be absorbed. Specifically, CO_2 emissions associated with fossil fuel combustion are the primary contributors to human-induced climate change. CO_2, CH_4, and N_2O emissions associated with human activities are the next largest contributors to climate change.

GHGs of California concern are defined by California Assembly Bill (AB) 32 (see the Regulatory Environment subsection below for a description) and include CO_2, CH_4, NO_x, HFCs, PFCs, and SF_6. A seventh GHG, nitrogen trifluoride (NF_3), was also added under the California Health and Safety Code Section 38505(g)(7) as a GHG of concern. These GHGs are described in terms of their physical description and properties, GWP, atmospheric residence lifetime, sources, and atmospheric concentration in 2005 in Table 3.6-1.

[11] Seinfeld, J.H., and S.N. Pandis. 2006. Atmospheric Chemistry and Physics: From Air Pollution to Climate Change, 2nd ed. New York: John Wiley & Sons.

Table 3.6-1: Description of Greenhouse Gases of California Concern

Greenhouse Gas	Physical Description and Properties	Global Warming Potential (100 years)	Atmospheric Residence Lifetime (years)	Sources
Carbon dioxide (CO_2)	Odorless, colorless, natural gas.	1	50–200	burning coal, oil, natural gas, and wood; decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; oceanic evaporation; volcanic outgassing; cement production; land use changes
Methane (CH_4)	Flammable gas and is the main component of natural gas.	25	12	geological deposits (natural gas fields) extraction; landfills; fermentation of manure; and decay of organic matter
Nitrous oxide (N_2O)	Nitrous oxide (laughing gas) is a colorless GHG.	298	114	microbial processes in soil and water; fuel combustion; industrial processes
Chloro-fluoro-carbons (CFCs)	Nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (level of air at Earth's surface); formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms.	3,800–8,100	45–640	refrigerants aerosol propellants; cleaning solvents
Hydro-fluoro-carbons (HFCs)	Synthetic human-made chemicals used as a substitute for CFCs and contain carbon, chlorine, and at least one hydrogen atom.	140–11,700	1–50,000	automobile air conditioners; refrigerants
Per-fluoro-carbons (PFCs)	Stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface.	6,500–9,200	10,000–50,000	primary aluminum production; semiconductor manufacturing
Sulfur hexafluoride (SF_6)	Human-made, inorganic, odorless, colorless, and nontoxic, nonflammable gas.	22,800	3,200	electrical power transmission equipment insulation; magnesium industry,

Greenhouse Gas	Physical Description and Properties	Global Warming Potential (100 years)	Atmospheric Residence Lifetime (years)	Sources
				semiconductor manufacturing; a tracer gas
Nitrogen trifluoride (NF_3)	Inorganic, is used as a replacement for PFCs, and is a powerful oxidizing agent.	17,200	740	electronics manufacture for semiconductors and liquid crystal displays

Sources:
Intergovernmental Panel on Climate Change (IPCC). Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller [eds.]). Cambridge, UK: Cambridge University Press

Intergovernmental Panel on Climate Change (IPCC). 2014. Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (Core Writing Team, Pachauri, R.K. and Reisinger, A. [eds.]). Geneva, Switzerland. IPCC.

The State has begun the process of addressing pollutants referred to as short-lived climate pollutants. Senate Bill (SB) 605, approved by the Governor on September 14, 2014, required the California Air Resources Board (ARB) to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants by January 1, 2016. The ARB released the Proposed Short-Lived Climate Pollutant Reduction Strategy in April 2016. The ARB has completed an emission inventory of these pollutants, identified research needs, identified existing and potential new control measures that offer co-benefits, and coordinated with other State agencies and districts to develop measures.

The short-lived climate pollutants include three main components: black carbon, fluorinated gases, and methane. Fluorinated gases and methane are described in Table 3.6-1 and are already included in the California GHG inventory. Black carbon has not been included in past GHG inventories; however, the ARB will include it in its comprehensive strategy.[12]

Black carbon is a component of fine particulate matter. Black carbon is formed by incomplete combustion of fossil fuels, biofuels, and biomass. Sources of black carbon within a jurisdiction may include exhaust from diesel trucks, vehicles, and equipment, as well as smoke from biogenic combustion. Biogenic combustion sources of black carbon include the burning of biofuels used for transportation, the burning of biomass for electricity generation and heating, prescribed burning of agricultural residue, and natural and unnatural wildfires. Black carbon is not a gas but an aerosol—particles or liquid droplets suspended in air. Black carbon only remains in the atmosphere for days to weeks, whereas other GHGs can remain in the atmosphere for years. Black carbon can be deposited on snow, where it absorbs sunlight, reduces sunlight reflectivity, and hastens snowmelt. Direct effects include absorbing incoming and outgoing radiation; indirectly, black carbon can also affect cloud reflectivity, precipitation, and surface dimming (cooling).

[12] California Air Resources Board (ARB). 2015. Short-Lived Climate Pollutant Reduction Strategy, Concept Paper. May.

GWPs for black carbon were not defined by the IPCC in its Fourth Assessment Report. The ARB has identified a GWP of 3,200 using a 20-year time horizon and 900 using a 100-year time horizon from the IPCC Fifth Assessment. Sources of black carbon are already regulated by the ARB and air district criteria pollutant and toxic regulations that control fine particulate emissions from diesel engines and other combustion sources.[13] Additional controls on the sources of black carbon specifically for their GHG impacts beyond those required for toxic and fine particulates are not likely to be needed.

Ozone is another short-lived climate pollutant that will be part of the strategy. Ozone affects evaporation rates, cloud formation, and precipitation levels. Ozone is not directly emitted, so its precursor emissions, volatile organic compounds (VOC) and oxides of nitrogen (NO_X) on a regional scale and CH_4 on a hemispheric scale, will be subject of the strategy.[14]

Water vapor is also considered a GHG. Water vapor is an important component of our climate system and is not regulated. Increasing water vapor leads to warmer temperatures, which causes more water vapor to be absorbed into the air. Warming and water absorption increase in a spiraling cycle. Water vapor feedback can also amplify the warming effect of other GHGs, such that the warming brought about by increased carbon dioxide allows more water vapor to enter the atmosphere.[15]

Global Climate Change Issue

Climate change is a global problem because GHGs are global pollutants, unlike criteria air pollutants and hazardous air pollutants (also called toxic air contaminants), which are pollutants of regional and local concern. Pollutants with localized air quality effects have relatively short atmospheric lifetimes, approximately 1 day; by contrast, GHGs have long atmospheric lifetimes, several years to several thousand years. GHGs persist in the atmosphere for a long enough time to be dispersed around the globe.

Although the exact lifetime of any particular GHG molecule depends on multiple variables and cannot be pinpointed, more CO_2 is currently emitted into the atmosphere than is sequestered. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through photosynthesis and dissolution, respectively. These are two of the most common processes of CO_2 sequestration. Of the total annual human-caused CO_2 emissions, approximately 54 percent is sequestered through ocean uptake, Northern Hemisphere forest regrowth, and other terrestrial sinks within a year, whereas the remaining 46 percent of human-caused CO_2 emissions is stored in the atmosphere.[16]

Similarly, effects of GHGs are borne globally, as opposed to the localized air quality effects of criteria air pollutants and hazardous air pollutants. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known and cannot be quantified, and no single project would be

[13] California Air Resources Board (ARB). 2015. Short-Lived Climate Pollutant Reduction Strategy, Concept Paper. May.
[14] Ibid.
[15] National Aeronautics and Space Administration (NASA). 2015. NASA—Global Climate Change, Vital Signs of a Planet. Website: http://climate.nasa.gov/causes/. Accessed February 9, 2024.
[16] Seinfeld, J. H. and S.N. Pandis. 1998. Atmospheric Chemistry and Physics from Air Pollution to Climate Change. New York: John Wiley & Sons.

expected to measurably contribute to a noticeable incremental change in the global average temperature, or to global or local climates or microclimate.

Emissions of GHGs have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. A cumulative discussion and analysis of project impacts on global climate change is presented in this Draft EIR because, although it is unlikely that a single project will contribute significantly to climate change, cumulative emissions from many projects affect global GHG concentrations and the climate system.

Global climate change has the potential to result in sea level rise (resulting in flooding of low-lying areas), to affect rainfall and snowfall (leading to changes in water supply), to affect temperatures and habitats (affecting biological resources and public health), and to result in many other adverse environmental consequences.

Although the international, national, State, and regional communities are beginning to address GHGs and the potential effects of climate change, worldwide GHG emissions will likely continue to rise over the next decades.

Climate and Topography

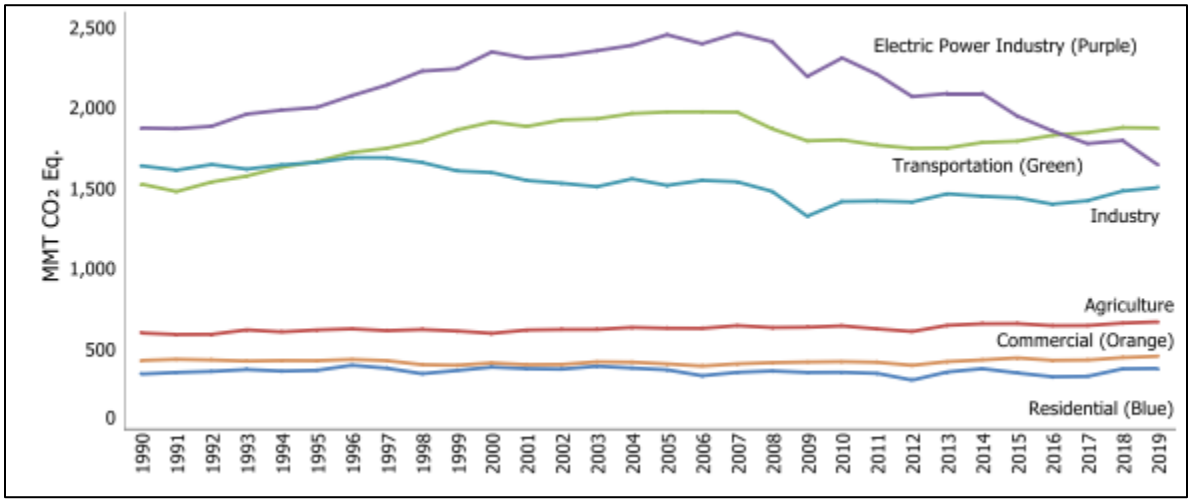
Climate is the accumulation of daily and seasonal weather events over a long period of time, whereas weather is defined as the condition of the atmosphere at any particular time and place. For a detailed discussion of existing regional and project site climate and topography, see Section 3.2, Air Quality.

Existing GHG Emissions

United States GHG Inventory

Total U.S. GHG emissions have increased by 1.8 percent from 1990 to 2019.[17] Figure 3.6-2 presents the trend in United States. GHG emissions by economic sector from 1990 to 2019. Total U.S. GHG emissions increased by 2.8 percent from 1990 to 2019 (an increase of 142.4 million metric tons [MMT] CO_2e). Since 1990, U.S. emissions have increased at an average annual rate of 0.3 percent. Transportation emissions also increased because of an increase in Vehicle Miles Traveled (VMT). Within the United States, fossil fuel combustion accounted for 92.4 percent of CO_2 emissions in 2019. Transportation was the largest emitter of CO_2 in 2019, accounting for 28.6 percent of emissions, followed by electric power generation, accounting for 25.1 percent.

[17] United States Environmental Protection Agency (EPA). 2021. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2019 – Executive Summary.



Note: Emissions shown do not include carbon sinks such as change in land uses and forestry.

Source: United States Environmental Protection Agency (EPA). 2016. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2019. Website: https://www.epa.gov/sites/default/files/2021-04/documents/us-ghg-inventory-2021-main-text.pdf?VersionId=wEy8wQuGrWS8Ef_hSLXHy1kYwKs4.ZaU. Accessed February 9, 2024.

Figure 3.6-2: U.S. Greenhouse Gas Emissions Allocated to Economic Sectors (1990-2019)

California GHG Inventory

As the second largest emitter of GHG emissions in the U.S., California contributes a large quantity (418.2 MMT CO_2e in 2019) of GHG emissions to the atmosphere.[18,19] Human-related emissions of CO_2 are largely byproducts of fossil fuel combustion and are attributable to transportation, industry/manufacturing, electricity generation, natural gas consumption, and agriculture processes. In California, the transportation sector is the largest emitter at 41 percent of GHG emissions, followed by industrial at 24 percent of GHG emissions.[20]

Bay Area Air Quality Management District GHG Inventory

The Bay Area Air Quality Management District (BAAQMD) prepared a GHG inventory for the San Francisco Bay Area (Bay Area), which provides an estimate of GHG emissions in the base year 2011 for all counties located in the jurisdiction of BAAQMD: Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, Napa, and the southern portions of Solano and Sonoma.[21] This GHG inventory is based on the standards for criteria pollutant inventories and is intended to support BAAQMD's climate protection activities.

Table 3.6-2 shows the 2011 breakdown of emissions by end-use sector for each county within BAAQMD's jurisdiction. The estimated GHG emissions are presented in CO_2e, which weights each GHG by its GWP. The GWPs used in BAAQMD's inventory are from the Second Assessment Report of the IPCC.

[18] World Resources Institute (WRI). 2017. 8 Charts to Understand US State Greenhouse Gas Emissions. Website: https://www.wri.org/insights/8-charts-understand-us-state-greenhouse-gas-emissions. Accessed February 9, 2024.
[19] California Air Resources Board (ARB). 2021. Current California GHG Emission Inventory Data, 2000-2019 Trends Figure Data. Website: https://ww2.arb.ca.gov/ghg-inventory-data. Accessed February 9, 2024.
[20] California Air Resources Board (ARB). 2018. California Greenhouse Inventory—Graphs. Website: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2019/ghg_inventory_trends_00-19.pdf. Accessed February 9, 2024.
[21] Bay Area Air Quality Management District. (BAAQMD). 2015. Bay Area Emissions Inventory Summary Report: Greenhouse Gases–Base Year 2011.

In 2011, GHG emissions from Solano County accounted for approximately 5.9 percent of the Bay Area's total GHG emissions with 2.7 percent of the Bay Area's total GHG emissions coming from the industrial/commercial land uses in the southern portion of Solano County.[22] Transportation is the largest GHG emissions sector in the Bay Area, followed by industrial/commercial, electricity generation and cogeneration, and residential fuel usage. In Solano County, the industrial/commercial sector generates the largest amount of GHG emissions, followed by the transportation sector.

Table 3.6-2: 2011 GHG Emissions by Sector and County (MMT CO_2e/Year)

Sector	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano*	Sonoma*
Industrial/Commercial	2.7	17.8	0.4	0.2	1.2	1.4	4.1	2.7	0.5
Residential Fuel	1.3	1.0	0.3	0.1	0.9	0.8	1.5	0.3	0.4
Electricity/Co-gen	0.9	7.2	0.1	0.1	0.5	0.4	2.2	0.4	0.2
Off-road Equipment	0.2	0.2	0.0	0.0	0.2	0.1	0.4	0.0	0.
Transportation	7.9	5.0	1.3	0.9	3.0	5.0	7.6	1.6	2.0
Agriculture/Farming	0.1	0.2	0.2	0.1	0.0	0.0	0.2	0.1	0.2
Total	**13.2**	**31.4**	**2.4**	**1.5**	**5.7**	**7.7**	**16.0**	**5.1**	**3.5**

Notes:
* Portion within BAAQMD jurisdiction
BAAQMD = Bay Area Air Quality Management District; CO_2e = carbon dioxide equivalent; co-gen = cogeneration
Source: Bay Area Air Quality Management District. (BAAQMD). 2015. Bay Area Emissions Inventory Summary Report: Greenhouse Gases-Base Year 2011.

Solano County

Solano County Climate Action Plan

The County of Solano developed the Climate Action Plan (CAP) to address climate change and reduce the community's GHG emissions at the local level. The CAP acknowledges that although climate change is a global problem, many strategies to both adapt to a changing climate and reduce harmful GHG emissions are best enacted at the local level. The CAP recommends 31 measures and 94 implementing actions that the community can take to reduce both emissions and community-wide contributions to global climate change.

City of Suisun City

Suisun City establishes goals, objectives, and policies to improve air quality and reduce greenhouse gas emissions. The General Plan includes land use and transportation policies that reduce VMT and promote alternatives to automobile travel, which also reduce household and business transportation costs, reduce harmful air pollution (other than GHGs), enhance mobility, and reduce time spent

[22] Bay Area Air Quality Management District. (BAAQMD). 2015. Bay Area Emissions Inventory Summary Report: Greenhouse Gases–Base Year 2011.

commuting. The General Plan measures that promote energy efficiency reduce GHGs but also save on household and business utility costs.

Project Site

The project site is currently undeveloped and does not generate GHG emissions.

Climate Change Trends and Effects

CO_2 accounts for more than 75 percent of all anthropogenic GHG emissions, the atmospheric residence time of CO_2 is decades to centuries, and global atmospheric concentrations of CO_2 continue to increase at a faster rate than ever previously recorded. Thus, the warming impacts of CO_2 will persist for hundreds of years after mitigation is implemented to reduce GHG concentrations.

California

Substantially higher temperatures, more extreme wildfires, and rising sea levels are just some of the direct effects experienced in California.[23,24] As reported by the California Natural Resources Agency in 2009, despite annual variations in weather patterns, California has seen a trend of increased average temperatures, more extreme hot days, fewer cold nights, longer growing seasons, less winter snow, and earlier snowmelt and rainwater runoff. Statewide average temperatures increased by about 1.7°F (degrees Fahrenheit) from 1895 to 2011, and a larger proportion of total precipitation is falling as rain instead of snow.[25] Sea level rose by as much as 7 inches along the California coast over the last century, leading to increased erosion and adding pressure to the State's infrastructure, water supplies, and natural resources.

These observed trends in California's climate are projected to continue in the future. Research indicates that California will experience overall hotter and drier conditions with a continued reduction in winter snow (with concurrent increases in winter rains), as well as increased average temperatures and accelerating sea level rise. The frequency, intensity, and duration of extreme weather events such as heat waves, wildfires, droughts, and floods will also change.[26] In addition, increased air pollution and spread of insects potentially carrying infectious diseases will also occur as the climate-associated temperature and associated species clines shift in latitude.

In California, climate change may result in consequences such as the following.[27,28]

[23] California Natural Resources Agency (CNRA). 2009. 2009 California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008.
[24] California Energy Commission (CEC). 2012. Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California.
[25] California Energy Commission (CEC). 2006. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004. Draft Final Report. CEC-600-2006-013-D.
[26] California Natural Resources Agency (CNRA). 2009. 2009 California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008.
[27] California Climate Change Center. (CCCC). 2006. Our Changing Climate, Assessing the Risks to California: A Summary Report from the California Climate Change Center. July 2006. CEC-500-2006-077.
[28] Moser et al. 2009. Moser, Susie, Guido Franco, Sarah Pittiglio, Wendy Chou, Dan Cayan. 2009. The Future Is Now: An Update on Climate Change Science Impacts and Response Options for California. California Energy Commission, PIER Energy-Related Environmental Research Program. CEC-500-2008-071.

- **A reduction in the quality and supply of water from the Sierra snowpack.** If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies. It can also lead to a potential reduction in hydropower.
- **Increased risk of large wildfires.** If rain increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems of Southern California are estimated to increase by approximately 30 percent toward the end of the twenty-first century because more winter rain will stimulate the growth of more plant "fuel" available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90 percent more Northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.
- **Reductions in the quality and quantity of certain agricultural products.** The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.
- **Exacerbation of air quality problems.** If temperatures rise to the medium warming range, there could be 75 to 85 percent more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.
- **A rise in sea levels resulting in the displacement of coastal businesses and residences.** During the past century, sea levels along California's coast have risen about seven inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Elevations of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.
- **An increase in temperature and extreme weather events.** Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.
- **A decrease in the health and productivity of California's forests.** Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.

Bay Area

The following is a summary of climate change factors and predicted trends specific to the Bay Area.

Temperature, Heat, Drought, and Wildfire Events

The Bay Area is expected to experience warming over the rest of the twenty-first century. Consistent with Statewide projections, the annual average temperature in the Bay Area will likely increase by 2.7°F between 2000 and 2050, based on GHGs that have already been emitted into the atmosphere. By the end of the century, the increase in the Bay Area's annual average temperature may range from approximately 3.5°F to 11°F relative to the average annual temperature simulated for the

1961–1990 baseline period used for the study, depending on the GHG emissions scenarios.[29] The projected rate of warming, especially in the latter half of the twenty-first century is considerably greater than warming rates derived from historical observed data.

Specific predictions related to temperature/heat are summarized below.

- The annual average temperature in the Bay Area has been increasing over the last several decades.
- The Bay Area is expected to see an increase in average annual temperature of 2.7°F by 2050 and 3.5°F to 11°F by 2100. Projections show a greater warming trend during the summer season. The coastal parts of the Bay Area will experience the most moderate warming trends.[30]
- Extreme heat events are expected to increase in duration, frequency, and severity by 2050. Extreme freeze events are expected to decrease in frequency and severity by 2100, but occasional colder-than-historical events may occur by 2050.[31]

Precipitation, Rainfall, and Flooding Events

Studies of the effect of climate change on the long-term average precipitation for California show some variance.[32] Considerable variability exists across individual models, and examining the average changes can mask more extreme scenarios that project much wetter or drier conditions. California is expected to maintain a Mediterranean climate through the next century, with dry summers and wet winters that vary between seasons, years, and decades. Wetter winters and drier springs are also expected, but overall annual precipitation is not projected to change substantially. By midcentury, more precipitation is projected to occur in winter in the form of less frequent but larger events. The majority of global climate models predict drying trends across the State by 2100.[33]

Specific factors related to precipitation/rainfall/extreme events are summarized below.

- The Bay Area has not experienced substantial changes in rainfall depth or intensities over the past 30 years.
- The Bay Area will continue to experience a Mediterranean climate, with little change in annual precipitation projected by 2050, although a high degree of variability may persist.
- An annual drying trend is projected to occur by 2100. The greatest decline in precipitation is expected to occur during the spring months, while minimal change is expected during the winter months.
- Increases in drought duration and frequency coupled with higher temperatures, as experienced in 2012, 2013, and 2014, will increase the likelihood of wildfires.

[29] California Climate Change Center (CCCC). 2009. Climate Change Scenarios and Sea Level Rise Estimates for the California 2009 Climate Change Scenarios Assessment.
[30] Cal-Adapt. 2021. Climate Tools. Website: http://cal-adapt.org/tools/. Accessed February 9, 2024.
[31] Ibid.
[32] California Climate Change Center (CCCC). 2009. Climate Change Scenarios and Sea Level Rise Estimates for the California 2009 Climate Change Scenarios Assessment. CEC-500-2009-014-F.
[33] California Natural Resources Agency (CNRA). 2009. 2009 California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008.

- California is expected to see increases in the magnitude of extreme events, including increased precipitation delivered from atmospheric river events, which would bring high levels of rainfall during short time periods and increase the chance of flash floods. The Bay Area is also expected to see an increase in precipitation intensities, but possibly through less frequent events.[34]

Reduced Sierra Nevada Snowpack and Water Supply Shortages

If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate surface water supplies.

Vectors and Disease Events

Climate change will likely increase vector insect populations and, in turn, may increase the risk of some infectious diseases, particularly those diseases that appear in warm areas, such as malaria, dengue fever, yellow fever, and encephalitis.

Air Quality and Pollution Events

Warming-induced increases in the frequency of smog (ground level ozone) events and particulate air pollution will exacerbate respiratory disorders.[35] Although there could be health effects resulting from changes in the climate and the consequences that can occur, inhalation of GHGs at levels currently in the atmosphere would not result in adverse health effects, with the exception of ozone and aerosols (particulate matter). The potential health effects of ozone and particulate matter are discussed in criteria pollutant analyses. At very high indoor concentrations (not at levels existing outside), CO_2, CH_4, SF_6, and some chlorofluorocarbons can cause suffocation as the gases can displace oxygen.[36]

Solano County

In Solano County, climate change would result in sea level rise with possible increases in coastal flooding, saltwater intrusion, water and energy supply shortages, and increased wildfire risk. Rises in average global sea surface and land surface temperatures and indirect effects associated with climate change increase the likelihood for distribution of diseases and other public health problems; increased occurrence and severity of flooding, storm, and wildfire events; habitat loss and species endangerment; and declining agricultural production. Particularly, if GHG emissions are not reduced globally, the effects of climate change on Solano County are likely to be:[37]

- Up to 2.5 times more critical dry years
- Sea level rise inundation of shoreline areas
- Loss of habitat for sensitive species
- Up to 30 percent higher building energy use
- Increased irrigation demand from agriculture
- Changes to crop types grown in the County

[34] California Climate Change Center (CCCC) 2009. Climate Change Scenarios and Sea Level Rise Estimates for the California 2009 Climate Change Scenarios Assessment. CEC-500-2009-014-F. August.
[35] United States Environmental Protection Agency (EPA) 2009. Ozone and your Health. EPA-456/F-09-001. February.
[36] National Institute for Occupational Safety and Health (NIOSH) 2018. Carbon Dioxide. November 29. Website: www.cdc.gov/niosh/npg/npgd0103.html. Accessed February 9, 2024.
[37] County of Solano. 2011. Climate Action Plan. Website: https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=10080. Accessed February 9, 2024.

Energy Basics

Energy is generally transmitted either in the form of electricity, measured in kilowatts (kW)[38] or megawatts (MW),[39] or natural gas measured in therms.[40]

Electricity

Electricity is used primarily for lighting, appliances, and other uses associated with the project.

Natural Gas

Natural gas is used primarily for heating, water heating, and cooking purposes and is typically associated with commercial and residential uses.

Fuel

Fuel is used primarily for powering off-road equipment, trucks, and worker vehicles. The typical fuel types used are diesel and gasoline.

Electricity Generation, Distribution, and Use

State of California

In 2019, the State of California generated approximately 277,704 gigawatt-hours (GWh) of electricity which decreased by 2.7 percent from 2018.[41] Approximately 68 percent of the energy generation is sourced from natural gas, coal, and non-renewables and 32 percent from renewable sources (i.e., solar, wind, and geothermal).[42]

In 2019, California ranked second in the nation in conventional hydroelectric generation, fourth in electricity production, and first as a producer of electricity from solar, geothermal, and biomass resources. California leads the nation in solar thermal electricity capacity and generation.

Electricity and natural gas are distributed through the various electric load-serving entities (LSEs) in California. These entities include investor-owned utilities (IOUs), publicly owned LSEs, rural electric cooperatives, community choice aggregators, and electric service providers.[43]

County of Solano

Pacific Gas and Electric Company (PG&E) provides electricity to many of the cities throughout Solano County. In 2019, Solano County's energy consumption was approximately 3,226 GWh.[44]

[38] 1 kW = 1.000 watts; A watt is a derived unit of power that measures rate of energy conversion. 1 watt is equivalent to work being done at a rate of 1 joule of energy per second. In electrical terms, 1 watt is the power dissipated by a current of 1 ampere flowing across a resistance of 1 volt.

[39] 1 MW = 1 million watts

[40] A unit for quantity of heat that equals 100,000 British thermal units (Btu). A Btu is the quantity of heat required to raise the temperature of 1 pound of liquid water 1 degree Fahrenheit at a constant pressure of 1 atmosphere.

[41] California Energy Commission (CEC). 2020. 2019 Total System Electric Generation. Website: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation/2019. Accessed February 9, 2024.

[42] Ibid.

[43] California Energy Commission (CEC). Electric Load-Serving Entities (LSEs) in California Website: https://www.energy.ca.gov/almanac/electricity_data/utilities.html. Accessed February 9, 2024.

[44] California Energy Commission (CEC). 2020. Electricity Generation by County. Website: https://ecdms.energy.ca.gov/elecbycounty.aspx. Accessed February 9, 2024.

Project Site

The project site is currently vacant and does not consume electricity. PG&E provides electricity to the project site.

Natural Gas Generation, Distribution, and Use

State of California

Natural gas is used for everything from generating electricity to cooking and space heating to an alternative transportation fuel. Natural gas generation (in kWh) represented 11 percent of electric power generation in 1990 and increased over the 30-year period to represent 34 percent of electric power generation in 2019.[45] In 2019, the State ranked 14 in natural gas marketed production, producing 196,823 million cubic feet of natural gas.[46]

Natural gas-fired generation has become the dominant source of electricity in California, as it currently fuels approximately 45 percent of electricity consumption.[47] Because natural gas is a dispatchable resource that provides load when the availability of hydroelectric power generation and/or other sources decrease, use varies greatly from year to year. The availability of hydroelectric resources, the emergence of renewable resources for electricity generation, and overall consumer demand are the variables that shape natural gas use in electric generation.

County of Solano

As mentioned prior, PG&E provides natural gas to the unincorporated portions of Solano County. In 2019, Solano County's natural gas consumption was approximately 236 million therms (MMBtu).[48]

Fuel Use

State of California

California is one of the top producers of petroleum in the nation, with drilling operations occurring throughout the State. A network of crude oil pipelines connects production areas to oil refineries in the Los Angeles area, the San Francisco Bay Area, and the Central Valley. California oil refineries also process Alaskan and foreign crude oil received in ports in Los Angeles, Long Beach, and the San Francisco Bay Area. Crude oil production in California and Alaska is in decline, and California refineries have become increasingly dependent on foreign imports.[49] Since 2012, foreign suppliers, led by Saudi Arabia, provide over half of the crude oil refined in California.[50,51] According to the

[45] United States Environmental Protection Agency (EPA). 2016. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019.
[46] United States Energy Information Administration (EIA). 2020. Rankings: Natural Gas Marketed Production, 2019. Website: https://www.eia.gov/state/rankings/?sid=CA#series/47. Accessed February 9, 2024.
[47] California Energy Commission (CEC). 2021. Supply and Demand of Natural Gas in California. Website: https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market/supply-and-demand-natural-gas-california. Accessed February 9, 2024.
[48] California Energy Commission (CEC). 2020. Electricity Generation by County. Website: https://ecdms.energy.ca.gov/elecbycounty.aspx. Accessed February 9, 2024.
[49] California Energy Commission (CEC). 2020. Oil Supply Sources to California Refineries. Website: https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/oil-supply-sources-california-refineries. Accessed February 9, 2024.
[50] California Energy Commission (CEC). 2019. Foreign Sources of Crude Oil Imports to California 2018. March. Website: https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/foreign-sources-crude-oil-imports. Accessed February 9, 2024.
[51] California Energy Commission (CEC). 2020. Oil Supply Sources to California Refineries. Website: https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/oil-supply-sources-california-refineries. Accessed February 9, 2024.

United States Energy Information Administration (EIA), California's field production of crude oil has steadily declined since the mid-1980s, totaling approximately 161.5 million barrels in 2019.[52]

According to the EIA, transportation accounted for nearly 40 percent of California's total energy demand, amounting to approximately 3,170 trillion British thermal units (Btu) in 2018.[53] California's transportation sector, including rail and aviation, consumed roughly 584 million barrels of petroleum fuels in 2018.[54] In 2018, petroleum-based fuels were used for approximately 86 percent of the State's total transportation activity.[55] The California Energy Commission (CEC) produces the California Annual Retail Fuel Outlet Report, which is a compilation of gasoline and diesel fuel sales data from across the State available at the county level. According to the CEC, California's 2019 fuel sales totaled 15,365 million gallons of gasoline and 3,720 million gallons of diesel.[56]

Alternative Fuels

A variety of alternative fuels are used to reduce petroleum-based fuel demand. The use of these fuels is encouraged through various Statewide regulations and plans, such as the Low Carbon Fuel Standard (LCFS) and SB 32. Conventional gasoline and diesel may be replaced, depending on the capability of the vehicle, with transportation fuels including hydrogen, biodiesel, and electricity. Currently, 44 public hydrogen refueling stations exist in California; however, none are in the City.[57,58] Currently, 10 public biodiesel refueling stations are in California, with none of them in the City.[59]

Electric Vehicles

Electricity can be used to power electric and plug-in hybrid electric vehicles (EVs) directly from the power grid. Electricity used to power vehicles is generally provided by the electricity grid and stored in the vehicle's batteries. Fuel cells are being explored to use electricity generated onboard the vehicle to power electric motors. Currently, California has 13,048 EV charging stations.[60] According to the Department of Energy (DOE) Alternative Fuels Data Center, Solano County has 38 EV charging stations.[61]

[52] United States Department of Energy, Alternative Fuels Data Center. 2020. "Alternative Fueling Station Locator [Interactive Database]." Website: https://afdc.energy.gov/stations/#/find/nearest. Accessed February 9, 2024.
[53] United States Energy Information Administration (EIA). 2020. Table F33: Total Energy Consumption, Price, and Expenditure Estimates, 2019. Website: https://www.eia.gov/state/seds/sep_fuel/html/pdf/fuel_te.pdf. Accessed February 9, 2024.
[54] United States Energy Information Administration (EIA). 2020. Table F16: Total Petroleum Consumption Estimates, 2019. Website: https://www.eia.gov/state/seds/sep_fuel/html/pdf/fuel_use_pa.pdf. Accessed February 9, 2024.
[55] United States Energy Information Administration (EIA). 2020. Table F18: Natural Gas Consumption Estimates, 2019. Website: https://www.eia.gov/state/seds/seds-data-fuel.php?sid=CA#NaturalGas. Accessed February 9, 2024.
[56] California Energy Commission (CEC). 2019. 2010-2019 CEC-A15 Results and Analysis. Website: https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting. Accessed February 9, 2024.
[57] United State Department of Energy, Alternative Fuels Data Center. 2020. Alternative Fueling Station Locator [Interactive Database]. Website: https://afdc.energy.gov/stations/#/find/nearest. Accessed February 9, 2024.
[58] United States Department of Energy, Alternative Fuels Data Center. 2020. Alternative Fueling Station Counts by State. June. Website: https://afdc.energy.gov/stations/states. Accessed February 9, 2024.
[59] Ibid.
[60] United States Department of Energy (DOE). N.d. Alternative Fuels Data Center: Electric Vehicle Charging Station Locations. Website: https://afdc.energy.gov/fuels/electricity_locations.html#/analyze?region=US-CA&fuel=ELEC&ev_levels=all. Accessed February 9, 2024.
[61] United States Department of Energy (DOE) Alternative Fuels Data Center. 2020. Electric Vehicle Charging Station Locations. Website: https://afdc.energy.gov/fuels/electricity_locations.html#/analyze?country=US&location_mode=address&location=Solano%20County. Accessed February 9, 2024.

Project Site

The project site is currently vacant and does not consume any fuels.

3.6.3 - Regulatory Framework

International

United Nations Framework Convention on Climate Change

On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). Under the Convention, governments agreed to gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

Western Climate Initiative (Western North America Cap-and-Trade Program)

Cap-and-trade refers to a policy tool where emissions are limited to a certain amount and can be traded, which provides flexibility on how the emitter can comply. Each emitter caps carbon dioxide emissions from power plants, auctions carbon dioxide emission allowances, and invests the proceeds in strategic energy programs that further reduce emissions, save consumers money, create jobs, and build a clean energy economy. The Western Climate Initiative partner jurisdictions have developed a comprehensive initiative to reduce North America GHG emissions to 15 percent below 2005 levels by 2020. The partners are California, British Columbia, Manitoba, Ontario, and Québec. Currently only California and Québec are participating in the Cap-and-Trade Program.[62]

Kyoto Protocol

The Kyoto Protocol is an international agreement linked to the UNFCCC. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions at average of 5 percent against 1990 levels over the 5-year period from 2008–2012. The Convention (as discussed above) encouraged industrialized countries to stabilize emissions; however, the Protocol commits them to do so. Developed countries have contributed more emissions over the last 150 years; therefore, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities."

Paris Climate Change Agreement

Parties to the UNFCCC reached a landmark agreement on December 12, 2015, in Paris, charting a fundamentally new course in the two-decade-old global climate effort. Culminating a 4-year negotiating round, the new treaty ends the strict differentiation between developed and developing countries that characterized earlier efforts, replacing it with a common framework that commits all countries to put forward their best efforts and to strengthen them in the years ahead. This includes, for the first time, requirements that all parties report regularly on their emissions and implementation efforts and undergo international review.

[62] Center for Climate and Energy Solutions (C^2ES). 2015. Multi-State Climate Initiatives. Website: http://www.c2es.org/us-states-regions/regional-climate-initiatives. Accessed February 9, 2024.

The agreement and a companion decision by parties were the key outcomes of the conference, known as the 21st Conference of Parties, or "COP 21." On June 1, 2017, Former President Trump announced the decision for the United States to withdraw from the Paris Agreement.[63] However, on January 20, 2021, President Biden signed the instrument to bring the United States back into the Paris Agreement that same day. California remains committed to combating climate change through programs aimed to reduce GHGs.[64]

Federal

Massachusetts et al. v. EPA (U.S. Supreme Court GHG Endangerment Ruling)

Massachusetts et al. v. EPA (Supreme Court Case 05-1120) was argued before the United States Supreme Court on November 29, 2006, in which it was petitioned that the United States Environmental Protection Agency (EPA) regulate four GHGs, including CO_2, under Section 202(a)(1) of the Clean Air Act (CAA). A decision was made on April 2, 2007, in which the Supreme Court found that GHGs are air pollutants covered by the CAA. The Court held that the Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations; and
- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed under "Clean Vehicles" below. After a lengthy legal challenge, the U.S. Supreme Court declined to review an Appeals Court ruling which upheld the EPA Administrator findings.

United States Consolidated Appropriations Act (Mandatory GHG Reporting)

The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory GHG reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule, which became effective January 1, 2010. The rule requires reporting of GHG emissions from large sources and suppliers in the United States and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 MT or more per year of GHG emissions are required to submit annual reports to

[63] The White House. 2017. Statement by President Trump on the Paris Climate Accord. Website: https://it.usembassy.gov/statement-president-trump-paris-climate-accord/. Accessed February 9, 2024.

[64] California Air Resources Board (ARB). 2017. New Release: California and China Team Up to Push for Millions More Zero-emission Vehicles. Website: https://ww2.arb.ca.gov/news/california-and-china-team-push-millions-more-zero-emission-vehicles. Accessed February 9, 2024.

the EPA. The first annual reports for the largest emitting facilities, covering calendar year 2010, were submitted to EPA in 2011.

United States Clean Air Act Permitting Programs (New GHG Source Review)

The EPA issued a final rule on May 13, 2010, which establishes thresholds for GHGs that define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these CAA permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the Code of Federal Regulations, the EPA states:

> This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the Clean Air Act, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to greenhouse gas sources, starting with the largest greenhouse gas emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources, but excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for greenhouse gas emissions until at least April 30, 2016.

The EPA estimates that facilities responsible for nearly 70 percent of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest GHG emitters—power plants, refineries, and cement production facilities.

Energy Independence and Security Act

The Energy Policy Act of 2005 created the Renewable Fuel Standard program. The Energy Independence and Security Act of 2007 expanded this program by:

- Expanding the Renewable Fuel Standard program to include diesel in addition to gasoline.
- Increasing the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.
- Establishing new categories of renewable fuel and setting separate volume requirements for each one.
- Requiring EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

This expanded Renewable Fuel Standard program lays the foundation for achieving substantial reductions of GHG emissions from the use of renewable fuels, reducing the use of imported petroleum, and encouraging the development and expansion of the nation's renewable fuels sector.

Signed on December 19, 2007, by Former President George W. Bush, the Energy Independence and Security Act of 2007 (EISA) reinforces the energy reduction goals for federal agencies put forth in Executive Order 13423, as well as introduces more aggressive requirements. The three key provisions enacted are the Corporate Average Fuel Economy Standards, the Renewable Fuel Standard, and the appliance/lighting efficiency standards.[65]

EPA and National Highway Traffic Safety Administration Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards Final Rule

Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light-duty trucks. The law has become more stringent over time. On May 19, 2009, the President put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the United States Department of Transportation's (USDOT's) National Highway Traffic Safety Administration (NHTSA) announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program applied to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this CO_2 level solely through fuel economy improvements. Together, these standards would cut CO_2 emissions by an estimated 960 MMT and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). The EPA and the NHTSA issued final rules on a second phase joint rulemaking, establishing national standards for light-duty vehicles for model years 2017 through 2025 in August 2012.[66] The new standards for model years 2017 through 2025 apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles. The final standards are projected to result in an average industry fleet wide level of 163 grams/mile of CO_2 in model year 2025, which is equivalent to 54.5 miles per gallon if achieved exclusively through fuel economy improvements.

In August 2017, the EPA asked for additional information and data relevant to assessing whether the GHG emissions standards for model years 2022–2025 remain appropriate. In early 2018, the EPA Administrator announced that the midterm evaluation for the GHG emissions standards for cars and light-duty trucks for model years 2022–2025 was completed and stated his determination that the current standards should be revised in light of recent data. Subsequently, in 2018, the EPA and NHTSA proposed to amend certain existing Corporate Average Fuel Economy (CAFE) standards and tailpipe CO_2 emissions standards for passenger cars and light-duty trucks and establish new standards, covering model years 2022–2025. Compared to maintaining the post-2020 standards then in place, the pending proposal would increase U.S. fuel consumption.[67] California and other states announced their intent to challenge federal actions that would delay or eliminate GHG reductions. In

[65] United States Environment Protection Agency (EPA). Summary of the Energy Independence and Security Act. Website: https://www.epa.gov/laws-regulations/summary-energy-independence-and-security-act. Accessed February 9, 2024.

[66] United States Environmental Protection Agency (EPA). 2012. EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks.

[67] United States Environmental Protection Agency (EPA). 2018. The Safer Affordable Fuel-Efficient (SAFE) Vehicles Final Rule for Model Years 2021-2026 Passenger Cars and Light Trucks. Available at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/safer-affordable-fuel-efficient-safe-vehicles-final-rule. Accessed: July 18, 2024.

April 2020, the NHTSA and EPA amended the CAFE and GHG emissions standards for passenger cars and light-duty trucks and established new and less stringent standards, covering model years 2021 through 2026.

On September 27, 2019, the EPA and NHTSA published the Safer Affordable Fuel-Efficient (SAFE) Rule (Part One).[68] The SAFE Rule (Part One) went into effect in November 2019 and revoked California's authority to set its own GHG standards and set Zero-Emission Vehicle (ZEV) emission mandates in California. The SAFE Rule (Part One) froze new ZEV sales at model year 2020 levels for year 2021 and beyond in California and would likely result in a lower number of future ZEVs and a corresponding greater number of future gasoline internal combustion engine vehicles. In response to the EPA's adoption of the SAFE Rule (Part One), the ARB issued guidance regarding the adjustment of vehicle emissions factors to account for the rule's implications on criteria air pollutant and GHG emissions.[69,70]

The SAFE Rule was subject to ongoing litigation and on February 8, 2021, the D.C. Circuit Court of Appeals granted the Biden Administration's motion to stay litigation over the SAFE Rule (Part One). On April 22 and April 28, 2021, respectively, the NHTSA and EPA formally announced their intent to reconsider the SAFE Rule (Part One).[71,72] A virtual public hearing for the EPA's Notice of Reconsideration of the SAFE Rule (Part One) was held on June 2, 2021. The NHTSA finalized the CAFE preemption rulemaking to withdraw its portions of the SAFE Rule (Part One) on December 21, 2021.[73] On March 9, 2022, the EPA reinstated California's authority under the CAA to implement its own GHG emission standards and ZEV sales mandate and entirely rescinded the SAFE Rule (Part One). On July 28, 2023 the NHTSA announced a new proposal for CAFE and heavy-duty pickup truck and van standards, which set new fuel economy standards for model years 2027-2032.

In August 2021, the EPA proposed to revise existing national GHG emissions standards for passenger cars and light-duty trucks for Model Years 2023–2026 to make the standards more stringent. These standards were finalized in December 2021. These standards are the strongest vehicle emissions standards ever established for the light-duty vehicle sector and are based on sound science and

[68] United States Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA). 2019. Federal Register, Vol. 84, No. 188, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program. September 27. Available at: https://www.govinfo.gov/content/pkg/FR-2019-09-27/pdf/2019-20672.pdf. Accessed: July 18, 2024.

[69] California Air Resources Board (ARB). 2019. EMFAC Off-Model Adjustment Factors to Account for the SAFE Vehicle Rule Part One. November 20. Available at: https://ww2.arb.ca.gov/sites/default/files/2023-02/emfac_off_model_adjustment_factors_final_draft.pdf. Accessed: July 18, 2024.

[70] California Air Resources Board (ARB). 2020. EMFAC Off-Model Adjustment Factors for Carbon Dioxide Emissions to Account for the SAFE Vehicles Rule Part One and the Final SAFE Rule. June 26. Available at:https://ww2.arb.ca.gov/sites/default/files/2023-02/emfac_off_model_co2_adjustment_factors_06262020-final.pdf. Accessed: July 18, 2024.

[71] National Highway Traffic Safety Administration (NHTSA). 2021. NHTSA Advances Biden-Harris Administration's Climate & Jobs Goals. April 22. Available at: https://www.nhtsa.gov/press-releases/nhtsa-advances-biden-harris-administrations-climate-jobs-goals. Accessed: July 18, 2024.

[72] United States Environmental Protection Agency (EPA). 2021. Federal Register, Vol. 86, No. 80, California State Motor Vehicle Pollution Control Standards; Advanced Clean Car Program; Reconsideration of a previous Withdrawal of a Waiver of Preemption; Opportunity for Public Hearing and Public Comment. April 28. Available at: https://www.govinfo.gov/content/pkg/FR-2021-04-28/pdf/2021-08826.pdf. Accessed: July 18, 2024.

[73] National Highway Traffic Safety Administration (NHTSA). 2023. Corporate Average Fuel Economy. Available at: https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy. Accessed: July 18, 2024.

grounded in a rigorous assessment of current and future technologies. The updated standards will result in avoiding more than 3 billion MT of GHG emissions through 2050.[74]

On August 5, 2021, the EPA announced plans to reduce GHG emissions and other harmful air pollutants from heavy-duty trucks through a series of rulemakings over the next three years. The first rulemaking, signed in December 2022, focuses on reducing emissions that form smog and soot from heavy-duty vehicles in model year 2027 and beyond.[75] Since this first rulemaking, two additional rulemakings have been proposed to control truck emissions. One focuses on smog- and soot-forming emissions and GHG emissions from light- and medium-duty vehicles starting with model year 2027, and later models of commercial pickup trucks and vans. The other focuses on GHG emissions from heavy-duty vehicles for model year 2027 and later. On July 28, 2023, the NHTSA announced a new proposal for heavy-duty pickup truck and van standards. The proposal set new fuel economy standards for model years 2030–2035 for heavy-duty pickup trucks and vans.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. The State of California has received a waiver from the EPA to have separate, stricter CAFE Standards. Although global climate change did not become an international concern until the 1980s, efforts to reduce energy consumption began in California in response to the oil crisis in the 1970s, resulting in the incidental reduction of GHG emissions. In order to manage the State's energy needs and promote energy efficiency, AB 1575 created the CEC in 1975.

State

California Assembly Bill 32: Global Warming Solutions Act and Scoping Plan

The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. "Greenhouse gases" as defined under AB 32 include CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6. Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride (NF_3), has also been added to the list of GHGs. The ARB is the State agency charged with monitoring and regulating sources of GHGs.

The State has made steady progress in implementing AB 32. The ARB's initial Climate Change Scoping Plan (Scoping Plan) contained measures designed to reduce the State's emissions to 1990 levels by the year 2020 to comply with AB 32.[76] The Scoping Plan identified recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target. In addition, the Scoping Plan differentiates between "capped" and "uncapped" strategies. Capped strategies are subject to the ARB's Cap-and-Trade Program. The Cap-

[74] United States Environmental Protection Agency (EPA). 2021. Final Rule to Revise Existing National GHG Emissions Standards for Passenger Cars and Light Trucks Through Model Year 2026. Available at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-revise-existing-national-ghg-emissions. Accessed: July 18, 2024

[75] United States Environmental Protection Agency (EPA). 2021. Clean Trucks Plan. https://www.epa.gov/regulations-emissions-vehicles-and-engines/clean-trucks-plan. August. Accessed: July 18, 2024.

[76] California Air Resources Board (ARB). 2008. Climate Change Scoping Plan, a framework for change.

and-Trade Program works with other direct regulatory measures and provides an economic incentive to reduce emissions.

The State achieved the 2020 target several years ahead of schedule.[77] As further discussed below, the Scoping Plan has been subsequently updated to go beyond the emission reductions called for in the initial version, in line with more recent State policy directives.

California Senate Bill 32 and Assembly Bill 197

Former Governor Brown signed SB 32 in September of 2016, giving the ARB the statutory responsibility to include the 2030 emissions target previously contained in Executive Order B-30-15 in the 2017 Scoping Plan Update. SB 32 states, "In adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by this division, the state [air resources] board shall ensure that Statewide greenhouse gas emissions are reduced to at least 40 percent below the Statewide greenhouse gas emissions limit no later than December 31, 2030." As such, SB 32 lays the foundation for the legislative reduction targets for 2030.

SB 32 was coupled with a companion bill: AB 197 (Garcia, 2016). Designed to improve the transparency of the ARB's regulatory and policy-oriented processes, AB 197 created the Joint Legislative Committee on Climate Change Policies, a committee with the responsibility to ascertain facts and make recommendations to the Legislature concerning Statewide programs, policies, and investments related to climate change. AB 197 also requires the ARB to make certain GHG emissions inventory data publicly available on its website; consider the social costs of GHG emissions when adopting rules and regulations designed to achieve GHG emission reductions; and include specified information in all Scoping Plan updates for the emission reduction measures contained therein.

California Assembly Bill 1279

The Legislature enacted AB 1279, the California Climate Crisis Act, in September 2022. The legislation declares the policy of the State to achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter. Additionally, the bill requires that by 2045, Statewide anthropogenic GHG emissions be reduced to at least 85 percent below 1990 levels.

2022 Scoping Plan

The most recent version of the ARB's Scoping Plan, the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan), addresses the SB 32 targets and was adopted on December 15, 2022. This plan builds upon previously adopted Scoping Plans, including the 2017 Scoping Plan which originally addressed the emission reduction goals in SB 32, and provides a detailed sector-by-sector guide to address climate change by cutting greenhouse gas emissions by 85 percent and achieving carbon neutrality in 2045, with the main focus of emission reductions efforts being the transportation and energy sectors.[78]

[77] California Air Resources Board (ARB). 2008. Climate Change Scoping Plan, a framework for change.
[78] California Air Resources Board (ARB). 2022. The 2022 Scoping Plan for Achieving Carbon Neutrality. December.

California Senate Bill 350: Clean Energy and Pollution Reduction Act

In 2015, the State Legislature approved, and the Governor signed, SB 350, which reaffirmed California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the Renewables Portfolio Standard (RPS), higher energy efficiency requirements for buildings, initial strategies toward a regional electricity grid, and improved infrastructure for EV charging stations. Provisions for a 50 percent reduction in the use of petroleum Statewide were removed from the bill due to opposition and concern that it would prevent the bill's passage. Specifically, SB 350 requires the following to reduce Statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33 percent to 50 percent by 2030, with interim targets of 40 percent by 2024 and 25 percent by 2027.
- Double the energy efficiency in existing buildings by 2030. This target will be achieved through the California Public Utility Commission, the CEC, and local publicly owned utilities.
- Reorganize the Independent System Operator (ISO) to develop more regional electrified transmission markets and to improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.[79]

California Senate Bill 100: Renewable Portfolio Standard Program

On September 10, 2018, Governor Newsom signed SB 100, requiring California electricity utility providers to supply all in-State end users with electricity sourced from renewable or carbon-free sources by 2045. Specifically, SB 100 accelerates previously established RPS goals and requires that the program achieve 50 percent of electricity sourced from renewables by December 31, 2026, 60 percent by December 31, 2030, and 100 percent of electricity sourced from carbon-free sources by December 31, 2045. For clarification, renewable sources, as described herein, includes all renewable sources (e.g., solar, small hydro, wind) but notably omits large-scale hydroelectric and nuclear electricity generation; carbon-free sources include all renewable sources as well as large-scale hydroelectric and nuclear electricity generation.

In March 2021, the CEC, the California Public Utilities Commission (CPUC) and the ARB released a joint-agency report evaluating the current feasibility of achieving the energy resource and GHG reductions goals of SB 100. The report finds that SB 100 is technically feasible when analyzed under scenarios of varying timelines, advancements in energy generation technology, and energy source portfolios. Under the SB 100 Core Scenario, it is anticipated that California will need to triple its current electricity power capacity.[80]

[79] California Legislative Information (California Leginfo). 2015. Senate Bill 350 Clean Energy and Pollution Reduction Act of 2015. Website: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350. Accessed February 9, 2024.

[80] California Energy Commission (CEC). 2021. 2021 SB 100 Joint Agency Report, Achieving 100 Percent Clean Electricity in California: An Initial Assessment. March 15. Available at: https://www.energy.ca.gov/publications/2021/2021-sb-100-joint-agency-report-achieving-100-percent-clean-electricity. Accessed: July 2024.

2023 Integrated Energy Policy Report

The Draft 2023 Integrated Energy Policy Report (IEPR) provides an assessment of major energy trends and issues for a variety of energy sectors, as well as policy recommendations.[81] Prepared by the CEC, this report details the key energy issues facing California and develops potential strategies to address these issues. The Draft 2023 IEPR includes a discussion of electricity resources and demand, accelerating and enhancing the energy grid, and potential use of hydrogen. The assessments and forecasted energy demand within this report will be used by the CEC to develop future energy policies.

California Senate Bill 1020: Revised Renewable Portfolio Standard Program

SB 1020 (September 2022) revises the standards from SB 100, requiring the following percentage of retail sales of electricity to California end-use customers to come from eligible renewable energy resources and zero-carbon resources: 90 percent by December 31, 2035, 95 percent by December 31, 2040, and 100 percent by December 31, 2045.

California Assembly Bill 1493: Pavley Regulations and Fuel Efficiency Standards

California AB 1493, enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the U.S. District Court for the District of Columbia in 2011.[82]

The standards were to be phased in during the 2009 through 2016 model years. When fully phased in, the near-term (2009–2012) standards were to result in an approximately 22 percent reduction compared with the 2002 fleet, and the midterm (2013–2016) standards were to result in about a 30 percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant.[83]

The second phase of the implementation for the Pavley Bill was incorporated into Amendments to the Low Emission Vehicle (LEV) Program referred to as LEV III or the Advanced Clean Cars program. The Advanced Clean Car program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The regulation will reduce GHGs from new cars by 34 percent from 2016 levels by 2025. The new rules will reduce pollutants from gasoline and diesel-powered cars, and deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid EVs

[81] California Energy Commission (CEC). 2023. Draft 2023 Integrated Energy Policy Report. Available at:https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2023-integrated-energy-policy-report. Accessed: July 18, 2024.

[82] California Air Resources Board (ARB). 2013. Clean Car Standards—Pavley, Assembly Bill 1493. Website: https://www.gsweventcenter.com/GSW_RTC_References/2015_0915_CleanAirStandards_Pavley.pdf. Accessed February 9, 2024.

[83] California Air Resources Board (ARB). 2011. Facts About the Advanced Clean Cars Program. November 9.

and hydrogen fuel cell cars. The regulations will also ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California.[84]

ATCM: Transportation Refrigeration Unit

This Airborne Toxic Control Measure (ATCM) applies to Transportation Refrigeration Units (TRUs), which are commonly found on various transported containers, including truck vans, semi-truck trailers, shipping containers, and railcars. TRUs are temperature control systems powered by small (typically 9 to 36 horsepower) diesel internal combustion engines. Despite their small individual size, TRUs are often active in dense congregations around distribution centers, truck stops, and other facilities, resulting in a significantly greater combined loading. This ATCM focuses on the reduction of diesel particulate emissions as a toxic in order to improve air quality around these centers. Additionally, transitioning diesel TRUs to zero-emissions technologies is a priority because of Executive Order N-79-20, which set a goal of 100 percent zero-emission off-road vehicles and equipment in California by 2035.

California Senate Bill 375: Sustainable Communities and Climate Protection Act

SB 375 was signed into law on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40 percent of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

California Senate Bill 1368: Emission Performance Standards

In 2006, the State Legislature adopted SB 1368, which the Governor subsequently signed into law. SB 1368 directs the CPUC to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle, natural gas power plant. Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. The CPUC adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to, publicly owned utilities of 1,100 lb. CO_2 per megawatt-hour (MWh).

California Senate Bill X7-7: Water Conservation Act

This 2009 legislation directed urban retail water suppliers to set individual 2020 per capita water use targets and begin implementing conservation measures to achieve those goals. Meeting this

[84] California Air Resources Board (ARB). 2011. Status of Scoping Plan Recommended Measures.

Statewide goal of 20 percent decrease in demand would have resulted in a reduction of almost 2 million acre-feet in urban water use in 2020.

California Air Resources Board Truck and Bus Regulation

As part of the ARB's Sustainable Freight Strategy, the ARB adopted the Truck and Bus Regulation. The latest amendments to the Truck and Bus Regulation became effective on December 31, 2014. The amended regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses had to meet particulate matter (PM) filter requirements as of January 1, 2012. Lighter and older heavier trucks had to be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

This regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low-use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks.[85]

California Air Resources Board Advanced Clean Trucks Rule

To further advance the State's Sustainable Freight Strategy, the ARB adopted the Advanced Clean Trucks (ACT) Rule in July 2020, which requires manufacturers of vehicle class 2b through vehicle class 8 trucks to begin meeting escalating in-State ZEV sales from 2024 through 2035. By 2035, the ACT Rule will require 55 percent of trucks class 2b through class 3 to be ZEVs, 75 percent of trucks class 4 through class 8 to be ZEVs, and 40 percent of truck tractors to be ZEVs. [86] Complementary to the ACT Rule, and as discussed further below, Executive Order N-79-20 set a goal of 100 percent of all in-State drayage truck sales to be ZEVs by 2035 and 100 percent of all in-State heavy-duty vehicle sales to be ZEVs by 2045.The ARB is also in process of developing an Advanced Clean Fleet (ACF) Rule to accelerate the ACT Rule by requiring 100 percent of all in-State sales to be ZEVs in 2040 for class 2b through class 3 trucks, class 4 through class 8 vocational trucks, and class 7 through class 8 tractor trucks. The ACF Rule also provides a clear timeline for requirements for phasing in in-State ZEV sales targets through 2040.[87]

California Code of Regulations Title 20: Appliance Efficiency Regulations

California Code of Regulations, Title 20: Division 2, Chapter 4, Article 4, Sections 1601-1608: Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. Twenty-three categories of appliances are included in the scope of these regulations. The standards within these regulations apply to appliances that are sold or offered for

[85] California Air Resources Board (ARB). 2015. On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation. Website: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed February 9, 2024.

[86] California Air Resources Board (ARB). 2021. Advanced Clean Trucks Fact Sheet. Website: https://ww2.arb.ca.gov/resources/fact-sheets/advanced-clean-trucks-fact-sheet. Accessed February 9, 2024.

[87] California Air Resources Board (ARB). 2022. Path to Zero-Emission Trucks FAQ. Website: https://ww2.arb.ca.gov/resources/fact-sheets/path-zero-emission-trucks-faq. Accessed February 9, 2024.

sale in California, except those sold wholesale in California for final retail sale outside the State and those designed and sold exclusively for use in recreational vehicles or other mobile equipment.

California Code of Regulations Title 24: Energy Efficiency Standards

Part 6 (Energy Efficiency Standards for Residential and Nonresidential Buildings)

California Code of Regulations Title 24 Part 6 (California's Energy Efficiency Standards for Residential and Nonresidential Buildings) was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy-efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2022 Building Energy Efficiency Standards went into effect on January 1, 2023. [88]

California Code of Regulations Title 24: California Green Building Standards Code

California Code of Regulations Title 24, Part 11, is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went into effect on January 1, 2011. The Code is updated on a regular basis, with the most recent update consisting of the 2022 California Green Building Standards Code (CALGreen) that became effective January 1, 2023. Local jurisdictions are permitted to adopt more stringent requirements, as State law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction ordinances and defers to them as the ruling guidance, provided that they provide a minimum 50 percent diversion requirement. The Code also provides exemptions for areas not served by construction and demolition recycling infrastructure. The State Building Code provides the minimum standard that buildings need to meet in order to be certified for occupancy, which is generally enforced by the local building official.

CALGreen (California Code of Regulations [CCR] Title 24, Part 11) requires:

- **Stormwater pollution prevention.** Prevent the pollution of stormwater runoff from construction activities through compliance with either a local ordinance or best management practices (4.106.2 [residential], 5.106.1 [nonresidential]).
- **Short-term bicycle parking**. If a commercial project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- **Long-term bicycle parking**. For buildings with over 10 tenant-occupants, provide secure bicycle parking for 5 percent of tenant-occupied motorized vehicle parking capacity, with a minimum of one space (5.106.4.1.2).
- **Facilitation for future installation of electric vehicle charging.** Install and clearly identify raceways capable of supporting a 208/240-volt dedicated branch circuit as shown in Table 5.106.5.3.3 (4.106.4 [residential], 5.106.5.3 [nonresidential]).

[88] California Energy Commission (CEC). 2022. Building Energy Efficiency Standards. Website: https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency. Assessed February 9, 2024.

- **Recycling by Occupants**. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling (4.410.2 [residential], 5.410.1 [nonresidential]).
- **Construction waste**. A minimum 65 percent diversion of construction and demolition waste from landfills. (5.408.1, A5.408.3.1 [nonresidential], A5.408.3.1 [residential]). All (100 percent) of trees, stumps, rocks and associated vegetation and soils resulting from land clearing shall be reused or recycled (5.408.3).
- **Wastewater reduction**. Each building shall reduce the generation of wastewater by one of the following methods:
  1. The installation of water-conserving fixtures or
  2. Using nonpotable water systems (5.303.4).
- **Water use savings**. 20 percent mandatory reduction in indoor water use with voluntary goal standards for 30, 35, and 40 percent reductions (5.303.2, A5303.2.3 [nonresidential]).
- **Water meters**. Separate water meters for buildings in excess of 50,000 square feet or any tenant projected to consume more than 1,000 gallons per day (5.303.1).
- **Irrigation efficiency**. Moisture-sensing irrigation systems for larger landscaped areas (5.304.3).
- **Materials pollution control**. Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring and particleboard (4.501 [residential], 5.404 [nonresidential]).
- **Building commissioning**. Mandatory inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies (5.410.2).

California Model Water Efficient Landscape Ordinance

The Model Water Efficient Landscape Ordinance (Ordinance) was required by the AB 1881 Water Conservation Act. The Ordinance required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the Model Ordinance by January 1, 2010. Reductions in water use of 20 percent consistent with the SB X7-7 2020 mandate were required. Former Governor Brown's Drought Executive Order of April 1, 2015 (Executive Order B-29-15) directed DWR to update the Ordinance through expedited regulation. The California Water Commission approved the revised Ordinance on July 15, 2015, which became effective on December 15, 2015. New development projects that include landscaped areas of 500 square feet or more are subject to the Ordinance. The update requires:

- More efficient irrigation systems
- Incentives for graywater usage
- Improvements in on-site stormwater capture
- Limiting the portion of landscapes that can be planted with high water use plants
- Reporting requirements for local agencies.

California Public Utilities Code

The California Public Utilities Commission CPUC) regulates privately owned telecommunication, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. It is the responsibility of the CPUC to (1) assure California utility customers receive safe, reliable utility service at reasonable rates; (2) protect utility customers from fraud; and (3) promote a healthy California economy. The Public Utilities Code, adopted by the Legislature, defines the jurisdiction of the CPUC.

Solid Waste Diversion

The California Integrated Waste Management Act of 1989, as modified by AB 341 (Chesbro, 2011), requires each jurisdiction's source reduction and recycling element to include an implementation schedule that shows: (1) diversion of 25 percent of all solid waste by January 1, 1995, through source reduction, recycling, and composting activities; (2) diversion of 50 percent of all solid waste on and after January 1, 2000; and (3) source reduction, recycling and composting of 75 percent of all solid waste on or after 2020, and annually thereafter. CalRecycle is required to develop strategies, including source reduction, recycling, and composting activities, to achieve the 2020 goal.

CalRecycle published a discussion document, entitled California's New Goal: 75 Percent Recycling, which identified concepts that would assist the State in reaching the 75 percent goal by 2020. Subsequently, in August 2015, CalRecycle released the AB 341 Report to the Legislature, which identifies five priority strategies for achievement of the 75 percent goal: (1) moving organics out of landfills; (2) expanding recycling/manufacturing infrastructure; (3) exploring new approaches for State and local funding of sustainable waste management programs; (4) promoting State procurement of post-consumer recycled content products; and (5) promoting extended producer responsibility.

California Executive Order B-55-18 (GHG Emissions Reduction Targets)

On September 10, 2018, former California Governor Jerry Brown issued Executive Order B-55-18, which established the following GHG emissions reduction target:

By 2045, California shall achieve carbon net neutrality.

Executive Order B-55-18 identifies that the new Statewide goal is to achieve carbon neutrality as soon as possible, and no later than 2045, and to achieve and maintain net neutrality emissions thereafter. This emissions goal is in addition to the existing targets established by Executive Orders S-3-05 and B-30-15 and SB 32, as described in greater detail below. This Executive Order also directs the ARB to work with other State agencies to identify and recommend measures to achieve this goal.

California Executive Order S-01-07: Low Carbon Fuel Standard

The Governor signed Executive Order S 01-07 on January 18, 2007. This order mandated that a Statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the Executive Order established an LCFS and directed the Secretary for Environmental Protection to coordinate the actions of the CEC, the ARB, the University

of California, and other agencies to develop and propose protocols for measuring the "lifecycle carbon intensity" of transportation fuels.

California Executive Order N-79-20

On September 23, 2020, Governor Gavin Newsom issued Executive Order N-79-20, establishing a goal that 100 percent of new passenger cars and trucks sold in California shall be zero-emission by 2035. The Executive Order also set a goal that, where feasible, all operations include zero-emission medium- and heavy-duty trucks by 2045 and drayage trucks by 2035. Off-road vehicles have a goal to transition to 100 percent ZEVs by 2035 where feasible. While in-State sales of EVs will increase through 2045, the State does not currently have legislation which will restrict or preclude the use of fossil-fueled vehicles by or after 2045.

California Executive Order S-13-08

Executive Order S-13-08 states that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy was adopted, which is the ". . . first Statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

California Executive Order B-30-15

On April 29, 2015, the Governor issued an Executive Order to establish a California GHG emissions reduction target of 40 percent below 1990 levels by 2030. The Governor's Executive Order aligns California's GHG reduction targets with those of leading international governments ahead of the United Nations Climate Change Conference in Paris late 2015. The Executive Order sets a new interim Statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050 and directs the ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of MMT CO_2e. The Executive Order also requires the State's climate adaptation plan to be updated every 3 years and for the State to continue its climate change research program, among other provisions. As with Executive Order S-3-05, this Executive Order is not legally enforceable against local governments and the private sector. Legislation that would update AB 32 to make post 2020 targets and requirements a mandate is in process in the State Legislature.

California Senate Bill 97 and the California Environmental Quality Act Guidelines Update

Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. SB 97 states "(a) On or before July 1, 2009, the Office of Planning and Research shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall

certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)."

The 2010 California Environmental Quality Act (CEQA) Amendments first guided public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The 2010 CEQA Amendments fit within the existing CEQA framework by amending existing CEQA Guidelines to reference climate change. The 2010 CEQA Amendments also revised Appendix F of the CEQA Guidelines, which focuses on energy conservation, and the sample environmental checklist in Appendix G was amended to include GHG questions.

The most recent 2018 CEQA Amendments expanded upon the previous guidance by specifying that:

- The lead agency should focus its analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to Statewide, national, or global emissions. The agency's analysis should consider a timeframe that is appropriate for the project. The agency's analysis also must reasonably reflect evolving scientific knowledge and State regulatory schemes.
- In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

A lead agency may use a model or methodology to estimate GHG emissions resulting from a project. The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision-makers to intelligently take into account the project's incremental contribution to climate change. The lead agency must support its selection of a model or methodology with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use.

The 2010 changes to CEQA Guidelines Sections 15126.4 and 15130, which address mitigation measures and cumulative impacts, respectively, remained unchanged by the 2018 CEQA Amendment. The cumulative impact discussion requirement (CEQA Guidelines § 15130) simply directs agencies to analyze GHG emissions in an EIR when a project's incremental contribution of emissions may be cumulatively considerable; however, it does not answer the question of when emissions are cumulatively considerable.

Under CEQA Guidelines Section 15064.4(b), a lead agency should consider the following factors, among others, when determining the significance of impacts from GHG emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

(3) The extent to which the project complies with regulations or requirements adopted to implement a Statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions.

CEQA Guidelines Section 15183.5 continues to permit programmatic GHG analysis and later project-specific tiering, as well as the preparation of Greenhouse Gas Reduction Plans. Compliance with such plans can support a determination that a project's cumulative effect is not cumulatively considerable, according to Section 15183.5(b).

CEQA emphasizes that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impacts analysis (see CEQA Guidelines § 15130(f)).

California Supreme Court Decisions on GHG Analysis

The California Supreme Court has issued two major decisions providing guidance to lead agencies regarding how to address, and assess the significance of, the GHG emissions from proposed project. The first was *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) 62 Cal.4th 204; and the second was *Cleveland National Forest Foundation v. San Diego Association of Governments* (2017) 3 Cal.5th 497. Each of these cases merits an extended discussion, as the City has taken their teachings to heart in formulating its own approach for assessing the GHG impacts of the proposed project.

Center for Biological Diversity v. California Department of Fish and Wildlife

In *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) 62 Cal.4th 204, the California Supreme Court found problems with the GHG analysis performed in an EIR for certain biological permits needed for the proposed Newhall Ranch project (a new city-sized development in the northern part of the Los Angeles Basin). These permits would be issued by the California Department of Fish and Wildlife (CDFW). The Court concluded that, although assessing whether the project was consistent with meeting the Statewide emission reduction goals required by AB 32 was generally a legally permissible approach for assessing the significance of GHG emissions, here CDFW's significance finding for the Newhall Ranch project, though based on such an approach, was not supported by a reasoned explanation based on substantial evidence. In finding the impact less than significant, CDFW had accounted for the fact that, under AB 32, the State of California was required to reduce Statewide GHG emissions by approximately 29 percent from what would have occurred under a hypothetical future scenario in which AB 32 had not been enacted. This counterfactual scenario was called a "business as usual" (BAU) scenario. CDFW reasoned by analogy that, if Newhall Ranch as designed to reduce GHG emissions would reduce its own GHG emissions 29 percent or more below a project-specific BAU scenario, the GHG impacts of the project would be less than significant. Because the project's emissions would be 31 percent below a project-specific BAU scenario, CDFW found the impacts to be less than significant. The Court faulted CDFW's approach as being, in essence, too simplistic:

the administrative record discloses no substantial evidence that Newhall Ranch's *project-level* reduction of 31 percent in comparison to business as usual is consistent with achieving A.B. 32's *statewide* goal of a 29 percent reduction from business as usual . . . Even using the EIR's own significance criterion, the EIR's analysis fails to support its conclusion of no significant impact.

The Scoping Plan set out a statewide reduction goal and a framework for reaching it—a set of broadly drawn regulatory approaches covering all sectors of the California economy and projected, if implemented and followed, to result in a reduction to 1990–level greenhouse gas emissions by the year 2020. The plan expressed the overall level of conservation and efficiency improvements required as, among other measures, a percentage reduction from a hypothetical scenario in which no additional regulatory actions were taken. But the Scoping Plan nowhere related that *statewide* level of reduction effort to the percentage of reduction that would or should be required from *individual projects,* and nothing DFW or Newhall have cited in the administrative record indicates the required percentage reduction from business as usual is the same for an individual project as for the entire state population and economy.

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At bottom, the EIR's deficiency stems from taking a quantitative comparison method developed by the Scoping Plan as a measure of the greenhouse gas emissions reduction effort required by the state as a whole, and attempting to use that method, without consideration of any changes or adjustments, for a purpose very different from its original design: To measure the efficiency and conservation measures incorporated in a specific land use development proposed for a specific location. The EIR simply assumes that the level of effort required in one context, a 29 percent reduction from business as usual statewide, will suffice in the other, a specific land use development. From the information in the administrative record, we cannot say that conclusion is wrong, but neither can we discern the contours of a logical argument that it is right.

(62 Cal.4th at pp. 225-227, italics original.)

In remanding the matter back to CDFW for further work on the EIR, the Court offered CDFW some potential solutions to address this issue, as summarized below (see 62 Cal.4th at pp. 228-231):

Specifically, the Court advised that:

- **Substantiation of Project Reductions from Business as Usual**. A lead agency may use a BAU comparison based on the operative Scoping Plan's methodology if the agency also substantiates the reduction a particular project must achieve to comply with Statewide goals. The Court suggested a lead agency could examine the "data behind the Scoping Plan's business-as-usual model" to determine the necessary project-level reductions from new land use development at the proposed location (62 Cal.4th at p. 229).

- **Compliance with GHG Reduction Plans or Climate Action Plans**. A lead agency may use "geographically specific GHG emission reduction plans" such as climate action plans or greenhouse gas emission reduction plans to provide a basis for the tiering or streamlining of project-level CEQA analysis (62 Cal.4th at p. 230).
- **Compliance with Local Air District Thresholds**. A lead agency may rely on "existing numerical thresholds of significance for greenhouse gas emissions" adopted by, for example, local air districts (Cal.4th at pp. 230-231).
- **Compliance with Regulatory Programs or Performance Based Standards**. A lead agency "might assess consistency with AB 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities. (See Final Statement of Reasons, supra, at p. 64 [greenhouse gas emissions 'may be best analyzed and mitigated at a programmatic level.'].)" To the extent a project's design features comply with or exceed the regulations outlined in the Scoping Plan and adopted by the Air Resources Board or other State agencies, a lead agency could appropriately rely on their use as showing compliance with "performance based standards adopted to fulfill 'a Statewide . . . plan for the reduction or mitigation of greenhouse gas emissions' (CEQA Guidelines § 15064.4(a)(2), (b)(3); see also id., § 15064(h)(3) [determination that impact is not cumulatively considerable may rest on compliance with previously adopted plans or regulations, including 'plans or regulations for the reduction of greenhouse gas emissions']).". (62 Cal.4th at p. 229).

Earlier in the decision, the Court had explained that

> because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself. The challenge for CEQA purposes is to determine whether the impact of the project's emissions of greenhouse gases is *cumulatively* considerable, in the sense that "the incremental effects of [the] individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." (§ 21083, subd. (b)(2); see Guidelines, § 15064, subd. (h)(1).) "With respect to climate change, an individual project's emissions will most likely not have any appreciable impact on the global problem by themselves, but they will contribute to the significant cumulative impact caused by greenhouse gas emissions from other sources around the globe. The question therefore becomes whether the project's incremental addition of greenhouse gases is 'cumulatively considerable' in light of the global problem, and thus significant." (Crockett, *Addressing the Significance of Greenhouse Gas Emissions Under CEQA: California's Search for Regulatory Certainty in an Uncertain World* (July 2011) 4 Golden Gate U. Envtl. L.J. 203, 207–208 ("Addressing the Significance of Greenhouse Gas Emissions").)
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> In short, neither A.B. 32 nor the Scoping Plan establishes regulations implementing, for specific projects, the Legislature's statewide goals for reducing greenhouse gas emissions. Neither constitutes a set of "regulations or requirements adopted to implement" a

> statewide reduction plan within the meaning of Guidelines section 15064.4, subdivision (b)(3). That guideline, however, does not expressly or impliedly prohibit a lead agency from using the A.B. 32 goals themselves to determine whether the project's projected greenhouse gas emissions are significant. As noted by the Natural Resources Agency in its amicus curiae brief, "a discussion of a project's consistency with the State's long-term climate stabilization objectives ... will often be appropriate ... under CEQA," provided the analysis is "tailored ... specifically to a particular project." Indeed, to proceed in this manner is consistent with CEQA's "inherent recognition ... that if a plan is in place to address a cumulative problem, **a new project's incremental addition to the problem will not be 'cumulatively considerable' if it is consistent with the plan and is doing its fair share to achieve the plan's goals."** *(Addressing the Significance of Greenhouse Gas Emissions, supra,* 4 Golden Gate U. Envtl. L.J. at pp. 210–211.) For this reason as well, we conclude DFW's choice to use that criterion does not violate CEQA.
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> (62 Cal.4th at pp. 219, 223, bolded emphasis added.)

As this last discussion makes clear, one conceptual approach for assessing the significance of a project's GHG emissions is to determine whether the project as designed and mitigated "is doing its fair share to achieve" the Statewide reductions required under the most recent, operable Statewide, regional, or local plan for the reduction of GHGs. As explained below, the City has adopted this approach in assessing the operational GHG emissions from the proposed project based on direction received from BAAQMD.

Cleveland National Forest Foundation v. San Diego Association of Governments (SANDAG)

In *Cleveland National Forest Foundation v. San Diego Association of Governments* (2017) 3 Cal.5th 497 (*SANDAG)*, the Supreme Court addressed the extent to which, if any, an EIR for a Regional Transportation Plan (RTP) with a Sustainable Communities Strategy (SCS) must address the proposed project's consistency with the 2050 target set forth in Executive Order S-03-05 (i.e., 80 percent below 1990 levels). The Court held that SANDAG did not abuse its discretion by failing to treat the 2050 GHG emissions target as a threshold of significance. The Court cautioned, however, that its decision applies narrowly to the facts of the case and that the analysis in the challenged EIR should not be used as an example for other lead agencies to follow going forward. Notably, the RTP itself covered a planning period that extended all the way to 2050.

The Court acknowledged the parties' agreement that "the Executive Order lacks the force of a legal mandate binding on SANDAG[.]" (*Id*. at p. 513.) This conclusion was consistent with the Court's earlier decision in *Professional Engineers in California Government v. Schwarzenegger* (2010) 50 Cal.4th 989, 1015, which held the Governor had acted in excess of his executive authority in ordering the furloughing of State employees as a money-saving strategy. In that earlier case, which is not mentioned in the *SANDAG* decision, the Court held that the decision to furlough employees was legislative in character, and thus could only be ordered by the Legislature, and not the Governor, who, under the State constitution, may only exercise executive authority. In *SANDAG*, the Court thus implied recognition that Governors do not have authority to set Statewide legislative policy, particularly for decades into the future. Even so, the Court noted, and did not question, the parties' agreement that "the Executive Order's 2050 emissions reduction target is grounded in sound

science." (3 Cal.5th at p. 513.) Indeed, the Court emphasized that, although "the Executive Order 'is not an adopted GHG reduction plan' and that 'there is no legal requirement to use it as a threshold of significance,'" the 2050 goal nevertheless "expresses the pace and magnitude of reduction efforts that the scientific community believes necessary to stabilize the climate."

This scientific information has important value to policymakers and citizens in considering the emission impacts of a project like SANDAG's regional transportation plan." (*Id*. at p. 515.) Toward the end of the decision, the Court even referred to "the state's 2050 climate goals" as though the 2050 target from Executive Order S-03-05 had some sort of standing under California law. (*Id*. at p. 519.) The Court seemed to reason that, because the Legislature had enacted both AB 32 and SB 32, which followed the downward GHG emissions trajectory recommended in the Executive Order, the Legislature, at some point, was also likely to adopt the 2050 target as well: "SB 32. . . reaffirms California's commitment to being on the forefront of the dramatic greenhouse gas emission reductions needed to stabilize the global climate." (*Id*. at p. 519.) Finally, the Court explained that "planning agencies like SANDAG must ensure that CEQA analysis stays in step with evolving scientific knowledge and state regulatory schemes." (*Ibid*.)

In sum, the Court recognized that the Executive Order did not carry the force of law, but nevertheless considered it to be part of "state climate policy" because the Legislature, in enacting both AB 32 and SB 32, seems to be following both the IPCC recommendations for reducing GHG emissions worldwide and evolving science. Nothing in the decision, however, suggests that all projects, regardless of their buildout period, must address the 2050 target or treat it as a significance threshold.

Regional

Plan Bay Area 2050

As required by SB 375, the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) are jointly tasked with developing an SCS as part of its RTP development. The SCS integrates transportation, land use, and housing for the region to help the State meet its GHG legislative reduction targets. Plan Bay Area 2050 integrates the region's SCS, RTP, and Regional Housing Need Allocation (RHNA) into a single regional plan. Plan Bay Area 2050 contains several goals for the region to attain ranging in focus from housing, economic development, transportation, and environmental resilience.

Bay Area Air Quality Management District

While the ARB is responsible for the regulation of mobile emission sources within the State, local Air Quality Management Districts (AQMDs) and Air Pollution Control Districts (APCDs) are responsible for enforcing standards and regulating stationary sources. The project area is located within the San Francisco Bay Area Air Basin and is subject to the BAAQMD guidelines and regulations. On April 20, 2022, the BAAQMD Board of Directors held a public meeting and adopted the CEQA Thresholds for Evaluating the Significance of Climate Impacts From Land Use Projects and Plans (Guidance).[89]

[89] Bay Area Air Quality Management District (BAAQMD). 2022. CEQA Thresholds for Evaluating the Significance of Climate Impacts

Local

County of Solano

Climate Action Plan

In 2011, Solano County created a Countywide CAP to address climate change locally and reduce GHG emissions within the County. The plan proposes 31 measures and 94 implementing actions that can be taken to reduce countywide emissions and contribution to global climate change. California cities and counties are encouraged and incentivized by the State to adopt CAPs. Solano County's 2008 General Plan required the development of this CAP along with a Sea Level Rise Strategic Program. Because the proposed project site is in unincorporated Solano County, this CAP would apply to the project site if it were developed under a scenario in which the site is not annexed into Suisun City and instead obtained development approvals from Solano County. If the site is annexed, the County CAP would no longer apply.[90] The CAP sets forth the following goals, objectives, and policies relevant to air quality and GHG emissions:

Energy Efficiency Objective

Minimize energy consumption, increase energy efficiencies, and transition to clean renewable energy sources.

E-4 Adopt green building and energy efficiency ordinances to require green building practices, programs and design elements.

E-6 Partner with Solano Economic Development Corporation, Pacific Gas & Electric, and agricultural processing and industrial energy businesses to increase building and process energy efficiency.

Transportation and Land Use Objective

Support a transportation system and land use pattern that promotes carpooling, walking, biking, and using public transit.

Waste Reduction and Recycling Objective

Develop a zero-waste to achieve 75 percent diversion.

City of Suisun City

General Plan

The Suisun City General Plan sets forth the following goals, objectives, and policies relevant to air quality and GHG emissions:

Goal T-3 Manage travel demand in order to reduce up-front and ongoing cost of transportation infrastructure, enhance local mobility, improve air quality, and improve the local quality of life.

from Land Use Projects and Plans. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en. Accessed July 22, 2024.

[90] County of Solano. 2011. Climate Action Plan. Available at: https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=10080. Accessed: July 2024.

Objective T-3 Vehicle Miles Traveled (VMT) by Suisun City residents and to Suisun City destinations should increase at a lower rate than that of population and employment growth.

Policy T-3.1 The City will collaborate with other local, regional, and State agencies, as well as employers to encourage carpooling, carpool parking, flexible work schedules, ride sharing, and other strategies to reduce commute period travel demand.

Policy T-3.2 The City will encourage new developments and public facility investments designed to minimize vehicle trips and vehicle miles traveled.

Policy T-3.6 New developments that would accommodate 100 full or part time employees or more are required to incorporate feasible travel demand management strategies, such as contributions to transit/bike/pedestrian improvements; flex time and telecommuting; a carpool program; parking management, cash out, and pricing; or other measures, as appropriate, to reduce travel demand.

Policy T-3.7 The City will support regional goals to reduce per capita GHG emissions reductions from automobiles and light-duty trucks in a way that also promotes 2035 General Plan objectives.

Goal PHS-4 Reduce Local Greenhouse Gas Emissions and Reduce the Local Effects of Global Climate Change

Objective PHS-4 Reduce the City's contribution to global climate change effects.

Policy PHS-4.2 The City will guide land use change, direct investments, and apply its fees and programs to encourage more GHG-efficient development patterns, as feasible.

Policy PHS-4.3 The City will actively pursue funding for transportation systems that promote public transit, bicycling, and pedestrian travel and other needed infrastructure, building and public realm energy efficiency upgrades, renewable energy production, land use transportation modeling, and other projects to reduce local GHG emissions.

3.6.4 - Thresholds of Significance

According to the CEQA Guidelines' Appendix G Environmental Checklist, to determine whether greenhouse emissions and energy impacts are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

c) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

d) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Significance Criteria

Impact GHG-1: GHG Emissions Generation

Construction

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from on-site and off-site activities. On-site GHG emissions principally consist of exhaust emissions from heavy-duty construction equipment. Off-site GHG emissions would occur from motor vehicle exhaust from material delivery vehicles and construction worker traffic.

Neither Suisun City nor BAAQMD has an adopted threshold of significance for construction-related GHG emissions. Because construction would be temporary and would not result in a permanent increase in emissions, the proposed project would not interfere with the implementation of AB 32, SB 32, or AB 1279.

In Appendix B to its 2022 Air Quality Guidelines (CEQA Thresholds for Evaluating the Significance of Climate Impacts From Land Use Projects and Plans), BAAQMD states that "[t]here is no proposed construction-related climate impact threshold at this time. Greenhouse gas emissions from construction represent a very small portion of a project's lifetime GHG emissions. The proposed thresholds for land use projects are designed to address operational GHG emissions which represent the vast majority of project GHG emissions."

In the absence of a construction-related threshold, the City looks by analogy to BAAQMD's 2022 CEQA Air Quality Guidelines, which state that lead agencies are encouraged to incorporate Best Management Practices (BMPs) for reducing construction-related air pollution. Because these air pollution reduction measures also reduce construction-related GHG emissions, the City believes they should be applied to new development projects as feasible and applicable as means of reducing construction-related GHG emissions.

These construction GHG BMPs recommended by BAAQMD, some of which would be incorporated into the project (see Mitigation Measure [MM] GHG-1), include the following practices:

- Use zero-emission and hybrid-powered equipment to the greatest extent possible, particularly if emissions are occurring near sensitive receptors or located within a BAAQMD-designated Community Air Risk Evaluation (CARE) area of AB 617 community.
- Require all diesel-fueled off-road construction equipment to be equipped with EPA Tier 4 Final compliant engines or better as a condition of contract.
- Require all on-road heavy-duty trucks to be zero emissions or meet the most stringent emissions standards, such as model year (MY) 2024 to 2026, as a condition of contract.

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 2 minutes (A 5-minute limit is required by the State ATCM [Title 13, Sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site and develop an enforceable mechanism to monitor idling time to ensure compliance with this measure.
- Prohibit off-road diesel-powered equipment from being in the "on" position for more than 10 hours per day.
- Use ARB-approved renewable diesel fuel in off-road construction equipment and on-road trucks.
- Use EPA SmartWay certified trucks for deliveries and equipment transport.
- Require that all construction equipment is maintained and properly tuned in accordance with manufacturer's specifications. Equipment should be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- When grid power is available, prohibit portable diesel engines and provide electrical hook ups for electric construction tools, such as saws, drills and compressors, and using electric tools whenever feasible.
- When grid power is not available, use alternative fuels, such as propane or solar electrical power, for generators at construction sites.
- Encourage and provide carpools, shuttle vans, transit passes, and/or secure bicycle parking to construction workers and offer meal options on-site or shuttles to nearby meal destinations for construction employees.
- Reduce electricity use in the construction office by using light emitting diode (LED) bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones.
- Minimize energy use during site preparation by deconstructing existing structures to the greatest extent feasible.
- Recycle or salvage nonhazardous construction and demolition debris, with a goal of recycling at least 15 percent more by weight than the diversion requirement in Title 24.
- Use locally sourced or recycled materials for construction materials (goal of at least 20 percent based on costs for building materials and based on volume for roadway, parking lot, sidewalk and curb materials). Wood products used should be certified through a sustainable forestry program.
- Use low carbon concrete, minimize the amount of concrete used and produce concrete on-site if it is more efficient and lower emitting than transporting ready-mix.
- Develop a plan to efficiently use water for adequate dust control since substantial amounts of energy can be consumed during the pumping of water.

- Include all requirements in applicable bid documents, purchase orders, and contracts, with successful contractors demonstrating the ability to supply the compliant on- or off-road construction equipment for use prior to any ground-disturbing and construction activities.

The incorporation of feasible and applicable GHG-reducing construction BMPs serves herein as the basis for determining whether or not project construction activities incorporate mitigation strategies that constitute the project's "fair share" of construction-related GHG emission reductions consistent with the legislative reduction targets codified by SB 32 and AB 1279 and the State's long-term climate goal of carbon neutrality by 2045. (See *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th 204, 219-223 [explaining "fair share" approach to assessing impact significance].) Under this approach, the proposed project would be considered to result in less than cumulatively considerable construction-related GHG emissions if project construction activities incorporate feasible and applicable GHG-reducing construction BMPs recommended by BAAQMD.

Operations of Land Use Projects

For operational GHG emissions, BAAQMD's 2022 significance thresholds for land use projects are listed below. Note that proposed project GHG emissions are quantified below for informational purposes only.

Per BAAQMD-recommended 2022 thresholds of significance, if a land use development project cannot demonstrate consistency with Criterion A or Criterion B (both set forth below), that project would result in a potentially significant impact related to GHG emissions.

A. Projects must include, at a minimum, the following project design elements.
    1. Buildings:
        a) The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
        b) The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
    2. Transportation:
        a) Achieve a reduction in project-generated VMT below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted SB 743 VMT target:
            i. Residential projects: 15 percent below the existing VMT per capita.
            ii. Office projects: 15 percent below the existing VMT per employee.
            iii. Retail projects: no net increase in existing VMT.
        b) Achieve compliance with EV charging requirements in the most recently adopted version of CALGreen Tier 2.

B. Projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b)

In regard to the VMT threshold for industrial projects, one option is to follow the approach that BAAQMD used for retail projects: to assess whether industrial projects will result in a net increase in existing VMT. A second option is to follow BAAQMD's approach with respect to residential projects: to assess whether industrial projects will result in 15 percent below the existing regional VMT per capita. A third option is to follow BAAQMD's approach with respect to office projects: to assess whether industrial projects will result in VMT 15 percent below the existing VMT per employee. Because industrial projects more closely resemble office projects versus residential projects, and because the BAAQMD approach for office projects is more conservative than the approach for retail projects, this analysis will follow BAAQMD's approach for office projects—15 percent below the existing VMT per employee—as the threshold for assessing VMT impact for industrial uses for analyzing consistency with Criterion A.

Because the BAAQMD threshold for office projects focuses on only one type of vehicle trip—employee trips—the VMT analysis also focuses on employee trips only. As described in the Transportation analysis in Section 3 of this DEIR, a VMT analysis for the proposed project was conducted in accordance with the recommendations in the Suisun City SB 743 Implementation Summary of Findings and Recommendations for VMT-Based CEQA Thresholds technical memorandum. The City of Fairfield Travel Forecast Model was used to estimate VMT for the proposed project.

Within the City of Fairfield model, the proposed project site initially had an estimated daily trip generation of 9,110 trips. As such, a Fratar process was implemented to adjust the model-generated daily trips of the project to be more aligned with the projected number of daily trips for the proposed project per the Institute of Transportation Engineers (ITE) trip rate. With the Fratar adjustments, the VMT per employee was calculated on a consistent number of vehicle trips based on an ITE trip generation projection and the project trip distribution and trip lengths from the City of Fairfield model.

Exclusion of Heavy Truck Trips

According to the City's Guidelines, heavy truck trips should be excluded in CEQA SB 743 VMT analysis. Consequently, the target total daily estimate project trips of 3,726 for the Fratar process was adjusted to 3,253, which deducted 473 daily truck trips. The results of the VMT analysis indicated that the VMT per employee was 14.5 during the base year 2020. The VMT per employee for the year 2035 was 13.6.

The average 2020 (Base Year) VMT per employee for home-based work trips is 14.8 miles; 15 percent less than this figure would result in a VMT threshold of 12.6. For 2035, the average VMT per employee is projected to be 13.7, so the threshold of 15 percent less that this figure would be 11.7 VMT per employee.

Operations of Stationary Sources

The BAAQMD's CEQA Guidelines requires a quantitative evaluation of GHG emissions from new stationary sources through a comparison with the bright-line threshold of 10,000 MT CO_2e per year. This threshold of significance is applicable to only the proposed stationary sources of the project.

Impact GHG-2: GHG Emissions Reduction Plan Consistency

While the above methodology is employed under Impact GHG-1, which focuses on the proposed project's direct and indirect generation of GHG emissions, Impact GHG-2 methodology for determining whether a potentially significant impact would occur focuses on the proposed project's consistency with the applicable plan adopted for the purpose of reducing GHG emissions. Consistent with the BAAQMD's CEQA Air Quality Guidelines, for this impact to be less than significant, the proposed project must demonstrate consistency with the applicable GHG emissions reduction plan. As such, the proposed project would be determined to conflict with an applicable GHG emissions reduction plan if it would not adhere to applicable GHG reduction measures included in the City's General Plan, the Solano County CAP, MTC/ABAG Plan Bay Area 2050, and the ARB's 2022 Scoping Plan.

Impact GHG-3: Wasteful, Inefficient, or Unnecessary Energy Consumption

The methodology employed under Impact GHG-3, which focuses on determining whether the proposed project would result in the wasteful, inefficient, or unnecessary consumption of energy resources, follows the guidance provided in Appendix F of the CEQA Guidelines. A significant impact would occur if the proposed project would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. The proposed project would be determined to result in wasteful, inefficient, or unnecessary consumption of energy resources based on project construction activity and anticipated operational activity.

Impact GHG-4: Renewable Energy and Energy Efficiency Plan Consistency

Similar to the impact discussion under Impact GHG-2, this impact discussion focuses on project consistency with a local plan or policy adopted for the purpose of improving energy efficiency or reliance on renewable energy sources. The impact discussion under Impact GHG-2 differs from this impact discussion in that Impact GHG-2 explores project consistency with relevant policies intended to reduce GHG emissions, which often encompass energy efficiency and renewable energy measures. Impact GHG-4, by contrast, focuses on project consistency with relevant policies intended to improve energy efficiency and encourage the use of renewable energy sources. Therefore, while both Impact GHG-2 and Impact GHG-4 will discuss project consistency with the City's General Plan, Impact GHG-4 focuses solely on policies applicable to energy consumption. As such, the proposed project would be determined to conflict with the applicable energy efficiency or renewable energy plan if it would not adhere to applicable energy consumption related measures included in the City's General Plan and Solano County CAP.

Approach to the Analysis

The California Emissions Estimator Model (CalEEMod) Version 2022.1 was developed in collaboration with the South Coast Air Quality Management District and other air districts throughout the State. CalEEMod is designed as a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential GHG emissions associated with construction and operation from various land uses (see also Appendix B2 [GHG Report], Section 4.1.1.2). The modeling used to support this analysis follows BAAQMD guidance where applicable from its CEQA Air Quality Guidelines.

At the time of this analysis, construction of the proposed project was anticipated to begin in 2025 and be completed 18 months later. In general, this analysis also includes estimated project trip generation and daily employee VMT provided in Section 3.12, Transportation. As the proposed project is a speculative warehouse development which could accommodate cold storage and accompanying TRUs, this analysis considers two project scenarios: a cold warehouse project scenario and a dry warehouse project scenario. Where appropriate, both project scenarios are presented herein to determine project impacts.

Construction-Related GHG Emissions

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from both on-site and off-site activities. On-site emissions consist of exhaust emissions from the activity levels of heavy-duty construction equipment and motor vehicle operation. Off-site emissions result from motor vehicle exhaust from hauling and vendor trucks and worker traffic.

Construction emissions are generally calculated as the product of an activity factor and an emission factor. The activity factor for construction equipment is a measure of how active a piece of equipment is and can be represented as the amount of material processed, elapsed time that a piece of equipment is in operation, horsepower of a piece of equipment used, or the amount of fuel consumed in a given amount of time. The emission factor relates the process activity to the amount of pollutant emitted. Examples of emission factors include grams of emissions per VMT and grams of emissions per horsepower-hour. The operation of a piece of equipment is tempered by its load factor, which is the average power of a given piece of equipment while in operation compared with its maximum rated horsepower. A load factor of 1.0 indicates that a piece of equipment continually operates at its maximum operating capacity. This analysis uses the CalEEMod default load factors for off-road equipment.

Operation-Related GHG Emissions

The operational-phase emissions are based on the development of the proposed industrial park. The modeling accounts for the average daily vehicle and truck trips and VMT, energy usage, water demand, and wastewater and solid waste generation. For purposes of this analysis, hours of operation for the proposed project are 24 hours per day, 7 days per week.

Transportation

On-road transportation sources are based on passenger vehicle and truck trip generation rates and VMT contained in a January 17, 2024, report prepared by Fehr & Peers entitled, Big Data Passenger Vehicle and Light-Duty Truck Trip Lengths and Project Generated VMT Comparison Assessment for the Suisun Logistics Center Project in Suisun City, California. According to the VMT information provided therein, the proposed project would result in an average one-way employee vehicle trip length of 13.2 miles. As this VMT would represent all travel to and from the project site for employees, an average of 13.2 miles per vehicle trip was utilized in the modeling. However, as provided in the January 2024 report by Fehr & Peers, the proposed project would also generate truck traffic for deliveries and shipments. Based on regional goods movement patterns within the Fairfield/Suisun City area, the weighted average length of heavy-duty truck trips that would be generated by the project is approximately 39.5 miles (see Appendix B2 [GHG Report], Table 4-6).

CalEEMod, Version 2022.1 was used to quantify passenger vehicle emissions using vehicle emission rates based on vehicle emissions data obtained from the ARB's EMFAC2021web database and adjusted based on methodology provided in Appendix B of the CalEEMod User's Guide.[91] The passenger vehicle trips were assumed to be distributed among the light-duty auto (LDA), light-duty truck 1 (LDT1), light-duty truck 2 (LDT2), and medium-duty vehicle (MDV) EMFAC 2021 vehicle categories proportional to that respective vehicle category's share between those four passenger vehicle categories within CalEEMod for Solano County.

Truck and TRU emissions were calculated utilizing the ARB's EMFAC2021 and OFFROAD2021 web databases, respectively, and adjusted based on methodology provided in Appendix B of the CalEEMod User's Guide. Please refer to the fleet mix adjustment calculations contained in Appendix B of the CalEEMod User's Guide for more details. The same databases were used for the forklifts and yard trucks used for on-site operations of the project.

Other Operational Emissions

Solid Waste Disposal

Indirect emissions from waste generation are based on the CalEEMod default solid waste generation rates, which are based on data from the California Department of Resources, Recycling, and Recovery (CalRecycle).

Water/Wastewater

GHG emissions from this sector are associated with the embodied energy used to supply water, treat water, distribute water, and then treat wastewater and fugitive GHG emissions from wastewater treatment. Indoor water consumption is based on CalEEMod default indoor water use rates.

Area Sources

Area sources are based on the CalEEMod defaults for use of landscaping equipment. Other categories of area sources do not generate GHG emissions or consume energy.

Energy

Emissions from this sector are from electricity use for lighting and power needs at the proposed buildings.

Stationary Sources

Stationary sources are based on the anticipated stationary source equipment included in the proposed project. Given the type and size of the proposed project, the project applicant anticipates the use of a backup diesel generator and diesel-fueled fire pump for each of the six proposed buildings; however, the exact specifications for this equipment are unknown at the time of this analysis. To account for potential operational emissions generated from the emergency and non-emergency use of this equipment, the proposed project was assumed to include six backup diesel generators and six diesel-fueled fire pumps, each assumed to be rated at 50 horsepower and operate

[91] California Air Pollution Control Officers Association (CAPCOA). 2017. California Emissions Estimator Model (CalEEMod). Version 2020.4.0 Prepared by: BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts.

for maintenance an estimated 150 hours per year, consistent with the BAAQMD's CEQA Air Quality Guidelines. All stationary sources are subject to BAAQMD permitting limits and requirements.

For additional detail on resources used in this analysis, see Appendix B2 (GHG Report) of this EIR, Section 4.1.1.2.

3.6.5 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Greenhouse Gas Emissions

Impact GHG-1:	**The proposed project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.**

Impact Analysis

Both construction and operational activities have the potential to generate GHG emissions. The proposed project would generate GHG emissions during temporary (short-term) construction activities such as site grading, operation of construction equipment, operation of on-site heavy-duty construction vehicles, hauling of materials to and from the project site, asphalt paving, and construction worker vehicle trips. On-site construction activities would vary depending on the level of construction activity.

Long-term, operational GHG emissions would result from project-generated vehicular traffic, operation of any landscaping equipment, off-site generation of electrical power over the life of the proposed project, the energy required to convey water to and wastewater from the project site, the emissions associated with the hauling and disposal of solid waste from the project site, any fugitive refrigerants from air conditioning or refrigerators, and the operation of any proposed stationary sources such as backup generators or fire pumps.

Global climate change is not confined to a particular project area and is generally accepted as the consequence of global industrialization over the last 200 years. A typical project, even a very large one, does not generate enough GHG emissions on its own to influence global climate change significantly; hence, the issue of global climate change is, by definition, a cumulative environmental impact. Therefore, this section measures the proposed project's contribution to the cumulative environmental impact. The following is a discussion of the project's contribution to GHG emissions during both the construction and operation phases.

Construction

As previously discussed, neither the City nor BAAQMD has thresholds of significance for construction-related GHG emissions; therefore, the incorporation of feasible and applicable GHG-reducing construction BMPs, including those listed above, serves herein as the basis for whether project construction would contribute its "fair share" of GHG emission reductions consistent with the legislative reduction targets codified by SB 32 and the State's long-term climate goal of carbon neutrality by 2045. As such, the proposed project would be considered to result in a potentially

significant impact if project construction would not incorporate feasible and applicable GHG-reducing construction BMPs including those recommended by BAAQMD. However, the proposed project would incorporate several feasible and applicable BAAQMD-recommended air pollution-reducing construction BMPs, listed above in the Significance Criteria section, as these BMPs will also reduce construction-related GHG impacts. The incorporated BMPs are set forth below in Mitigation Measure GHG-1.

Project-related construction emissions assuming incorporation of feasible and applicable BAAQMD-recommended GHG-reducing construction BMPs are shown in Table 3.6-3. This analysis conservatively assumes that construction would start in 2025 and accounts for the vegetation changes that would occur at the project site. As vehicle and equipment fuel efficiencies and emission control standards continue to incrementally improve with each year, project construction emissions are likely to decrease nominally from what is shown in Table 3.6-3 should the construction schedule move to later years. Therefore, the construction GHG emissions contained in Table 3.6-3 represent a conservative assessment of project construction emissions. These emission estimates are provided for informational purposes.

Table 3.6-3: Construction Greenhouse Gas Emissions

Period/Source	MT CO_2e
Year 2025	2,960
Year 2026	979
Vegetation Changes	55
Total Construction Emissions	**3,994**
Emissions Amortized Over 30 Years[1]	**133**

Notes:
MT CO_2e = metric tons of carbon dioxide equivalent
[1] Construction GHG emissions are amortized over the anticipated 30-year lifetime of the project.
Source: CalEEMod Output; see also Appendix B2 (GHG report), Table 4-5.

Because the proposed project would incorporate GHG-reducing construction BMPs for construction impacts, including the use of construction vehicles and equipment equipped with EPA Tier 4 Final compliant engines or better as a condition of contract and the recycling and reuse of construction and demolition waste, any potential impact associated with construction-generated GHG emissions would be less than significant with the implementation of feasible and applicable BAAQMD-recommended GHG-reducing construction BMPs, included herein as MM GHG-1.

As project construction would constitute a small proportion of overall project GHG emissions, and with the incorporation of feasible and applicable GHG-reducing construction BMPs, the proposed project is considered to contribute its “fair share” of GHG emission reductions during construction consistent with the legislative reduction targets codified by SB 32 and AB 1279 and the State’s long-

term climate goal of carbon neutrality by 2045. Therefore, with the implementation of MM GHG-1, project construction impacts would be less than significant.

Operation

The proposed project would contribute to global climate change through direct and indirect emissions of GHG from mobile sources (e.g., passenger vehicles, trucks), energy (e.g., purchased electricity), water use and wastewater generation, and solid waste generation. All modeling parameters utilized in the Air Quality analysis are also utilized for this GHG analysis, including but not limited to trip generation rates, trip distances, building sizes and operations, energy consumption, water consumption, and waste generation. Please refer to Appendix B2 (GHG Report) for modeling results and detailed calculations.

The unmitigated GHG emissions associated with full operation of the proposed project, starting at operational year 2026, are shown in Table 3.6-4 for both the dry and cold storage scenarios as it is not yet undetermined whether cold storage would be a part of the proposed project. It should be noted that these emission estimates are conservative as the modeling does not incorporate emission reductions that would be achieved through air quality mitigation included in Section 3.2 of this EIR. In Table 3.6-4, Area emissions include the standard use of gasoline powered landscaping equipment; Buildings emissions include the use of electricity; On-Road Mobile Vehicles emissions include trucks, passenger vehicles, and TRUs (in the cold storage scenario); On-site Mobile Equipment emissions include yard trucks and standardly used diesel-powered forklifts; and Stationary Equipment emissions include emergency generators and fire pumps. For more detail, refer to Appendix B2 (GHG Report), Table 4-13. The land use-based emission estimates are included for informational purposes. The stationary source emissions are below the BAAQMD's threshold of significance for stationary sources.

Table 3.6-4: Unmitigated Operational GHG Emissions

Source	Dry Storage Scenario	Cold Storage Scenario
	MT CO_2e/year	
Area	30	30
Buildings	701	1,435
On-road Mobile Vehicles	19,463	21,994
On-site Mobile Equipment	1,501	1,501
Water	727	727
Solid Waste	604	604
Refrigerants	0	5,095
Stationary Equipment	48	48
Totals	**23,074**	**31,434**

Source	Dry Storage Scenario	Cold Storage Scenario
	MT CO_2e/year	

Notes:
MT CO_2e = metric tons of carbon dioxide equivalent
* Operational natural gas usage rates are expected to be zero as it is omitted as part of project design.
* The installation of light-duty electric vehicle charging stations is assumed as it is part of project design.
Refrigerant emissions were scaled down to reflect the maximum global warming potential (GWP) allowed under SB-1206 (2022) which prohibits the sale of refrigerants with GWP greater than 2,200 beginning in 2025.
Source: CalEEMod; see also Appendix B2 (GHG Report), Table 4-13.

Implementation of some of the air quality mitigation measures would also result in changes in GHG emissions by reducing the consumption of fossil fuel and increasing the electricity used during Project operations. These air quality mitigation measures considered in the mitigated scenario, presented in Table 3.6-5, include MM AIR-2e, MM AIR-2f, MM AIR-2h, and MM AIR-2i. As shown in Table 3.6-5, under both the dry and cold storage scenarios, GHG emissions are noticeably reduced.

Table 3.6-5: Mitigated Operational GHG Emissions

Source	Dry Storage Scenario	Cold Storage Scenario
	MT CO_2e/year	
Area	1	1
Buildings	701	1,435
On-road Mobile Vehicles	19,237	20,029
On-site Mobile Equipment	853	853
Water	727	727
Solid Waste	604	604
Refrigerants	0	5,095
Stationary Equipment	48	48
Totals	**22,177**	**28,897**

Notes:
MT CO_2e = metric tons of carbon dioxide equivalent
- Operational natural gas usage rates are expected to be zero as it is omitted as part of project design.
- The installation of light-duty electric vehicle charging stations is assumed as it is part of project design.
- Refrigerant emissions were scaled down to reflect the maximum global warming potential (GWP) allowed under SB-1206 (2022) which prohibits the sale of refrigerants with GWP greater than 2,200 beginning in 2025.

Source: CalEEMod; see also Appendix B2 (GHG Report), Table 4-18.

As previously discussed, BAAQMD's 2022 GHG significance thresholds, as adapted by the City, represent a method for determining whether the proposed project would be cumulatively considerable or whether the proposed project contributes to solving the cumulative problem of climate change, taking into consideration the State's long-term climate goal of carbon neutrality by 2045. As such, BAAQMD's 2022 GHG significance thresholds reflect California's current short-term

climate goal of reducing Statewide emissions by 40 percent below 1990 levels by 2030 as well as California's long-term climate goal of achieving carbon neutrality by 2045. Therefore, the proposed project is analyzed herein against BAAQMD's 2022 GHG significance thresholds (as adapted) to determine whether potentially significant impacts related to GHG emissions would occur.

As explained earlier, BAAQMD's 2022 GHG significance thresholds identify two pathways for determining consistency with the State's climate goals: demonstrating project consistency with a qualified GHG reduction strategy under CEQA Section 15183.5(b) or ensuring that the proposed project incorporates design and operational features that support the region and State's adoption of EVs, facilitate reductions in project-generated VMT, and preclude the use of legacy emission sources such as natural gas.

Criterion A

Natural Gas Prohibition Provision

The first provision requires that the proposed project not include natural gas plumbing and instead rely on electricity as the primary building energy source. The proposed project would not include the use of natural gas appliances or the installation of natural gas plumbing (see Section 2.2.6).

Here, the project applicant is voluntarily foregoing the use of natural gas. Emission estimates contained in the above tables reflect the proposed project's prohibition of natural gas and, accordingly, present the results of emissions associated with electricity usage required to replace natural gas. Thus, the proposed project would be compliant with this provision of Criterion A.

Wasteful, Inefficient, or Unnecessary Electricity Consumption Provision

The second provision of BAAQMD's proposed 2022 GHG significance thresholds requires that electricity consumption would not be considered wasteful, inefficient, or unnecessary. As discussed in greater detail under Impact GHG-3, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. Notably, this provision specifically refers to electricity consumption as opposed to the consumption of general energy resources. The proposed project would be required to be constructed compliant with the California Building Code Title 24 requirements, which requires that new buildings be designed to accommodate future rooftop solar systems among other energy conservation and energy efficiency standards. As such, the proposed project would be designed to accommodate the future use of on-site renewable energy and would not by design preclude the use of EVs or renewable energy sources. Moreover, natural gas would not be used during project operation, thereby reducing project dependence on fossil fuels and removing legacy GHG emission sources in contributing to achieving the State's long-term climate goal of carbon neutrality by 2045.

Nonetheless, the proposed project, according to its land use type, could consume up to an estimated 27,873 MWh per year under the dry storage scenario and 56,761 MWh electricity per year under the cold storage scenario during operation (see Appendix B2 [GHG Report], Table 4-11), as discussed in greater detail under Impact GHG-3, with proposed buildings constructed to at least the minimum energy efficiency standards contained in the California Building Code. Moreover, until California's electricity grid is 100 percent generated from renewable and carbon-free sources in 2045, the

proposed project's electricity consumption would result in additional demand of fossil fuel resources for electricity generation. Such fossil fuel usage would be substantially reduced by MMs GHG-1 and MM AIR-2e, MM AIR-2f, MM AIR-2h, and MM AIR-2i, which would require the use of numerous construction BMPs to reduce GHG emissions, require that each loading dock be outfitted with external power sources and connectors for TRUs, and require that all forklifts operating on the project be electric. Based on these measures, the proposed project would not result in building electricity consumption that is wasteful, inefficient, or unnecessary.

Electric Vehicle Charging Infrastructure Provision

The third provision of BAAQMD's proposed 2022 GHG significance thresholds requires that the proposed project achieve compliance with the EV charging infrastructure standards contained in the Tier 2 requirements of CALGreen. As described in Chapter 2 Project Description, Section 2.2.9, the proposed project would include California Green Building Code compliant EV charging stations. In addition to Tier 2 EV charging requirements for passenger vehicles, the project would also be required to include infrastructure at loading spaces to facilitate future installation of electric medium-duty and heavy-duty electric vehicle supply equipment (EVSE) in accordance with CALGreen Section 5.106.5.4. Overall, the proposed project would be compliant with the BAAQMD's provision on the compliance with CALGreen Tier 2 EV charging requirements.

Vehicle Miles Traveled Provision

Lastly, the fourth provision of BAAQMD's proposed 2022 GHG significance thresholds requires a 15 percent decrease below existing VMT per capita for residential projects, a 15 percent decrease below existing VMT per employee for office projects, and a no net increase in existing VMT for retail projects. As previously stated, this analysis will conservatively follow BAAQMD's approach for office projects—15 percent below the existing VMT per employee—as the starting point for assessing VMT for industrial uses. Because the BAAQMD threshold for office projects focuses on only one type of vehicle trip—employee trips—the VMT analysis also focuses on employee trips only.

As described in the Transportation analysis in Section 3, a VMT analysis for the proposed project was conducted in accordance with the recommendations in the Suisun City SB 743 Implementation Summary of Findings and Recommendations for VMT-Based CEQAS Thresholds technical memorandum. The City of Fairfield Travel Forecast Model was used to estimate VMT for the proposed project.

Within the City of Fairfield model, the proposed project site initially had an estimated daily trip generation of 9,110 trips. As such, a Fratar process was implemented to adjust the model-generated daily trips of the project to be more aligned with the projected number of daily trips for the proposed project per the ITE trip rate. With the Fratar adjustments, the VMT per employee was calculated on a consistent number of vehicle trips based on an ITE trip generation projection and the project trip distribution and trip lengths from the City of Fairfield model.

Exclusion of Heavy Truck Trips

According to the City's Guidelines, heavy truck trips should be excluded in CEQA SB743 VMT analysis. Consequently, the target total daily estimate project trips of 3,726 for the Fratar process was adjusted to 3,253, which deducted 473 daily truck trips. The results of the VMT analysis indicated

that the VMT per employee was 14.5 during the base year 2020. The VMT per employee for the year 2035 was 13.6.

The average 2020 (Base Year) VMT per employee for home-based work trips is 14.8 miles; 15 percent less than this figure would result in a VMT threshold of 12.6. For 2035 (Year with the Proposed Project), the average VMT per employee is projected to be 13.7, so the threshold of 15 percent less than this figure would be 11.7 VMT per employee. The proposed project's VMT per employee would not be less than the threshold of 15 percent below the citywide average, thus the proposed project has a potentially significant VMT impact based on the City's VMT Guidelines and threshold criteria.

VMT reduction measures were identified in MM TRANS-2a and would have the potential to reduce VMT by 5.6 percent, reducing the proposed project's VMT to 13.7 VMT per employee for 2020 and 12.8 VMT per employee for 2035. These reduced values are still greater than the City's thresholds of 12.6 and 11.7 VMT per employee for 2020 and 2035, respectively, and therefore VMT impacts were found to be significant and unavoidable.

Accordingly, the proposed project would be inconsistent with the final design element in Criteria A of the BAAQMD thresholds.

Criterion A Conclusion

Considering the above assessment, the project operation would be inconsistent with BAAQMD's Criterion A and, therefore, with BAAQMD's proposed 2022 GHG significance thresholds as adapted to this industrial project by the City pursuant to its discretion as CEQA lead agency. As such, with project design features and mitigation, the project operation would have a significant impact related to GHG emissions.

Criterion B

As previously mentioned, the City does not have an adopted CAP that meets the requirements to be considered a qualified GHG reduction strategy capable of being tiered from under CEQA Guidelines Section 15183.5(b). Therefore, the proposed project is not capable of satisfying Criterion B from the above 2022 GHG significance thresholds and must therefore demonstrate consistency with the provisions of Criterion A to determine a less than significant impact related to GHG emissions, which it does not.

Conclusion

The proposed project would generate GHG emissions during construction and operation. BAAQMD and the City do not have an emissions threshold for determining potentially significant impacts related to construction GHG emissions; therefore, BAAQMD's recommended GHG-reducing BMPs were utilized as the basis for determining the proposed project's construction-related impact. The proposed project would include feasible and applicable GHG-reducing BMPs during construction, as documented in MM GHG-1.

As it relates to operational-related GHG emissions, the proposed project is inconsistent with the VMT design element of BAAQMD's GHG significance thresholds, specifically Criterion A. As a result, the proposed project's operational GHG emissions impacts could have potentially significant impacts. MM GHG-1 would reduce construction-related GHG emissions; however, it would not reduce operational-related GHG emissions. MM TRANS-2a would be implemented to reduce VMT; however, impacts would not be reduced to a less than significant impact. Therefore, impacts would remain significant and unavoidable even after implementation of all feasible mitigation measures.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement MM GHG-1:

MM GHG-1 Prior to the issuance of any grading permits, the project applicant shall provide the Suisun City Planning Department with documentation (e.g., site plans) demonstrating project construction will include the following feasible and applicable construction Best Management Practices (BMPs):

- Require all diesel-fueled off-road construction equipment greater than 50 horsepower be equipped with United States Environmental Protection Agency (EPA) Tier 4 Final compliant engines or better as a condition of contract. (See Mitigation Measure [MM] AIR-2a).
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 2 minutes (A 5-minute limit is required by the State Airborne Toxics Control Measure [Title 13, Sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site and develop an enforceable mechanism to monitor idling time to ensure compliance with this measure. (See MM AIR-2c).
- Prohibit off-road diesel-powered equipment from being in the "on" position for more than 10 hours per day.
- Require that all construction equipment is maintained and properly tuned in accordance with manufacturer's specifications. Equipment should be checked by a certified mechanic and determined to be running in proper condition prior to operation. (See MM AIR-2c).
- Recycle or salvage nonhazardous construction and demolition debris, with a goal of recycling at least 15 percent more by weight than the diversion requirement in Title 24.
- Use low carbon concrete, minimize the amount of concrete used and produce concrete on-site if it is more efficient and lower emitting than transporting ready-mix.
- Develop a plan to efficiently use water for adequate dust control since substantial amounts of energy can be consumed during the pumping of water.

Implement MM TRANS-2a.

Level of Significance After Mitigation

Significant unavoidable impact.

Conflict with Plan, Policy, or Regulation that Reduces Emissions

Impact GHG-2:	**The proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.**

Impact Analysis

The following discusses project consistency with applicable plans adopted to reduce GHG emissions, including the City's General Plan, the Solano County CAP, MTC/ABAG Plan Bay Area 2050/Sustainable Communities Strategies, and the ARB's 2017 and 2022 Scoping Plans.

California Air Resources Board Scoping Plan

On December 15, 2022, nearly two years after the January 2021 publication of the Notice of Preparation (NOP) for the proposed project, the ARB adopted an updated 2022 Scoping Plan. The 2022 Scoping Plan reflects the addition of climate legislation and executive orders issued since the adoption of the 2017 Scoping Plan.

Appendix D of the 2022 Scoping Plan states that a development project can determine consistency with the Scoping Plan by using significance criteria from an air district or other lead agencies if the criteria align with the State's current GHG emission reduction goals. Because the BAAQMD's current GHG significance criteria were created to determine a project's "fair share" of what is necessary to meet California's 2045 climate goals, the criteria are sufficient to determine consistency with the 2022 Scoping Plan. Based on evaluation in Section 5, because the proposed project is consistent with the BAAQMD's CEQA significance criteria for building and transportation design features (as adapted by the City to apply to this industrial project), the proposed project would also be consistent with the 2022 Scoping Plan.

The proposed project would be consistent with key State plans and regulatory requirements referenced in the 2022 Scoping Plan Update designed to reduce Statewide emissions. According to the 2022 Scoping Plan Update, reductions needed to achieve the 2045 target are expected to be achieved by decarbonizing the electricity sector, greatly increasing the fuel economy of vehicles and the number of zero-emission or hybrid vehicles, reducing the rate of growth in VMT, supporting high speed rail and other alternative transportation options, and increasing the use of high efficiency appliances, water heaters, and heating, ventilation, and air conditioning (HVAC) systems. The proposed project would not impede with these potential reduction strategies identified by the ARB. The proposed project would also benefit from Statewide and utility-provider efforts toward increasing the portion of electricity generated by renewable resources, increasing fuel economy standards for vehicles, and reducing carbon content of fuels. The proposed project would utilize energy efficient appliances and equipment, as required by Title 24, and provide electric vehicle charging infrastructure to support the current and future use of electric and hybrid-electric vehicles

for employee travel. For these reasons, the proposed project would be consistent with the objectives of the 2022 Scoping Plan Update.

Transportation Sector

Trucks

In general, the State strategy for the transportation sector for medium- and heavy-duty trucks focuses on making trucks more efficient and expediting truck turnover. Emissions associated with heavy-duty trucks involved in goods movements are generally controlled on the technology side and through fleet turnover of older trucks and engines to newer and cleaner trucks and engines. The following State strategies reduce GHG emissions from medium- and heavy-duty trucks:

- ARB's Mobile Source Strategy focuses on reducing GHGs by transitioning to zero and low emission vehicles and from medium-duty and heavy-duty trucks.[92]
- ARB's Sustainable Freight Action Plan establishes a goal to improve freight efficiency by 25 percent by 2030, deploy over 100,000 freight vehicles and equipment capable of zero-emission operation, and maximize both zero and near zero-emission freight vehicles and equipment powered by renewable energy by 2030.[93]
- ARB's Truck and Bus Regulation requires diesel-fueled trucks and buses that operate in California to be upgraded to reduce emissions.
- ARB's Emissions Reduction Plan for Ports and Goods Movement (Goods Movement Plan) in California focuses on reducing heavy-duty truck-related emissions and the establishment of emissions standards for trucks, fleet turnover, truck retrofits, and restriction on truck idling.[94] While the focus of the Goods Movement Plan is to reduce criteria air pollutant and air toxic emissions, the strategies to reduce these pollutants would also generally have a beneficial effect in reducing GHG emissions.

The proposed project would be subject to the above trucking and freight regulations. Thus, these strategies would contribute to controlling heavy-duty truck GHG emissions associated with the proposed project. The proposed project would not conflict with or inhibit these Statewide strategies. Any on-site trucks would be required to comply with ARB's Heavy-Duty (Tractor-Trailer) GHG Regulation, which requires SmartWay tractor trailers that include idle-reduction technologies, aerodynamic technologies, and low-rolling resistant tires that would reduce fuel consumption and associated GHG emissions. Furthermore, truck manufacturers would be required to comply with the ARB ACT Rule, which requires manufacturers of medium- and heavy-duty trucks and vans to sell zero-emission trucks as an increasing percentage of their annual California sales from 2024 to 2035. Under the ACT Rule, by 2035, zero-emission truck/chassis sales would need to be 55 percent of Class 2b to Class 3 truck sales, 75 percent of Class 4 to Class 8 straight truck sales, and 40 percent of truck tractor sales.[95] As the proposed project would not include any feature or design which would

[92] California Air Resources Board (ARB). 2017. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target.
[93] Ibid.
[94] California Air Resources Board (ARB). 2006. Emission Reduction Plan for Ports and Goods Movement in California. April 20.
[95] California Air Resources Board (ARB). 2020. Advanced Clean Trucks: Accelerating Zero-Emission Truck Markets. June 25. Website: https://ww2.arb.ca.gov/sites/default/files/2020-06/200625factsheet_ADA.pdf. Accessed February 9, 2023.

prohibit the implementation of these vehicle emission standards, the proposed project would be consistent with these requirements.

Passenger Vehicles

Statewide strategies to reduce GHG emissions from passenger vehicles and the transportation sector in general include the LCFS and changes in the CAFE Standards (e.g., Pavley I and Pavley California Advanced Clean Cars program). Furthermore, Executive Order N-79-20 would require that 100 percent of new passenger cars and trucks sold in California be zero-emission by 2035, which would indirectly contribute to the extent of EV utilization in the proposed project's passenger vehicle fleet beyond 2035. As the proposed project would not include any feature or design which would prohibit the implementation of these vehicle emission standards, the proposed project would be consistent with these requirements.

Energy Sector

Energy use generated by the proposed project generally represents the second largest source of emissions after considering mobile source GHG emissions. New buildings under the proposed project would meet the current CALGreen and Building Energy Efficiency Standards. The proposed project would include roof structures designed to accommodate additional weight for rooftop photovoltaic electricity generation panel arrays (provided they are compatible with Travis Air Force Base aviation operations). Moreover, the proposed project would be sourcing electricity from on-site generation sources and/or utility providers in the State. As such, the proposed project would meet the requirements contained in the 2019 California Building Code and would be consistent with the State's current CALGreen and Building Energy Efficiency Standards and the State's renewable energy legislation, SB 100.

Other Sources

Other sources of GHG emissions include solid waste disposal, which is associated with landfilling municipal solid waste. The amount of methane emitted to the atmosphere as a fraction of the total amount of methane generated from the decomposition of accumulated waste has gradually declined over time as more landfills install landfill gas collection and control systems and existing systems are operated more efficiently as a result of ARB's Landfill Methane Control Measure.[96] Because the proposed project would be served by a waste collector which would be subject to this requirement, the proposed project would be consistent with the State's goals for the recycling and waste sector.

Metropolitan Transportation Commission/Association of Bay Area Governments Plan Bay Area

As part of the implementing framework for MTC/ABAG Plan Bay Area 2050/SCS, local governments have identified planned development areas to focus growth. The project site is within the Travis Airforce Base Land Use Compatibility Plan area. Thus, the proposed project would be consistent with the overall goals of Plan Bay Area, which includes concentrating new investment in areas that would encourage job growth. In addition, the proposed project would be developed in an area with existing infrastructure. Table 3.6-6 lists the applicable and relevant objectives of the MTC/ABAG Plan Bay Area 2050/SCS and analyzes how the proposed project would conflict or be consistent with these

[96] California Air Resources Board (ARB). 2020. Advanced Clean Trucks: Accelerating Zero-Emission Truck Markets. June 25. Website: https://ww2.arb.ca.gov/sites/default/files/2020-06/200625factsheet_ADA.pdf. Accessed February 9, 2023.

objectives. For more detail on inapplicable goals and objectives, refer to Appendix B2 (GHG Report), Table 6-1.

Table 3.6-6: Consistency with MTC/ABAG Plan Bay Area 2050/Sustainable Communities Strategy

Strategy	Objective	Consistency Analysis
Economic	**EC2.** Expand job training and incubator programs. Fund assistance programs for establishing new businesses, as well as job training programs, primarily in historically disinvested communities.	**Inapplicable but Consistent**. Although this goal is not applicable to an individual commercial development project, the proposed project would generate new jobs for the surrounding community and is accessible via nearby public transit, which provides a low-cost option for commuting.
	EC5. Provide incentives to employers to shift jobs to housing-rich areas well served by transit. Provide subsidies to encourage employers to relocate offices to housing-rich areas near regional rail stations.	**Inapplicable but Consistent**. Although the vicinity is not categorized as a priority development area, the proposed project would create new jobs near housing-rich areas and is located less than 0.5 mile from public transit stops. Therefore, the proposed project would create jobs that are accessible via public transit.
Transportation	**T8.** Build a Complete Streets network. Enhance streets to promote walking, biking and other micro-mobility through sidewalk improvements, car-free slow streets, and 10,000 miles of bike lanes or multiuse paths.	**Consistent**. The proposed project would provide new and improved sidewalks on Walters and Petersen Road frontages.
Environmental	**EN4**. Maintain urban growth boundaries. Using urban growth boundaries and other existing environmental protections, focus new development within the existing urban footprint or areas otherwise suitable for growth, as established by local jurisdictions. **EN5**. Protect and manage high-value conservation lands. Provide strategic matching funds to help conserve and maintain high-priority natural and agricultural lands, including, but not limited to, Priority Conservation Areas and wildland-urban interface areas. **EN6**. Modernize and expand parks, trails and recreation facilities. Invest in quality parks, trails and open spaces that provide inclusive recreation opportunities for people of all backgrounds, abilities and ages to enjoy.	**Consistent.** The proposed project would continue to preserve approximately 47 acres of open space, part of which is protected by a conservation easement containing wetlands and suitable for livestock grazing.

Strategy	Objective	Consistency Analysis
	EN7. Expand commute trip reduction programs at major employers. Set a sustainable commute target for major employers as part of an expanded Bay Area Commuter Benefits Program, with employers responsible for funding incentives and disincentives to shift auto commuters to any combination of telecommuting, transit, walking and/or bicycling.	**Consistent.** The proposed project would result in the preparation of a Transportation Demand Management (TDM) plan (see MM TRANS-2a), which would reduce commute trips through various measures, such as establishing vanpool programs and providing on-site infrastructures for bikers and pedestrians.
	EN8. Expand clean vehicle initiatives. Expand investments in clean vehicles, including more fuel-efficient vehicles and electric vehicle subsidies and chargers.	**Consistent.** The proposed project would meet CALGreen Tier 2 electric vehicle charging requirements (see Section 2.2.9).
	EN9. Expand transportation demand management initiatives. Expand investments in programs like vanpools, bikeshare, carshare and parking fees to discourage solo driving.	**Consistent.** The proposed project would result in the preparation of a TDM plan (see above).
Source: Metropolitan Transportation Commission (MTC)/Association of Bay Area Governments (ABAG). 2021. Plan Bay Area 2050. October 2021. See also Appendix B (GHG Report), Table 6-1.		

Thus, as demonstrated just above, the proposed project would not conflict with the (MTC/ABAG) Plan Bay Area 2050/Sustainable Communities Strategies.

Solano County Climate Action Plan

As previously discussed, the City has not adopted a CAP. However, Solano County adopted a CAP in June 2011 to address climate change and reduce the community's GHG emissions at the local level. If the Solano County Local Agency Formation Commission LAFCo approves the proposed annexation associated with the proposed project, thereby bringing the subject property into the City, the Solano County CAP would not apply to the proposed project. Even so, Table 3.6-7 lists the relevant objectives and measures of the County's CAP that would apply to the proposed project if it stayed in the County's unincorporated area and analyzes how the proposed project would or would not conflict or be consistent with the CAP and those relevant measures. For more detail on inapplicable County CAP measures, refer to Appendix B2 (GHG Report), Table 6-2.

Table 3.6-7: Consistency with Solano County Climate Action Plan

Type	CAP Objective/Measure	Consistency Analysis
Energy and Efficiency	**Objective**: Minimize energy consumption, increase energy efficiencies, and transition to clean renewable energy sources.	**Consistent**. The proposed project would be designed in compliance with the 2019 California Building Code and would implement the most current set of energy efficiency requirements.
	Measure E-1: Investigate the potential to establish a countywide community choice aggregation program and increase the community's use of locally produced renewable energy.	**Inapplicable but Consistent**. This measure does not apply to individual developments.
	Measure E-3: Develop a comprehensive energy efficiency program that provides outreach, financing, and other forms of assistance to residential, commercial, agricultural, and industrial uses. **Measure E-4:** Adopt green building and energy efficiency ordinances to require green building practices, programs and design elements.	**Inapplicable but Consistent**. Although these measures do not apply to individual developments, the proposed project's buildings are subject to the energy efficiency standards in the most recent (2022) Title 24 Energy Code.
Transportation and Land Use	**Objective:** Support a transportation system and land use pattern that promotes carpooling, walking, biking, and using public transit.	**Consistent**. The proposed project would include an internal pedestrian network, including, but not limited to, 10-footwide sidewalks along the proposed project's frontage along Petersen Road. Through Suisun City's design review process, the sidewalks that are either improved or provided along the project frontages of Walter Road and Petersen Road would be designed in accordance with the City's design guidelines. As such, the proposed project would support a transportation system which promotes alternative modes of transportation.
	Measure TC-1: Solano County will work with STA to enhance countywide rideshare infrastructure and services. **Measure TC-2:** Work with STA to increase public transit ridership by expanding	**Inapplicable but Consistent**. Although these measures do not apply to individual developments, the proposed project would implement a

Type	CAP Objective/Measure	Consistency Analysis
	express bus service and improving transit stop amenities and transit connections. **Measure TC-3:** Work with cities and STA to improve bicycle and pedestrian connectivity in the county.	Transportation Demand Management (TDM) plan (see Mitigation Measure [MM] TRANS-2a), which would reduce commute trips through various measures, such as establishing vanpool programs and providing on-site infrastructures for bikers and pedestrians.
	Measure TC-4: Educate residents and businesses about options to reduce motor vehicle emissions.	**Inapplicable but Consistent**. Although this measure does not apply to individual developments, the proposed project would implement various air quality mitigation measures that reduce motor vehicle emissions.
	Measure LU-1: Protect and preserve forested areas, agricultural lands, wildlife habitat, and wetlands that provide carbon sequestration.	**Consistent**. The proposed project would continue to preserve approximately 47 acres of open space, part of which is currently protected by a conservation easement that contains wetlands and is suitable for livestock grazing.
Waste Reduction and Recycling	**Measure W-2:** Work with Solano County water providers, including representatives for well users that share water with their neighbors for residential water use, to expand and promote outreach programs and incentives for water conservation.	**Consistent**. Construction of the proposed project is subject to the City's ordinance, which requires compliance with CALGreen recycling requirements, including the 65 percent recycling and reuse rate of construction debris.
Source: Solano County. 2011. Climate Action Plan. Website: https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=10080. Accessed February 9, 2023. See also Appendix B (GHG Report), Table 6-2.		

As discussed in Table 3.6-7, the proposed project includes features that would contribute to the County's strategy to minimize GHG emissions. With these features, the proposed project would not conflict with the applicable objectives and measures within the Solano County CAP.

Suisun City General Plan

As previously discussed, the City has not adopted a CAP. However, the City's General Plan contains several policies which intend to address climate change and reduce the community's GHG emissions at the local level. A comprehensive consistency analysis is provided in Table 3.9-2 in Section 3.9, Land

Use. As indicated in that table, the proposed project is consistent with applicable goals, objectives, and policies.

Accordingly, as demonstrated in the above analysis, the proposed project would not conflict with any applicable plan, policy, or regulation adopted to reduce GHG emissions. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Energy Consumption

Impact GHG-3:	**The proposed project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.**

Impact Analysis

A significant impact would occur if the proposed project would result in the inefficient, wasteful, or unnecessary use of energy.

Construction

The anticipated construction schedule for the proposed project was assumed to begin in 2025 and conclude in 2026, lasting approximately 18 months. If the anticipated construction schedule moves to later years, construction energy demand would likely decrease because of improvements in technology and more stringent regulatory requirements as older, less efficient equipment is replaced by newer and cleaner equipment. The proposed project would require site preparation, grading, building construction, architectural coating, and paving activities. Project construction would require energy for the manufacture and transportation of building materials, preparation of the site (e.g., site clearing, and grading), and the actual construction of the buildings. Petroleum-based fuels such as diesel fuel and gasoline would be the primary sources of energy for these tasks.

The types of on-site equipment used during the proposed project's construction could include gasoline- and diesel-powered construction and transportation equipment, including trucks, bulldozers, front-end loaders, forklifts, and cranes. Construction equipment is estimated to consume approximately 131,900 gallons of diesel fuel over the entire construction duration (Appendix B3 [Energy Report]).

Fuel use associated with construction vehicle trips generated by the proposed project was also estimated; trips include construction worker trips, haul truck trips for material transport, and vendor trips for construction material deliveries. Fuel use from these vehicles traveling to the project site

was based on (1) the projected number of trips the proposed project would generate during construction, (2) average trip distances by trip type, and (3) fuel efficiencies estimated in the ARB Emissions Factors model (EMFAC) mobile source emission model. The specific parameters used to estimate fuel usage are included in Appendix B3 (Energy Report). In total, the proposed project is estimated to consume approximately 84,900,000 gallons of gasoline and 7,200,000 gallons of diesel for vehicle travel during construction. For any given construction year, the estimated fuel use would be less than 0.5 percent of the gasoline and less than 0.4 percent of the diesel fuel production in Northern California region in 2022.

Other equipment could include construction lighting, field services (office trailers), and electrically driven equipment such as pumps and other tools. The project construction would consume approximately 0.9 MWh of electricity in total (Appendix B3 [Energy Report]). The electricity demand associated with construction of the proposed project would be supplied by the existing grid, if available. In the event of an emergency or during a power outage, the use of generator sets would be permissible. Therefore, relatively negligible impacts to energy demand would be expected as a result of the proposed project's construction activities.

The proposed project's construction activities would involve standard grading and building practices are not anticipated to result in unusually high energy use. Limitations on idling of vehicles and equipment and requirements that equipment be properly maintained would result in fuel savings. Similarly, compliance with State regulations would limit idling from both on-road and off-road diesel-powered equipment and are enforced by the ARB. Additionally, the overall construction schedule and process is already designed to be efficient to avoid excess monetary costs. For example, equipment and fuel are not typically used wastefully due to the added expense associated with renting the equipment, maintaining it, and fueling it. In addition, MM GHG-1 requires the proposed project to implement feasible and applicable construction BMPs, such as minimizing idling time and properly tuning and maintaining construction equipment.

Therefore, project construction would not require more fuel or electricity compared to construction of similar scales, would have minimal impacts on local and regional energy supplies including fuel production and peak and base period electricity demand, and would comply with existing energy standards. Therefore, it is anticipated that the construction phase of the proposed project would not result in wasteful, inefficient, and unnecessary consumption of energy. Construction-related energy impacts would be less than significant.

Operation

The proposed project would consume energy as part of building operations and transportation activities. Unmitigated project energy consumption is summarized in Table 3.6-8, and mitigated project energy consumption is summarized in Table 3.6-9.

Table 3.6-8: Unmitigated Annual Project Energy Consumption

Energy Consumption Activity	Annual Consumption		
	Electricity MWh	Gasoline gallons	Diesel gallons
Cold Storage			
Mobile	280	536,283	1,114,228
TRU Operations	–	–	204,644
On-site Equipment	–	–	147,416
Buildings	56,481	–	–
Landscaping Equipment	–	4,896	–
Stationary Sources	–	-	4,611
Total	56,761	541,178	1,470,899
Dry Storage			
Mobile	280	536,283	1,114,228
On-site Equipment	–	–	147,416
Buildings	27,593	–	–
Landscaping Equipment	–	4,896	–
Stationary	–	–	4,611
Total	27,873	541,178	1,266,255

Notes:
MWh = megawatt-hour
TRU = Transport Transportation Unit
Source: Appendix B3 (Energy Report), Table 5-2.

Table 3.6-9: Mitigated Annual Project Energy Consumption

Energy Consumption Activity	Annual Consumption		
	Electricity MWh	Gasoline gallons	Diesel gallons
Cold Storage			
Mobile	280	536,283	1,114,228
TRU Operations	4,145	–	64,058
On-site Equipment	1,472	–	92,103
Buildings	56,481	–	–
Landscaping Equipment	40	–	–
Stationary Sources	–	–	4,611
Total	62,418	536,283	1,275,000

Energy Consumption Activity	Annual Consumption		
	Electricity MWh	Gasoline gallons	Diesel gallons
Dry Storage			
Mobile	280	536,283	1,114,228
On-site Equipment	1,472	–	92,103
Buildings	27,593	–	–
Landscaping Equipment	40	–	–
Stationary	–	–	4,611
Total	29,384	536,283	1,210,942

Notes:
MWh = megawatt-hour
TRU = Transport Transportation Unit
Source: Appendix B3 (Energy Report), Table 5-2

As summarized in Table 3.6-8 and Table 3.6-9, operations of the proposed project would consume less than 0.02 percent of gasoline and less than 0.08 percent of diesel produced in 2022 in Northern California, would consume about 0.02 percent of Statewide electricity demand, and would create a negligible demand on the peak grid demand. Furthermore, the proposed project would not consume any natural gas. The proposed project's buildings would be designed and constructed in accordance with the State's latest Building Energy Efficiency Standards. The proposed project would also provide more electrical vehicle charging spaces than the minimum code requirements. The State's Building Energy Efficiency Standards are widely regarded as some of the most advanced building energy efficiency standards in the country, and compliance would ensure that building energy consumption would not be wasteful, inefficient, or unnecessary.

With the implementation of project features and air quality mitigation measures (MM AIR-2e, MM AIR-2h, and MM AIR-2i), the proposed project would reduce its reliance on fossil fuels and increase its reliance on renewable energy sources. These project features and mitigation measures would increase the proposed project's use of electricity provided from the grid by PG&E, 38 percent of which is sourced from renewable energy sources, 8 percent of which is sourced from large hydroelectric, and 49 percent of which is from nuclear power.[97] To accomplish the same functions of the project (e.g., maintaining TRU temperatures when docking), electrifying the proposed project's operations would rely more on renewable energy sources than fossil fuels. In addition, the proposed project would include solar photovoltaic systems as a renewable energy features if such facilities are determined not to create potential hazards for Travis Air Force Base's operations.

Project-related vehicle trips would consume fuel throughout the life of the proposed project due to employee vehicles, delivery vehicles, and heavy-duty trucks. This analysis evaluated operational fuel

[97] Pacific Gas and Electric Company (PG&E). 2022. 2022 Power Content Label. Available at: https://www.pge.com/content/dam/pge/docs/account/billing-and-assistance/bill-inserts/1023-Power-Content-Label.pdf. Accessed December 2023.

consumption based on the proposed project's operational assumptions, which include heavy-duty truck operation. Gasoline and diesel fuel usage for the proposed project from mobile sources, as shown in Table 3.6-8 and Table 3.6-9, would decrease over time as fleets become more fuel efficient and switch to more electric vehicles. In addition, diesel fuel usage for TRUs installed on the heavy-duty trucks accessing the project site would be subject to Executive Order N-79-20 and the subsequent rulemaking to transition truck TRUs to zero-emission. Therefore, diesel fuel usage for TRUs would also decrease over time.

Regional access to the project site is provided by Petersen Road and Walters Road connecting to State Route (SR) 12, which is approximately 30 feet from the project site. The proposed project is located near regional and local roadways that would provide convenient access for future employees. Thus, transportation fuel consumption would not be wasteful, inefficient, or unnecessary. Impacts would be less than significant.

Notably, the applicant has committed to install solar photovoltaic systems in the proposed project if such systems prove to be feasible despite the proposed project site's close proximity to the Travis Air Force Base (TAFB). The feasibility of such systems, however, cannot be determined at the current, relatively early stage of the planning process, but rather must be deferred until the subsequent design stage. The issue to be resolved at that time would be whether photovoltaic systems would create glint and glare hazards for TAFB, which would be inconsistent with Travis Air Force Base's Land Use Compatibility Plan. During the design phase, the applicant and City of Suisun would conduct modeling pursuant to the Solar Glare Hazard Analysis Tool (SGHAT) model developed by Sandia National Laboratories in order to assess the amount of glint and glare that photovoltaic systems might produce and whether such glint and glare could create problems either in an existing or planned Airport Traffic Control Tower cab at TAFB or within or along the final approach path for any existing landing threshold or future landing threshold (including any planned interim phases of the landing thresholds) as shown on the Layout Plan for Travis AFB. The modeling could also be used to modify proposed systems to eliminate any potential glint and glare problems. No commercial scale solar facilities could be installed, however, without review by the Solano County Airport Land Use Commission pursuant to Section 5.6 of the Travis Air Force Base's Land Use Compatibility Plan.[98]

Overall, the proposed project's operations would not create inefficient or wasteful energy use including those for the transportation sources, would incorporate renewable energy resources when feasible, would not create substantial demands on local and regional energy supplies, and would comply with existing energy standards. The proposed project's operations would not result in any potentially significant impact due to wasteful, inefficient, or unnecessary consumption of energy resources. Appendix B3 (Energy Report) contains detailed impact evaluation based on guidance provided in Appendix F of the CEQA Guidelines,

Level of Significance Before Mitigation

Less than significant impact.

[98] Environmental Science Associates (ESA). 2023. Suisun Logistics Center – Travis Air Force Base Land Use Compatibility Plan Consistency Evaluation. October 18.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Conflict with Plan for Renewable Energy or Energy Efficiency

Impact GHG-4:	**The proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency?**

Impact Analysis

A significant impact would occur if the proposed project conflicts with or obstructs a State or local plan for renewable energy or energy efficiency. Therefore, a significant impact would occur if the proposed project were considered inconsistent with applicable plans adopted to promote or improve energy efficiency or renewable energy, including the City's General Plan and the Solano County CAP.

The proposed project would be designed in accordance with Title 24, California's Energy Efficiency Standards for Nonresidential Buildings techniques and practices. These standards include minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., HVAC and water heating systems), and indoor and outdoor lighting. Incorporating the Title 24 standards into the proposed project's design would ensure that the proposed project would not result in the use of energy in a wasteful manner. Furthermore, the proposed project would have roof structures designed to accommodate additional weight for rooftop photovoltaic electricity generation panel arrays, so it is possible that the proposed project could use solar electricity generation.

The Suisun City General Plan and Solano County CAP contain policies related to energy conservation that are relevant to the proposed project. As discussed in Table 3.9-2 and Table 3.6-7, the proposed project would be consistent with the energy efficiency measures contained in the City's General Plan and County's CAP.

The proposed project would comply with existing State energy standards and be consistent with the energy efficiency goals and measures contained in the City's General Plan and the County's CAP. Moreover, GHG-1 would reduce construction equipment fuel consumption through the requirement that 15 percent of equipment be alternatively fueled or electric. MM AIR-2e, MM AIR-2h, and MM AIR-2i would increase use of electricity on the site, a part of which would be generated by renewable energy sources, and would reduce reliance on fossil fuel supply.

As such, the proposed project would not conflict with State or local renewable or energy efficiency objectives. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

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3.7 - Hazards and Hazardous Materials

3.7.1 - Introduction

This section describes the existing hazards and hazardous materials setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on the Phase I Environmental Site Assessment (Phase I ESA) prepared by Youngdahl Consulting Group, Inc., (Youngdahl) included in this Draft Environmental Impact Report (Draft EIR) as Appendix F.

3.7.2 - Environmental Setting

Hazardous Materials

Hazardous materials, as defined by the California Code of Regulations (Title 22, Division 4.5), are substances with certain physical properties that could pose a substantial present or future hazard to human health or the environment when improperly handled, disposed, or otherwise managed. Hazardous materials are grouped into the following four categories, based on their properties:

- Toxic—causes human health effects
- Ignitable—has the ability to burn
- Corrosive—causes severe burns or damage to materials
- Reactive—causes explosions or generates toxic gases

Hazardous waste is any hazardous material that is discarded, abandoned, or slated to be recycled. The criteria that define a material as hazardous also define a waste as hazardous. If improperly handled, hazardous materials and hazardous waste can result in public health hazards if released into the soil or groundwater or through airborne releases in vapors, fumes, or dust. Soil and groundwater having concentrations of hazardous constituents higher than specific regulatory levels must be handled and disposed of as hazardous waste when excavated or pumped from an aquifer. The California Code of Regulations, Title 22, Division 4.5, Sections 66261.20-24 contains technical descriptions of toxic characteristics that could cause soil or groundwater to be classified as hazardous waste.

Phase I Environmental Site Assessment

A Phase I ESA is a research investigation by a qualified environmental professional into whether a release of hazardous materials has occurred at a property. Phase I ESAs are guided by protocol established by the American Society for Testing and Materials (ASTM) Practice E 1527, including the standards that an environmental professional must fulfill to be qualified to conduct the Phase I ESA. Under the ASTM standard, a “recognized environmental condition” means “the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that

generally would not be the subject of an enforcement action if brought to the attention of appropriate environmental agencies."

The research conducted in a Phase I ESA includes a comprehensive review of the project site's current and prior uses and those of neighboring properties based on reasonably ascertainable local, State, and federal regulatory agency environmental databases, historical aerial photographs, topographic maps, and business directories compiled by Environmental Data Resources, Inc. (EDR) or similar database service; a site reconnaissance for visual signs of the use and storage of hazardous materials or a release of hazardous materials to the environment; a search for aboveground and underground storage tanks (USTs), sumps, or clarifiers; and completion of questionnaires by, and interviews with, the current landowners.

Youngdahl prepared a Phase I ESA in accordance with ASTM Practice E 1527-13. The findings are summarized in this section.

Regulatory Records Review

Youngdahl reviewed available databases from federal and State regulatory agencies to identify use, generation, storage, treatment, or disposal of hazardous materials and chemicals or release incidents of such materials, which may have impacted the project site. The regulatory databases were provided to Youngdahl by EDR. The EDR FirstSearch Report is included in Appendix F of this Draft EIR. The findings are summarized in Table 3.7-1.

Table 3.7-1: Regulatory Records Review Summary

Name	Location	Remarks
Bonfare Market	1500 Walters Road (opposite side of Petersen Road from project site)	Release of petroleum hydrocarbons to groundwater; Case closed as of June 30, 2017
Travis Air Force Base	Immediately east of project site	Release of volatile organic compounds (including petroleum hydrocarbons) to groundwater
Source;: Youngdahl Consulting Group, Inc. (Youngdahl). 2015; California State Water Resources Control Board (State Water Board). 2021.		

Each site is summarized as follows:

Bonfare Market

Bonfare Market consists of a convenience store with fuel pumps under a canopy. In 2008, several hundred gallons of diesel were released following the disabling of an overflow prevention device in a fill tube. The property owner was required to conduct groundwater monitoring, and petroleum hydrocarbons and methyl tertiary butyl ether (MTBE) were detected in 2010. Monitoring wells were installed in 2010 and monitored until 2015. The final groundwater reading indicated that MTBE was below detection levels at the southwestern portion of the plume (closest to the project site). The Solano County Department of Resource Management Environmental Health Division issued a "Case

Closure" letter on June 30, 2017, signifying that soil and groundwater remediation activities were successfully completed. Therefore, the Bonfare Market site does not pose a substantial health or safety risk to the proposed project.

Travis Air Force Base

Travis Air Force Base is a large quantity user of hazardous materials (e.g., aviation fuel) owing to its mission as a military passenger and supply depot. Volatile organic compounds (including total petroleum hydrocarbons) have been released to groundwater via Leaking Underground Storage Tanks (LUSTs). There are multiple groundwater plumes that are monitored by more than 700 monitoring wells. The prevailing groundwater gradient is to the south and southeast, and, thus, the plumes are not migrating toward the project site.

Aerial Photographs

Youngdahl reviewed historical aerial photographs and historical topographic maps provided by EDR/FirstSearch for information pertaining to possible environmental concerns for the project site, adjoining properties, and surrounding properties. Topographical maps and aerial photographs of the project site and vicinity are summarized in Table 3.7-2.

Table 3.7-2: Historic Aerial Photographs

Year	Scale	Description
1937	1" = 1,000'	Project site and surrounding area appears to be grazing land; a cluster of structures is visible in the center of the project site. A road following the alignment of Petersen Road is visible.
1957	1" = 1,000'	Walters Road is visible, and Petersen Road appears to have been improved since prior photograph. The Potrero Hills Landfill appears to be under development.
1968	1" = 1,000'	Row crops are present in the center of the project site. State Route 12 is visible.
1974	1" = 1,000'	Row crops are no longer present on project site.
1984	1" = 1,000'	Residential uses are under development north of the project site along Petersen Road and Walters Road; new development has occurred within Travis Air Force Base.
1993	1" = 1,000'	Structures are no longer visible within the project site. Residential uses are under development west of State Route 12; Lambrecht Sports Park is under development north of the project site. Bonfare Market is visible.
1998	1" = 500'	Walters Road has been extended to connect to State Route 12; residential uses are under development west of State Route 12; further development has occurred at Lambrecht Sports Park.
2006	1" = 500'	New development is visible north of Bonfare Market.
2009	1" = 500'	Storage facility is visible east of Bonfare Market.
2010	1" = 500'	Travis Air Force Base gatehouse visible.
Source: Youngdahl Consulting Group, Inc. (Youngdahl). 2015.		

Site Reconnaissance

Youngdahl conducted site reconnaissance on September 24, 2015, to visually and physically observe the project site and adjoining properties for conditions indicating an existing release, past release, or threatened release of any hazardous substances or petroleum products into structures of the site, or into soil or groundwater beneath the site. This would include any evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling. Based on a site reconnaissance and a review of physiographic, historical, and regulatory information, there is no evidence of Recognized Environmental Conditions (RECs) (as defined by ASTM standards) in connection with the project site. The findings are summarized as follows:

Structures

No standing structures were observed; however, remnants of buildings (e.g., concrete foundations, wood debris, and a possible septic vault) were found to be present. An approximately 25-foot-tall windmill (or windpump) is located near the building remnants that that is used to pump groundwater from a well.

Aboveground Storage Tanks or Underground Storage Tanks

No evidence for the presence of aboveground storage tanks or USTs was observed.

Asbestos-containing Materials

Asbestos refers to a number of naturally occurring, fibrous silicate minerals mined for their useful properties, such as thermal insulation, chemical and thermal stability, and high tensile strength. Asbestos was commonly used as an acoustic insulator, thermal insulation, fireproofing, and in other building materials. Asbestos is made up of microscopic bundles of fibers that may become airborne when the materials are damaged or disturbed. When these fibers become airborne, they may be inhaled into the lungs, where they can cause significant health problems. Under the Clean Air Act and its regulations, a material is considered “asbestos-containing material” if at least one sample collected from the homogeneous material shows asbestos present in an amount greater than 1 percent by weight.

Youngdahl concluded that there is the potential for asbestos-containing materials (ACM) to be present in soils because the structures that were formerly present on-site were constructed prior to 1980.

Lead-based Paint

Lead is a highly toxic metal that was used in a number of products, most notably in paint, until the late 1970s when lead-based paint (LBP) was prohibited by federal law. Lead may cause a range of health effects, from behavioral problems and learning disabilities to seizures and death. Lead-containing materials generally do not pose a health threat unless the material is disturbed or sufficiently deteriorated to produce dust, which may become airborne and inhaled or ingested. Primary sources of lead exposure are deteriorating LBP on structures, lead-contaminated dust, and lead-contaminated soil. Both federal law and California law define “lead-based paint” as paint containing a minimum of 0.5 percent lead by weight (California Code of Regulations [CCR] Title 17 §

35033). Lead-containing waste materials with a concentration greater than 0.1 percent are treated as hazardous waste under California law (CCR Title 22, § 66261.24(a)(2)).

Youngdahl concluded that there is the potential for LBP to be present in soils because the structures that were formerly present on-site were constructed prior to 1978.

Polychlorinated Biphenyls

Polychlorinated biphenyls (PCBs) are a family of chlorinated compounds that are non-flammable, chemically stable, with a high boiling point and electrical insulating properties. Their qualities as a fire retardant and insulator made them effective in high temperature applications. PCBs are strictly regulated because of their toxicity and persistence in the environment. Prior to the federal ban on the manufacture of PCBs in 1978, PCBs were commonly incorporated in the manufacture of fluorescent light ballasts.

No leaking or stained equipment that would have the potential to contain PCBs (e.g., transformers, capacitors, light ballasts, hydraulic equipment) was observed on or adjacent to the project site during the site reconnaissance.

Agricultural Chemicals

The project site has supported agricultural land uses for at least the last 70 years. Based on this information, there is a potential that residual agricultural chemicals are present within the on-site soils.

Radon

Radon is a carcinogenic radioactive gas resulting from the natural breakdown of uranium in soil, rock, and water. Radon gas enters a building through cracks in foundations and walls. Once inside the building, radon decay products may become attached to dust particles and inhaled, or the decayed radioactive particles alone may be inhaled and cause damage to lung tissue. The United States Environmental Protection Agency (EPA) has established a safe radon exposure threshold of 4.0 picocuries per liter of air (pCi/l). Table 3.7-3 summarizes indoor radon test results for three zip codes in the project vicinity. As shown in the table, no samples exceeding 4.0 pCi/l have been reported in the Suisun City area. Therefore, radon does not pose a risk to the proposed project.

Table 3.7-3: Indoor Radon Testing Summary

Zip Code	Total Indoor Radon Samples	No. Exceeding 4.0 pCi/L	Percent Exceeding 4.0 pCi/L	Maximum Result (pCi/L)
94533 (Fairfield)	38	0	0%	2.1
94534 (Cordelia)	13	0	0%	1.9
94585 (Suisun City)*	10	0	0%	1.0
Total	**51**	**0**	**0%**	**—**

Notes:
pCi/L = picocuries per liter
* Project site located within 94585 zip code
Source: California Department of Public Health. 2016.

Pipelines

Several pipelines are located within or proximate to the project boundaries. These include the (1) JP-8 Underground Transfer Pipeline within Petersen Road, (2) a Pacific Gas and Electric Company (PG&E) natural gas pipeline that crosses the project site in an east–west direction, (3) a PG&E natural gas pipeline within Walters Road, (4) a PG&E natural gas pipeline within Petersen Road, and (5) a PG&E natural gas pipeline that follows the eastern boundary of the project site. Exhibit 3.7-1 depicts the pipelines in the project vicinity.

JP-8 Underground Transfer Pipeline

The JP-8 Underground Transfer Pipeline is located within Petersen Road in the project vicinity. The pipeline is 8 inches in diameter and conveys JP-8 aviation fuel to Travis Air Force Base.

Natural Gas Pipelines

Several PG&E natural gas pipelines are located in the project vicinity. A 16-inch-diameter pipeline crosses through the project site in an east–west direction. Pipelines are also located within Walters Road, Petersen Road, and along the eastern boundary of the project site. These pipelines serve Travis Air Force Base and also convey natural gas from the Rio Vista Gas Field west to the San Francisco Bay Area.

Low-Frequency Electromagnetic Fields

Electrical transmission and distribution lines emit extremely low-frequency electromagnetic fields (EMFs), which have been suspected to be linked to cancer. However, scientific research has never conclusively established a link between EMFs and cancer. In 2007, the World Health Organization issued a report titled “Extremely Low-Frequency Fields, Environmental Health Criteria Monograph No. 238” that concluded that evidence between extremely low-frequency EMFs and childhood leukemia is not strong enough to be considered causal, although it did note that the issue still was of concern. The same report indicated that there is inadequate evidence or no evidence linking low-frequency EMFs and health effects associated with all other diseases.

No major electrical transmission lines (i.e., tower lines) are located within 0.5 mile of the project site. A 220 kilovolt (kV) tower line is located approximately 1 mile to the southeast of the project site.

Travis Air Force Base

Travis Air Force Base is located approximately one-half mile east of the project site. The Air Base encompasses 6,455 acres and operates three runways: 3L/21R (11,001 feet), 3R/21L (10,995 feet), and 32/212 (3,500 feet). The host unit of the Air Base is the 60th Air Mobility Wing, which has a fleet of C-5M Galaxy and C-17 Globemaster III cargo aircraft and KC-10 Extenders refueling aircraft. Travis Air Force Base handles the most cargo and passengers of any military air terminal in the United States.

Source: Bing Aerial Imagery.

FIRSTCARBON SOLUTIONS™

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Exhibit 3.7-1
Pipeline Map

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CITY OF SUISUN CITY
SUISUN LOGISTICS CENTER PROJECT
ENVIRONMENTAL IMPACT REPORT

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3.7.3 - Regulatory Framework

Federal

United States Environmental Protection Agency

The EPA leads the nation's environmental science, research, education, and assessment efforts. The EPA's mission is to protect human health and to safeguard the natural environment including air, water, and land. The EPA works closely with other federal agencies, State and local governments, and Indian tribes to develop and enforce regulations under existing environmental laws. The EPA is primarily responsible for researching and setting national standards for a variety of environmental programs, and delegates responsibility for issuing permits and monitoring and enforcing compliance to states and tribes. When national standards are not met, the EPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality. The EPA also works with industries and all levels of government in a wide variety of voluntary pollution prevention programs and energy conservation efforts.

EPA Region 9 has jurisdiction over the southwestern United States (Arizona, California, Nevada, and Hawaii), including Suisun City.

Resource Conservation and Recovery Act

The 1976 Federal Resource Conservation and Recovery Act (RCRA) and the 1984 RCRA Amendments regulate the treatment, storage, and disposal of hazardous and non-hazardous wastes. The legislation mandated that hazardous wastes be tracked from the point of generation to their ultimate fate in the environment. This includes detailed tracking of hazardous materials during transport and permitting of hazardous material handling facilities.

The 1984 RCRA amendments provided the framework for a regulatory program designed to prevent releases from USTs. The program establishes tank and leak detection standards, including spill and overflow protection devices for new tanks. The tanks must also meet performance standards to ensure that the stored material will not corrode the tanks. Owners and operators of USTs had until December 1998 to meet the new tank standards.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 introduced active federal involvement to emergency response, site remediation, and spill prevention, most notably the Superfund program. The act was intended to be comprehensive in encompassing both the prevention of, and response to, uncontrolled hazardous substances releases. The act deals with environmental response, providing mechanisms for reacting to emergencies and to chronic hazardous material releases. In addition to establishing procedures to prevent and remedy problems, it establishes a system for compensating appropriate individuals and assigning appropriate liability. It is designed to plan for and respond to failure in other regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

United States Department of Transportation

The Hazardous Materials Transportation Act of 1974, as amended, is the basic statute regulating hazardous materials transportation in the United States. This law gives the United States Department of Transportation and other agencies the authority to issue and enforce rules and regulations governing the safe transportation of hazardous materials.

State agencies are authorized to designate highways for the transport of hazardous materials. Where highways have not been designated, hazardous materials must be transported on routes that do not go through or near heavily populated areas.

Federal Aviation Administration

The Federal Aviation Administration (FAA) regulates aviation at regional, public, private, and military airports. The FAA regulates objects affecting navigable airspace and structures taller than 200 feet according to Federal Aviation Regulation 49 Code of Federal Regulations 77.13. The United States Department of Transportation (USDOT) and the California Department of Transportation (Caltrans) require the project proponent to submit FAA Form 7460-1, Notice of Proposed Construction or Alteration. According to 49 Code of Federal Regulations 77.17, notification allows the FAA to identify potential aeronautical hazards in advance, thereby preventing or minimizing any adverse impacts on the safe and efficient use of navigable airspace. Any structure that would constitute a hazard to air navigation, as defined in this FAA regulation, would require issuance of a permit from Caltrans' Aeronautics Program. The permit is not required if the FAA aeronautical study determines that the structure would have no impact on air navigation.

State

Cortese List

The provisions in Government Code Section 65962.5 are commonly referred to as the "Cortese List." The list, or a site's presence on the list, has bearing on the local permitting process as well as on compliance with the California Environmental Quality Act (CEQA). While 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 websites of GeoTracker and EnviroStor. Those requesting a copy of the Cortese "list" are now referred directly to the appropriate information resources contained on the Internet web sites (e.g., GeoTracker and EnviroStor).

California Health and Safety Code

The California Environmental Protection Agency (Cal/EPA) has established rules governing the use of hazardous materials and the management of hazardous wastes. California Health and Safety Code Sections 25531, *et seq.* incorporates the requirements of Superfund Amendments and Reauthorization Act and the Clean Air Act as they pertain to hazardous materials. Health and Safety Code Section 25534 directs facility owners storing or handling acutely hazardous materials in reportable quantities to develop a Risk Management Plan. The plan must be submitted to the appropriate local authorities, the designated local administering agency, and the EPA for review and approval.

California Environmental Protection Agency

Government Code Section 65962.5 requires Cal/EPA to develop a Cortese List at least annually. The California Department of Toxic Substances Control (DTSC) is responsible for a portion of the information on the list, and other local and State government agencies are required to provide additional information. Cal/EPA operates the California Air Resources Board (ARB), the Department of Pesticide Regulation, the DTSC, the Integrated Waste Management Board, the California Office of Environmental Health Hazard Assessment (OEHHA), and the California State Water Resources Control Board (State Water Board). The function of each of these six offices is discussed below.

California Air Resources Board

The ARB promotes and protects public health, welfare, and ecological resources through the effective and efficient reduction of air pollutants in recognition and consideration of the effects on the economy of the State.

Department of Pesticide Regulation

The Department of Pesticide Regulation regulates all aspects of pesticide sales and use to protect the public health and the environment for the purpose of evaluating and mitigating impacts of pesticide use, maintaining the safety of the pesticide workplace, ensuring product effectiveness, and encouraging the development and use of reduced-risk pest control practices.

California Department of Toxic Substances Control

The DTSC's mission is to restore, protect, and enhance the environment, to ensure public health, environmental quality, and economic vitality by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention. The DTSC protects residents from exposure to hazardous wastes. The DTSC operates programs to:

- Deal with the aftermath of improper hazardous waste management by overseeing site cleanups.
- Prevent releases of hazardous waste by ensuring that those who generate, handle, transport, store, and dispose of waste do so properly.
- Take enforcement actions against those who fail to manage hazardous wastes appropriately.
- Explore and promote means of preventing pollution and encourage reuse and recycling.
- Evaluate soil, water, and air samples taken at sites, and develop new analytical methods.

California Department of Resources Recycling and Recovery

The California Department of Resources Recycling and Recovery (CalRecycle) protects the public health and safety and the environment through waste prevention, waste diversion, and safe waste processing and disposal. CalRecycle is responsible for managing California's solid waste stream. CalRecycle is helping California divert its waste from landfills by:

- Developing waste reduction programs.
- Providing public education and outreach.
- Assisting local governments and businesses.
- Fostering market development for recyclable materials.

- Encouraging used oil recycling.
- Regulating waste management facilities.
- Cleaning up abandoned and illegal dumpsites.

Office of Environmental Health Hazard Assessment

The OEHHA is responsible for developing and providing risk managers in state and local government agencies with toxicological and medical information relevant to decisions involving public health. OEHHA also works with federal agencies, the scientific community, industry, and the general public on issues of environmental as well as public health. Specific examples of OEHHA responsibilities include:

- Developing health-protective exposure standards for air, water, and land to recommend to regulatory agencies, including ambient air quality standards for the ARB and drinking water chemical contaminant standards for the Department of Health Services. Assessing health risks to the public from air pollution, pesticide and other chemical contamination of food, seafood, drinking water, and consumer products.
- Providing guidance to local health departments, environmental departments, and other agencies with specific public health problems, including appropriate actions to take in emergencies that may involve chemicals.

California State Water Resources Control Board

The State Water Board preserves and enhances the quality of California's water resources and ensures their proper allocation and efficient use for the benefit of present and future generations. The State Water Board maintains the Leaking Underground Storage Tank Information System (LUTIS) Database, which contains information on registered LUSTs in the State.

California Occupational Safety and Health Agency

The California Occupational Safety and Health Agency (Cal/OSHA) sets and enforces standards that ensure safe and healthy working conditions for California's workers. The Division of Occupational Safety and Health is charged with the jurisdiction and supervision of workplaces in California that are not under federal jurisdiction. Cal/OSHA regulates issues involving unsafe workplace conditions, worker exposure to chemicals, illness due to workplace exposure, or improper training.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

In January 1996, the Cal/EPA adopted regulations implementing the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The program has six elements: (1) hazardous waste generators and hazardous waste on-site treatment; (2) USTs; (3) aboveground storage tanks; (4) hazardous materials release response plans and inventories; (5) risk management and prevention programs; and (6) Uniform Fire Code hazardous materials management plans and inventories. The plan is implemented at the local level. The local agency that is responsible for the implementation of the Unified Program is the Certified Unified Program Agency (CUPA), and the Solano County Department of Resource Management, Environmental Health Services Division, is the designated CUPA.

The California Hazardous Materials Release Response Plans and Inventory Law of 1985

The Business Plan Act requires that any business that handles hazardous materials prepare a business plan, which must include the following:

- Details, including floor plans, of the facility and business conducted at the site.
- An inventory of hazardous materials that are handled or stored on-site.
- An emergency response plan; and
- A safety and emergency response training program for new employees with annual refresher courses.

Hazardous Materials Transportation Regulations

The State has also adopted United States Department of Transportation Regulations for the intrastate movement of hazardous materials. State regulations are contained in California Code of Regulations, Title 26. In addition, the State regulates the transportation of hazardous waste originating in the State and passing through the State (CCR Title 26). Both regulatory programs apply in California. The two State agencies with primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and Caltrans.

California Vehicle Code Section 32000

Common carriers are licensed by the CHP, pursuant to California Vehicle Code Section 32000. This section requires the licensing of every motor (common) carrier who transports, for a fee, in excess of 500 pounds of hazardous materials at one time, and every carrier, if not for hire, who carries more than 1,000 pounds of hazardous material of the type requiring placards.

California Accidental Release Prevention Program

The California Accidental Release Prevention Program (Cal/ARP) regulations became effective January 1, 1997, replacing the California Risk Management and Prevention Program. Cal/ARP was created to prevent the accidental release of regulated substances. It covers businesses that store or handle certain volumes of regulated substances at their facilities. A list of regulated substances is found in Section 2770.5 of the Cal/ARP regulations. If a business has more than the listed threshold quantity of a substance, an accidental release prevention program must be implemented, and a risk management plan may be required. The California Office of Emergency Services (OES) is responsible for implementing the provisions of Cal/ARP.

California Department of Transportation and California Highway Patrol

The California Vehicle Code Section 31303 requires that hazardous materials be transported via routes with the least overall travel time and prohibits the transportation of hazardous materials through residential neighborhoods. In California, the CHP is authorized to designate and enforce route restrictions for the transportation of hazardous materials. To operate in California, all hazardous waste transporters must be registered with the DTSC. Unless specifically exempted, hazardous waste transporters must comply with the CHP Regulations, the California State Fire Marshal Regulations, and the United States Department of Transportation Regulations. In addition, hazardous waste transporters must comply with Division 20, Chapter 6.5, Article 6 and 13 of the

California Health and Safety Code, and the Title 22, Division 4.5, Chapter 13 of the California Code of Regulations, both of which are administered by the DTSC.

State Aeronautics Act

The State Aeronautics Act requires each county with an airport to establish an Airport Land Use Commission to regulate land use around airports, in order to protect public safety and ensure that land uses near airports do not interfere with aviation operations. The Travis Air Force Base Land Use Compatibility Plan regulates land use around Travis Air Force Base by requiring compliance with the Travis Air Force Base Land Use Compatibility Plan. In certain circumstances, local governments have the ability to override the decisions of the Airport Land Use Commission.

California Department of Toxic Substances Control

The DTSC oversees soil remediation of sites contaminated by organochlorine pesticides. The agency has issued guidance for such activities: "Proven Technologies and Remedies Guidance, Remediation of Organochlorine Pesticides in Soil." The guidance is intended to expedite cleanup of sites with elevated concentrations of organochlorine pesticides in soils by limiting remediation activities to proven methods.

California Environmental Quality Act

When preparing an EIR for a project within airport land use plan boundaries or, in the absence of such a plan, within two nautical miles of a public airport or public use airport, a lead agency must use Caltrans' "Airport Land Use Planning Handbook" as a technical resource for assessing airport safety hazards and noise problems (Public Resources Code § 21096; State CEQA Guidelines § 15154(a)).

Notably, the California Supreme Court, in *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, recognized that Section 21096 created an exception to the general principle that "that agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents." The Court explained that "[a]lthough CEQA does not generally require an evaluation of the effects of existing hazards on future users of the proposed project, it calls for such an analysis in . . . specific contexts involving certain airport (§ 21096) . . . projects . . . " (62 Cal.4th at p. 391). "Section 21096 requires a lead agency to use certain technical resources when addressing airport-related safety hazards and noise problems in EIRs for projects near airports (§ 21096, subd. (a)) . . . " (62 Cal.4th at p. 391).

Local

City of Suisun City

General Plan

The Suisun City General Plan sets forth the following goals, objective, and policies relevant to:

Goal PHS-10 Reduce Potential Human Injury or Property Damage During the Manufacture, Storage, or Transportation of Hazardous Substances.

Objective PHS-10 Avoid and minimize health risk associated with hazardous materials.

Policy PHS-10.1 The City will assess risks associated with public investments and other City-initiated actions, and new private developments shall assess and mitigate hazardous materials risks and ensure safe handling, storage, and movement in compliance with local, State, and federal safety standards.

Goal PHS-16 Reduce the Potential for Human Injury or Property Damage Resulting from Activities at Travis Air Force Base.

Objective PHS-16 Promote the ongoing mission of Travis AFB, while avoiding local risks related to ongoing operations.

Policy PHS-16.1 The City will regularly coordinate closely with Travis AFB to ensure that existing and future land uses do not interfere with existing or planned operations at the Base.

Policy PHS-16.2 Notwithstanding other provisions of the plan, the City will restrict land uses and the height of development according to the requirements of the Travis AFB Airport Land Use Compatibility Plan.

County of Solano

Travis Air Force Base Land Use Compatibility Plan

The Travis Air Force Base Land Use Compatibility Plan sets forth recommendations to guide development and land use activities in the Airport Influence Area of Travis Air Force Base. The most recent version of the plan was adopted by the Solano County Airport Land Use Commission on October 8, 2015.

The plan identifies aviation noise contours and designates land use zones around the Air Base based on proximity to the runways. Development and land use activities that occur near the Air Base are regulated on the basis of exposure to aviation noise and relationship to aircraft overflight patterns.

A detailed discussion of the Travis Air Force Base Airport Land Use Compatibility Plan is provided in Section 3.8, Land Use.

Travis Reserve Area Zoning Overlay

The Travis Reserve Area Zoning Overlay was added to the Solano County Code in 2023 to implement the Travis Reserve Area and to protect land within the overlay for continued crop production and grazing uses as well as compatible nonavian habitat uses until a military use or other use clearly supporting the mission of the base is proposed for the land.

No new residential uses are permitted within the Travis Reserve Area Zoning Overlay, and new development or expansion of existing nonresidential uses is subject to discretionary review and shall not be approved unless found to be consistent with the purpose of the Travis Reserve Area Zoning Overlay.

Septic Systems and Wells

Solano County Code Chapter 6.4 and Chapter 13.10 govern the construction and destruction of septic systems and wells. Such activities require the issuance of a permit by the Solano County Environmental Health Services Division. County Code sets forth specific standards associated with destroying such systems. Only on-site sewage disposal system work specifically authorized by the construction permit may be performed. A copy of the approved permit and plans shall be kept at the job site while the work is in progress. To ensure installation of a safe, effective sewage disposal system and conformance with the County Code and all terms and conditions of the permit, the Environmental Health Services Division shall perform construction inspections as detailed in County Code Section 6.4-55.

An annual operation permit is required by Section 6.4-56. An alternative system shall be operated, maintained, and monitored pursuant to the requirements of the County Code the operation permit. Under terms of the operation permit, Division personnel shall conduct annual review of the performance and condition of the system. The Environmental Health Services Division may deny, suspend, or revoke a permit.

Additionally, Section 13.10 regulates the (1) construction, (2) reconstruction, (3) destruction, and (4) inactivation of water, cathodic protection, and monitoring wells in such a manner that the ground water of the county will not be contaminated or polluted and that water obtained from wells will be suitable for beneficial use and will not jeopardize the health, safety, or welfare of the county. Section 13.10-14 sets forth specific standards. The Program Manager may suspend or revoke a well permit issued under Chapter 13.10 whenever they determine that a condition resulting from any work performed under such a permit constitutes a nuisance, or when the applicant, his/her agents, employees, or the licensed well drilling contractor performing the work violates any permit or misrepresents any material facts in the application for a permit.

3.7.4 - Methodology

Youngdahl prepared a Phase I ESA in accordance with ASTM Practice E 1527-13. The complete Phase I ESA is provided in Appendix F. The methods of the Phase I ESA are described as follows.

Youngdahl conducted a government records review (via EDR), reviewed historic aerial photographs and topographic maps, performed site reconnaissance on September 24, 2015, and interviewed individuals familiar with past and present uses of the project site. The findings are summarized in the Phase I ESA, with supporting information appended. Although the Phase I ESA was more than 5 years old at the date of Notice of Preparation issuance, its findings are still considered valid because the surface and subsurface conditions of the project site have not substantially changed since the report was prepared.

FCS also reviewed the Caltrans Airport Land Use Planning Handbook and Travis Air Force Base Airport Land Use Compatibility Plan for information about aviation safety.

3.7.5 - Thresholds of Significance

CEQA Guidelines Appendix G is a sample Initial Study checklist that includes a number of factual inquiries related to the subject of hazards and hazardous materials, in addition to a series of other environmental topics. Notably, lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance for these subjects, or on any subject addressed in the checklist. (*Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1068). Rather, with few exceptions, "CEQA grants agencies discretion to develop their own thresholds of significance." (*Id*.) Even so, it is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G and to use that language in fashioning thresholds. The City has done so here, though it has also relied on professional judgment. Thus, for purposes of this Draft EIR, a significant impact would occur if implementation of the proposed project would:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

b) 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.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. (Refer to Section 7, Effects Found not to be Significant)

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working the project area.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (Refer to Section 7, Effects Found not to be Significant)

g) Expose people or structures, either directly or indirectly to a significant risk of loss, injury, or death involving wildland fires. (Refer to Section 7, Effects Found not to be Significant)

3.7.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the proposed project and provides mitigation measures where appropriate.

Routine Transport, Use, or Disposal of Hazardous Materials

Impact HAZ-1:	**The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.**

Impact Analysis

The proposed project consists of the development of 2.1 million square feet of high-cube warehouse uses on 120 acres of the project site.

Construction

Construction activities would entail the use of heavy equipment on the project site. Potential hazardous materials transported, used, or disposed of during project construction would be limited to commonly used substances such as gasoline, diesel, oil, grease, mechanical fluids, paints, and cleaning solvents. Construction equipment would be serviced by trained technicians and potentially hazardous materials would be stored in secured facilities. Furthermore, the safe handling of these commonly used substances is governed by occupational health and safety laws and regulations and construction contract requirements. Therefore, the use of this equipment and these substances during construction would not present any undue risks to the public or the environment.

Operations

High-cube warehouse facilities are typically used for distribution, fulfillment, and storage of non-hazardous commodities, goods, and manufactured products. As such, no large quantity hazardous materials users are contemplated as end users. In the unlikely event that a large quantity hazardous materials user were to become an end user, this would trigger permitting requirements with at a minimum the City of Suisun City and the County of Solano. This may include additional environmental review.

Project end users would be expected to handle small quantities of commonly used hazardous substances such as cleaning solvents, diesel, gasoline, grease/degreasers, mechanical fluids, and oil as part of daily operations. Given the small quantities involved and the characteristics of use (e.g., routine maintenance and cleaning), their use would not be considered a potential risk to human health or the environment. The use of acutely hazardous materials of any quantity that have the potential to result in releases that could potentially expose substantial numbers of people or the environment to harm is not anticipated by project end uses.

Conclusion

In summary, the operational activities associated with the proposed project would not create a significant hazard to the public or environment. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Risk of Upset

Impact HAZ-2: **The proposed project may create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.**

Impact Analysis

As discussed in Impact HAZ-1, construction activities would entail the use of heavy equipment on the project site. Potential hazardous materials transported, used, or disposed of during project construction would be limited to commonly used substances such as gasoline, diesel, oil, grease, mechanical fluids, paints, and cleaning solvents. Construction equipment would be serviced by trained technicians and potentially hazardous materials would be stored in secured facilities. Furthermore, the safe handling of these commonly used substances is governed by occupational health and safety laws and contractual requirements. Therefore, the use of this equipment and these substances during construction would not create a significant hazard to the public or environment from reasonably foreseeable upset or accident conditions.

As discussed in Impact HAZ-1, project end users would be expected to handle small quantities of commonly used substances such as cleaning solvents, diesel, gasoline, grease/degreasers, mechanical fluids, and oil as part of daily operations; large quantity use of hazardous materials or use of acutely hazardous materials of any quantity would not occur. In the unlikely event that a large quantity hazardous materials user were to become an end user, this would trigger permitting requirements with at a minimum the City of Suisun City and the County of Solano. This may include additional environmental review.

Pipelines

Several pipelines are located within or proximate to the project boundaries. These include (1) the JP-8 Underground Transfer Pipeline within Petersen Road, (2) a 16-inch-diameter PG&E natural gas pipeline that crosses the project site in an east–west direction, (3) a PG&E natural gas pipeline within Walters Road, (4) a PG&E natural gas pipeline within Petersen Road, and (5) a PG&E natural gas pipeline that follows the eastern boundary of the project site.

All of the pipelines would be left in place and protected during construction activities. Hazardous materials transmission pipelines are regulated by federal and State regulations that include the following:

- **Integrity Management Programs:** Pipeline operators are required to maintain Integrity Management Programs that involve regular inspections of pipelines for structural deficiencies. If structural deficiencies are observed, they must be corrected.
- **Supervisory Control and Data Acquisition (SCADA) System:** Pipeline operators are required to monitor their systems with SCADA systems. A SCADA system allows for remote monitoring of pipeline performance from a control center. If an unexpected parameter is observed (such as a sudden drop in pressure), the SCADA system has the ability automatically close pipeline blocks to isolate the affected segment.

- **Underground Service Alert of Northern California (USA North 811):** The USA North 811 system allows for construction excavators in Northern California and Nevada to request marking of underground utilities. Excavators enter a ticket into the USA North 811 system 2 to 14 days prior to excavation and then affected utility providers (including pipeline operators) will (1) mark or stake the horizontal path of their facility; (2) provide information about the location of their facility; or (3) advise the excavator of clearance for their facilities. A ticket is then issued to the excavator that is valid for 28 days from date of issuance.
- **Excavation Regulations:** State law requires that excavations that occur within 24 inches of a facility employ hand tools to expose it. Once exposed, it must be protected prior to using power equipment.

To summarize, hazardous materials pipelines must be routinely inspected and monitored to determine whether they are structurally sound. Excavations that occur near hazardous materials pipelines are required to first notify the USA North 811 system to identify the location of the facility and then comply with State regulations requiring exposure and protection of the facility during construction. In the unlikely event of a pipeline rupture caused by construction activities, the SCADA system would allow for real-time monitoring and automatic shutdown of the affected pipeline block. Mitigation Measure (MM) HAZ-2 requires that the aforementioned pipeline safety requirements be implemented prior to the first ground-disturbing activities. Implementation of these measures would ensure that construction personnel have properly identified the location of all pipelines and taken appropriate precautions to minimize hazards. With the implementation of mitigation, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HAZ-2 Prior to the first ground-disturbing activities, the applicant shall implement the following measures to protect underground pipelines:

- The applicant shall notify the Underground Service Alert of Northern California (USA North 811) system (or successor) to mark the location of all pipelines. Pipelines shall be marked prior to ground-disturbing activities.
- The location of all pipelines shall be shown on all relevant construction plans.
- Notes shall be provided on these plans advising contractors of the presence of the pipelines, safety measures to protect the pipeline (e.g., excavation regulations), and contact information for the pipeline operator.

Level of Significance After Mitigation

Less than significant impact.

Government Code Section 65962.5 Sites/Site Contamination

Impact HAZ-3: **The proposed project may be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.**

Impact Analysis

Cortese List

The Phase I ESA indicated that there were several nearby sites listed on regulatory databases including Bonfare Market, Travis Air Force Base, and the Potrero Hills Landfill. Of these sites, only the Bonfare Market at 1500 Walters Road had the potential to pose a risk to the proposed project. As indicated in Section 3.7.2, Environmental Setting, the results of a groundwater monitoring program show that residual contaminants in groundwater no longer exceed regulatory levels, and Solano County Department of Resource Management Environmental Health Division issued a "Case Closure" letter on June 30, 2017. However, the site is still included in the State Water Board's Geotracker database, but is noted as case closed.

Residual Concentrations of Hazardous Materials

The Phase I ESA noted that the project site has been utilized for agricultural land use activities for more than 70 years and previously supported several buildings that were constructed prior to the federal bans on ACMs and LBP. Thus, there is the potential that residual concentrations of pesticides, organochloride termiticides, ACMs, or LBP may be present on-site. Thus, MM HAZ-3a and MM HAZ-3b require the applicant to conduct further testing and investigations for these materials and abate any hazardous conditions found to be present prior to grading. This would ensure that any residual concentrations of hazardous materials are abated to health and safety standards and do not pose a substantial risk to human health or the environment.

Septic Systems and Wells

The Phase I ESA found evidence that septic systems and wells are currently present or were formerly present on-site. Therefore, MM HAZ-3c requires that the applicant destroy any unused septic system or wells in accordance with Solano County Code Chapter 6.4 and Chapter 13.10 prior to grading. This would ensure that the proposed project does not adversely impact groundwater resources through improperly abandoned wells or septic systems that serve as vectors for contamination.

In summary, with the implementation of MM HAZ-3a through MM HAZ-3d, all impacts would be reduced to a level of less than significant.

Radon

The California Department of Health Services has conducted 51 indoor radon tests in the three zip codes that comprise the Fairfield/Suisun City area and none yielded indoor radon levels above 4 pCi/l.

Moreover, the proposed project proposes slab-on-grade construction, which has a low susceptibility to radon intrusion. In contrast, buildings with subsurface spaces such as basements or parking garages have a much higher susceptibility to radon intrusion.

Electromagnetic Fields

There are no high voltage electrical facilities within 0.5 mile of the project site. The low voltage power lines near the project site would not be significant sources of EMFs. As such, the project site is not exposed to high levels of low-frequency EMFs.

Conclusion

The proposed project may be exposed to hazards or hazardous materials from past uses of the project site. The implementation of MM HAZ-3a through MM HAZ-3c would reduce impacts to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HAZ-3a Prior to issuance of the first grading permit, the project applicant shall retain a qualified hazardous materials contractor to conduct soil testing for the presence of residual concentrations of pesticides and organochlorine termiticides. The testing shall occur in accordance with California Department of Toxic Substances Control (DTSC) "Proven Technologies and Remedies Guidance, Remediation of Organochlorine Pesticides in Soil" or equivalent guidance. If residual concentrations exceed applicable standards for nonresidential development, the applicant shall abate or remove impacted soil prior to the first grading activities. As part of the grading permit application, the applicant shall submit documentation to the City confirming that soil testing occurred and that any necessary abatement activities were successfully completed.

MM HAZ-3b Prior to issuance of the first grading permit, the project applicant shall retain a qualified hazardous materials contractor to investigate the presence or absence of asbestos-containing materials (ACM) and lead-based paint (LBP). If ACMs or LBP is found to be present, they should be removed prior to the first grading activities. As part of the grading permit application, the applicant shall submit documentation to the City confirming that an investigation occurred and that any necessary abatement activities were successfully completed.

MM HAZ-3c Prior to issuance of the first grading permit, the project applicant shall retain a qualified hazardous materials contractor to investigate the presence or absence of septic systems or wells. If septic systems or wells are found to be present, they shall be destroyed in accordance with the procedures set forth in Solano County Code Chapter 6.4 (septic systems) and Chapter 13.10 (wells) unless they are proposed to be retained. As part of the grading permit application, the applicant shall submit documentation to the City confirming that an investigation occurred and that any necessary abatement activities were successfully completed.

Level of Significance After Mitigation

Less than significant impact.

Aviation Safety

Impact HAZ-4: The proposed project may result in a safety hazard for people residing or working the project area.

Impact Analysis

The project site is located within Zone B1 and Zone C of the Travis Air Force Base Land Use Compatibility Plan.

As discussed in Section 3.8, Land Use, the proposed industrial uses are consistent with the noise compatibility, density standards, and safety requirements for Zone C. The Caltrans Airport Land Use Planning Handbook was used as a technical resource in this evaluation.

Travis Air Force Base Land Use Compatibility Plan identifies hazards to aviation as land uses that emit glint, glare, or distracting lights that could be mistaken for airport lights; sources of dust, steam, high-velocity exhaust plumes; or smoke that may impair pilot vision. The proposed project consists of high-cube warehouses and would not emit sources of dust, steam, high-velocity exhaust plumes, or smoke. As indicated in Impact AES-3 in Section 3.3, Aesthetics, Light, and Glare, the proposed project would result in new sources of light and glare via exterior lighting and potentially solar panels. Exterior lighting would consist of illuminated signage, building-mounted lights, and freestanding lights that would be distributed throughout the developed portion of the project site. They would not be arranged in a manner that would resemble airport runway lighting and, thus, not create aviation hazards. MM AES-3, which requires the proposed project be designed to reduce light and glare hazards, would reduce the impact to a level of less than significant.

A detailed evaluation of project consistency with the Travis Air Force Base Land Use Compatibility Plan is provided in Section 3.8, Land Use.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement MM AES-3.

Level of Significance After Mitigation

Less than significant impact.

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3.8 - Hydrology and Water Quality

3.8.1 - Introduction

This section describes the existing hydrology and water quality setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on a Hydrologic and Water Quality Modeling prepared by Balance Hydrologics provided in Appendix G. Additional information was obtained through site reconnaissance, review of project plans, and review of resources, including the Suisun City General Plan, the California Department of Water Resources Bulletin 118, the Clean Water Act 303(d) list, and the Western Regional Climate Center.

3.8.2 - Environmental Setting

Climate and Meteorology

Suisun City is characterized by an inland Mediterranean climate with hot summers, mild winters, and moderate precipitation. Temperatures in Suisun City range from an average low of 37.6°F (degrees Fahrenheit) in January to an average high of 89°F in July. Average annual precipitation is 22.68 inches, with the majority of rainfall occurring between November and March. General meteorological data for the Suisun City area, as measured at the Fairfield weather station, are presented in Table 3.8-1.

Table 3.8-1: Suisun City Meteorological Summary

Month	Temperature (°F)		Precipitation (inches)
	Average Low	Average High	
January	37.6	55.4	4.77
February	41.1	61.5	4.04
March	43.3	65.9	3.09
April	45.8	71.1	1.39
May	50.3	78.0	0.55
June	54.0	84.4	0.17
July	56.0	89.0	0.02
August	56.0	88.8	0.06
September	54.5	86.6	0.24
October	49.8	78.3	1.30
November	42.7	65.4	2.75
December	37.9	56.0	4.3
Annual Average	**47.4**	**73.4**	**22.68**

Notes:
Period of record: December 4, 1950 to May 31, 2016.
Measurements recorded at Fairfield, California weather station (WRCC ID# 042934)
Source: Western Regional Climate Center. 2016.

Regional Hydrology

Solano County mostly consists of level topography of alluvial origin within a portion of the Central Valley. The Vaca Mountains, part of the Coast Ranges, are a prominent feature in the western portion of the county. The major streams in Solano County drain in an easterly or southerly direction from the Vaca Mountains to Suisun Marsh and the San Joaquin-Sacramento River Delta. Suisun City is situated on the north and east banks of Hill Slough, connected to Grizzly Bay by Suisun Slough, which drains to Suisun Bay.

Surface Water Bodies

The project site is within the Union Creek watershed, which drains to Suisun Marsh and ultimately Suisun Bay. Each waterbody is summarized as follows.

Union Creek

Union Creek is a blue line drainage that originates in southern Vacaville. Union Creek meanders to the southeast in a combination of natural channels and man-made channels before entering the Travis Air Force Base grounds. Within the air base, the waterway enters a culvert and emerges in open channel on the south side of the runway and meanders east of the project site to a culvert under State Route 12 (SR-12), and ultimately discharges into Hill Slough within the larger Suisun Marsh.

Suisun Marsh

Suisun Marsh is an approximately 116,000-acre brackish marsh located south of Suisun City and north of Grizzly Bay. The marsh includes approximately 52,000 acres of managed wetlands, 30,000 acres of bays and sloughs, 27,700 acres of uplands, and 6,300 acres of tidal wetlands. Within Suisun Marsh, Hill Slough drains to the south and west into Suisun Slough. Hill Slough is fed by several local creeks, including Laurel Creek, Ledgewood Creek, McCoy Creek, and Union Creek.

Suisun Bay/Grizzly Bay

Suisun Bay is a 25,335-acre shallow estuary located between the Carquinez Strait to the west and the confluence of the Sacramento River and San Joaquin River to the east. Grizzly Bay is a northern sub-embayment of Suisun Bay, which is composed of three main channels that flow east to west toward the Carquinez Strait. The deepest channel flows through the Suisun Cutoff, north of Ryer Island, and along the southern end of Grizzly Bay. All three channels join at the Carquinez Strait, where they continue through to the southern section of San Pablo Bay and into San Francisco Bay.

Impaired Water Bodies

Three downstream waterways—Suisun Marsh, Suisun Slough, and Suisun Bay—are listed on the 303(d) List of impaired waterbodies for various pollutants or stressors.[1] Table 3.8-2 summarizes the 303(d) Listings. As indicated in the table, the pollutants or stressors originate from a variety of sources including urban, resource, foreign, natural, and unknown.

[1] As discussed later in this chapter, Section 303(d) of the federal Clean Water Act (CWA) requires that the California State Water Resources Control Board (State Water Board) identify surface water bodies within California that do not meet established water quality standards. Once identified, the affected water body is included in the State Water Board's "303(d) Listing of Impaired Water Bodies"; and a comprehensive program must then be developed to limit the amount of pollutant discharges into that water body.

Table 3.8-2: Impaired Water Body Summary

Water Body	Pollutant/Stressor	Source(s)
Suisun Marsh	Mercury	Urban Runoff/Storm Sewers, Flow Regulation/Modification
	Nutrients	Urban Runoff/Storm Sewers, Flow Regulation/Modification
	Organic Enrichment/Low Dissolved Oxygen	Urban Runoff/Storm Sewers, Flow Regulation/Modification
	Salinity/Total Dissolved Solids/Chlorides	Urban Runoff/Storm Sewers, Flow Regulation/Modification
Suisun Slough	Diazinon	Urban Runoff/Storm Sewers
Suisun Bay	Chlorade	Nonpoint Source
	Dichlorodiphenyltrichloroethane (DDT)	Nonpoint Source
	Dieldrin	Nonpoint Source
	Dioxin Compounds	Atmospheric Deposition
	Furan Compounds	Atmospheric Deposition
	Invasive Species	Ballast Water
	Mercury	Resource Extraction, Natural Sources, Industrial Point Sources, Nonpoint Sources, Atmospheric Deposition
	Polychlorinated Biphenyls (PCBs)	Unknown Point Sources, Unknown Nonpoint Sources
	Selenium	Industrial Point Sources, Exotic Species, Natural Sources
Source: California State Water Resources Control Board (State Water Board). 2010.		

Existing Drainage Facilities

Two man-made drainage channels traverse the project site in a north-to-south direction. The channels enter the project site via culverts under Petersen Road and exit the site via culverts under SR-12. The channels ultimately discharge into Suisun Marsh. The channels convey runoff from the residential neighborhood north of the project site. Aside from the channels there are no other storm drainage facilities (e.g., basins, inlets, piping, etc.) within the project site.

Groundwater

Groundwater levels within the vicinity of the project site range from 6 to 9 feet below the ground surface. Groundwater flow is expected to follow the prevailing grade, which is generally southerly toward Hill Slough. In addition, the groundwater in the project vicinity is tidally influenced.

Existing Well

There is an existing groundwater well in the southern portion of the project site. The well is powered by a wind pump.

100-year Flood Hazard Areas

Exhibit 3.8-1 depicts the flood hazard areas within the project site. As shown in the exhibit, 100-year flood hazard areas are present within the lowest lying parts of the project site along Union Creek and SR-12.

Dams

Solano County General Plan Figure HS-3 indicates that the southern portion of the project site is within the hypothetical dam failure inundation area of Lake Curry reservoir in Napa County. Lake Curry, owned and operated by the City of Vallejo, is impounded by an earthen dam on Suisun Creek in the Vaca Mountains. The dam was constructed in 1926 and the reservoir has a maximum storage capacity of 10,700 acre-feet. The reservoir is not currently used for municipal purposes; water from Lake Curry is discharged into Suisun Creek for instream flow.

3.8.3 - Regulatory Framework

Federal

Clean Water Act

Section 303 of the Clean Water Act (CWA) requires states to adopt water quality standards for all surface waters of the United States. Water quality standards are typically numeric, although narrative criteria based upon biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards (see description the Porter-Cologne Water Quality Control Act, below). Standards are based on the designated beneficial use(s) of the water body. Where multiple uses exist, water quality standards must protect the most sensitive use.

Section 401 of the CWA requires any person applying for a federal permit or license that may result in the discharge of pollutants into waters of the United States (including wetlands) to obtain a state water quality certification. In California, such certifications are administered by the California State Water Resources Control Board (State Water Board) through the nine Regional Water Quality Control Boards (RWQCBs) (see a description of State regulations below). In order to acquire certification, it must be demonstrated that the activity complies with all applicable water quality standards, limitations, and restrictions. No license or permit by a federal agency may be granted until 401 certifications have been granted. Section 401 water quality certifications are typically required prior to obtaining a Section 404 permit from the United States Army Corps of Engineers (USACE).

Section 402 of the CWA mandates that certain types of construction activity comply with the requirements of National Pollutant Discharge Elimination System (NPDES) stormwater program. In California, any construction activity (apart from certain industrial activities, none of which are proposed for this project) that disturbs at least 1 acre is covered under the Construction General Permit issued by the State Water Board and implemented and enforced by RWQCBs.

Pursuant to Section 402 of the CWA and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), municipal stormwater discharges in the City of Suisun City are regulated under the San Francisco Bay RWQCB Municipal Regional Stormwater NPDES Permit (MRP), MS4 Order No. 2013-0001-DWQ (General Permit). In 1987, Congress amended the CWA to mandate controls on discharges from Municipal Separate Storm Sewer Systems (MS4s). Acting under the federal mandate and the California Water Code, RWQCBs require cities, towns, and counties to regulate activities that can result in pollutants entering their storm drains. All municipalities prohibit non-stormwater discharges to storm drains and require residents and businesses to use Best Management Practices (BMPs) to minimize the number of pollutants in runoff. The MRP is overseen by the San Francisco Bay RWQCB. On February 5, 2013, the State Water Board reissued the Phase II Stormwater NPDES Permit for small MS4s. Provision E.12, "Post-Construction Stormwater Management Program," mandates municipalities to require specified features and facilities—to control pollutant sources, control runoff volumes, rates, and durations, and to treat runoff before discharge from the site—be included in development plans of projects that create or replace 5,000 square feet or more impervious surface as conditions of issuing approvals and permits. The new requirements continue a progression of increasingly stringent requirements since 1989.

Provision E.12 required all municipal permittees to implement these requirements by June 30, 2015, to the extent allowed by applicable law. This included projects requiring discretionary approvals that had not been deemed complete for processing and discretionary permit projects without vesting tentative maps that had not requested and received an extension of previously granted approvals.

In July of 2014, the Bay Area Stormwater Management Agencies Association (BASMAA), through the BASMAA Phase II Committee, created the BASMAA Manual to assist applicants for development approvals to prepare submittals that demonstrate that their project complies with the NPDES permit requirements. Applicants who seek development approvals for applicable projects should follow the manual when preparing their submittals. The manual is designed to ensure compliance with the requirements and promote integrated Low Impact Development (LID) design.

Section E.12.c of the General Permit pertains to LIDs and how they relate to hydromodification management. This Permit provision requires that stormwater discharges not cause an increase in the erosion potential of the receiving stream over the existing condition. Increases in runoff flow and volume must be managed so that the post-project runoff does not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force.

Section 404 of the CWA requires that a permit be obtained from the USACE prior to any activity associated with discharge of dredged or fill material into waters of the United States, including wetlands.

Floodplains

The Federal Emergency Management Agency (FEMA) oversees floodplains and administers the National Flood Insurance Program (NFIP) adopted under the National Flood Insurance Act of 1968. The program makes federally subsidized flood insurance available to property owners within

communities who participate in the program. Areas of special flood hazard (those subject to inundation by a 100-year flood) are identified by FEMA through regulatory flood maps titled Flood Insurance Rate Maps (FIRMs). The NFIP mandates that development cannot occur within the regulatory floodplain (typically the 100-year floodplain) if that development results in more than a 1-foot increase in flood elevation. In addition, development is not allowed in delineated floodways within the regulatory floodplain.

Federal Executive Order 11988 (Floodplain Management) addresses floodplain issues related to public safety, conservation, and economics. It generally requires federal agencies constructing, permitting, or funding a project in a floodplain to do the following:

- Avoid incompatible floodplain development,
- Be consistent with the standards and criteria of the NFIP, and
- Restore and preserve natural and beneficial floodplain values.

Executive Order 11990 requires federal agencies to follow avoidance, mitigation, and preservation procedures, with public input, before proposing new construction in wetlands. It generally requires:

- Avoidance of wetlands,
- Minimization of activities in wetlands, and
- Coordination with the USACE and CWA Section 404 regarding wetlands mitigation.

State

Water Quality Statutes and Regulations

Section 303(d) of the CWA requires that the State Water Board identify surface water bodies within California that do not meet established water quality standards. Once identified, the affected water body is included in the State Water Board's "303(d) Listing of Impaired Water Bodies" and a comprehensive program must then be developed to limit the amount of pollutant discharges into that water body. This program includes the establishment of Total Maximum Daily Loads (TMDLs) for pollutant discharges into the designated water body. The most recent 303(d) listing for California was approved by the United States Environmental Protection Agency (EPA) in 2010.

The Porter-Cologne Act of 1969 authorized the State Water Board to provide comprehensive protection for California's waters through water allocation and water quality protection. The State Water Board implements the requirement of the CWA Section 303, indicating that water quality standards must be set for certain waters by adopting water quality control plans under the Porter-Cologne Act. The Porter-Cologne Act established the responsibilities and authorities of the nine RWQCBs, which include preparing water quality plans for areas in the region, identifying water quality objectives, and issuing NPDES permits and Waste Discharge Requirements (WDRs). Water quality objectives are defined as limits or levels of water quality constituents and characteristics established for reasonable protection of beneficial uses or prevention of nuisance. The Porter-Cologne Act was later amended to provide the authority delegated from the EPA to issue NPDES permits.

Post-construction stormwater controls to satisfy requirements of the NPDES Program are permitted under the Phase II Small Municipal Separate Storm Sewer System (MS4) Permit (Order R2-2015-0049). Facilities must be designed to evapotranspire, infiltrate, harvest/use, and bio treat stormwater. As of July 1, 2016, hydromodification management procedures are required.

Projects disturbing more than 1 acre of land during construction are required to comply with the Construction General Permit (Order No. 2009-0009-DWQ as amended by 2010-0014-DWQ, effective February 14, 2011; NPDES No. CAS000002). Construction General Permit activities are regulated at a local level by the RWQCB pursuant to a general permit. No site-specific authorization is needed. To obtain coverage under the Construction General Permit, a project applicant must provide a Notice of Intent, a Storm Water Pollution Prevention Plan (SWPPP), and other documents required by Attachment B of the Construction General Permit. Activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as grubbing or excavation.

The Construction General Permit uses a risk-based permitting approach and mandates certain requirements based on the project risk level (Level 1, Level 2, or Level 3). The project risk level is based on the risk of sediment discharge and the receiving water risk. The sediment discharge risk depends on project location and timing (such as wet season versus dry season activities). The receiving water risk depends on whether the proposed project would discharge to a sediment-sensitive receiving water. The determination of the project risk level would be made when the Notice of Intent is filed (once more details of the timing of the construction activity are known).

The performance standard in the Construction General Permit is that dischargers minimize or prevent pollutants in stormwater discharges and authorized non-stormwater discharges through the use of controls, structures, and BMPs. A SWPPP must be prepared by a qualified SWPPP developer that meets the certification requirements in the Construction General Permit. The purpose of the SWPPP is (1) to help identify the sources of sediment and other pollutants that could 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 as well as non-stormwater discharges resulting from construction activity. Operation of BMPs must be overseen by a qualified SWPPP practitioner who meets the requirements outlined in the permit.

Section 1600–1616 of the California Fish and Game Code requires that the California Department of Fish and Wildlife (CDFW) be notified of activity that will: substantially divert or obstruct the natural flow of any river, stream or lake; or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. If CDFW determines that the activity may substantially adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared that outlines reasonable conditions necessary to protect natural resources threatened by the proposed activity.

Stormwater Guidance Publications

California Stormwater Quality Association (CASQA), a professional organization, has published guidance for stormwater management. The organization's Stormwater Best Management Handbook provides guidance for compliance with State stormwater regulations for construction. CASQA also

published the New Development and Redevelopment Handbook, intended to provide individuals involved in development or redevelopment site water pollution control and planning general guidance for selecting and implementing BMPs to reduce pollutants in runoff in newly developed areas and redeveloped areas to waters of the state. This handbook also provides guidance on developing project-specific stormwater management plans including selection and implementation of BMPs for a particular development or redevelopment project. It provides the framework for an informed selection of BMPs. The handbook does not dictate the use of specific BMPs.

Caltrans also has published a Stormwater Quality Handbook Construction Site Best Management Practices Manual that provides similar guidance for transportation projects.

Local

City of Suisun City

General Plan

The Suisun City General Plan sets forth the following goals and policies relevant to hydrology and water quality:

Goal CFS-8 Provide storm drainage and flood protection systems that protect property, ensure public safety and environmental health, and prevent erosion and flooding.

Objective CFS-8 Maintain adequate storm drainage and plan for phased improvements to drainage infrastructure to serve new growth and address existing deficiencies.

Policy CFS-8.2 New developments will be required to construct and dedicate facilities for drainage collection, conveyance, and detention and/or contribute on a fair-share basis to areawide drainage facilities that serve additional demand generated by the subject project

Goal PHS-5 Maintain and Improve Water Quality.

Objective PHS-5 Maintain and improve water quality in a way that provides public and environmental health benefits.

Policy PHS-5.1 New development shall incorporate site design, source control, and treatment measures to keep pollutants out of stormwater during construction and operational phases, consistent with City and Fairfield-Suisun Urban Runoff Management Program standards.

Policy PHS-5.2 New developments shall incorporate Low Impact Development (LID) strategies, such as rain gardens, filter strips, swales, and other natural drainage strategies, to the greatest extent feasible, in order to reduce stormwater runoff levels, improve infiltration to replenish groundwater sources, reduce localized flooding, and reduce pollutants close to their source.

Policy PHS-5.3 New developments should minimize the land area covered with driveways, loading areas, and parking lots in order to reduce stormwater flows, reduce pollutants in urban runoff, recharge groundwater, and reduce flooding.

Policy PHS-5.4 New developments should use permeable surfaces for hardscape, where feasible.

Policy PHS-5.5 Industrial land uses with high wastewater generation rates or effluent pollutant concentrations may be required by the Fairfield-Suisun Sewer District to install equipment for pre-treatment of wastewater.

Goal PHS-11 Minimize the loss of life and damage to property caused by flood events.

Objective PHS-11 Manage land use change and plan for flood protection in way that is consistent with applicable federal and state guidelines.

Policy PHS-11.2 The City will use the most current flood hazard and floodplain information from state and federal agencies (such as the State Department of Water Resources, the Federal Emergency Management Agency, and the Army Corps of Engineers) as a basis for project review and to guide development, in accordance with federal and state regulations.

Policy PHS-11.4 The City will require evaluation of potential flood hazards before approving development projects.

Fairfield-Suisun Urban Runoff Management Program

Fairfield-Suisun Sewer District oversees the Fairfield-Suisun Urban Runoff Management Program. The program is intended to reduce or eliminate pollutants discharged from the urban environment into storm drains through inspection, education, and monitoring.

3.8.4 - Methodology

Descriptions and analysis in this section are based on the Hydrologic and Water Quality Modeling prepared by Balance Hydrologics provided in Appendix G as well as site reconnaissance, review of project plans, and review of resources including the Suisun City General Plan, the California Department of Water Resources Bulletin 118, the CWA 303(d) list, and the Western Regional Climate Center. Balance Hydrologics modeled stormwater flows using the USACE Hydrologic System hydrologic model.

3.8.5 - Thresholds of Significance

CEQA Guidelines Appendix G is a sample Initial Study checklist that includes a number of factual inquiries related to the subjects of hydrology and water quality, in addition to a series of other environmental topics. Notably, lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance for these subjects, or on any subject addressed in the checklist. (*Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1068). Rather, with few exceptions, "CEQA grants agencies discretion to develop their own thresholds of significance." (*Id*.) Even so, it is a common practice for lead agencies to take the language from the inquiries set

forth in Appendix G and to use that language in fashioning thresholds. The City has done so here, though it has also relied on professional judgment. Thus, for purposes of this Draft EIR, hydrology and water quality impacts resulting from the implementation of the proposed project would be considered significant if the project would:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

c) Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
   (i) result in substantial erosion or siltation on- or off-site;
   (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
   (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
   (iv) impede or redirect flood flows.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.8.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the proposed project and provides mitigation measures where appropriate.

Water Quality

Impact HYD-1:	**Construction activities and changes to drainage patterns associated with the proposed project may degrade surface water quality in downstream water bodies.**

Impact Analysis

This analysis assesses the potential for the proposed project to degrade surface water quality in downstream water bodies (Significance thresholds a and c).

The potential for the proposed project to degrade water quality arises from (1) short-term land disturbance from construction activities and presence of contaminants associated with construction machinery, and (2) long-term changes to land use and drainage patterns that may increase the delivery of sediments, nutrients, organic compounds, trash/debris, and other contaminants to waterways tributary to Suisun Marsh. Left unabated, increased loading of such pollutants could

cause geomorphic change in downstream channel reaches, degrade habitat, and undermine TMDL and other water quality requirements.

Construction activities would disturb approximately 120 acres of the project site and include grading, building construction, paving, and utility installation. Construction would require the use of gasoline and diesel-powered heavy equipment, such as bulldozers, backhoes, water pumps, and air compressors. Chemicals such as gasoline, diesel fuel, lubricating oil, hydraulic oil, lubricating grease, automatic transmission fluid, paints, solvents, glues, and other substances could be used during construction. An accidental release of any of these substances could degrade the quality of the surface water runoff and adversely affect receiving waters. As such, Mitigation Measure (MM) HYD-1a is proposed, requiring the development and implementation of a SWPPP to outline site-specific stormwater quality control measures (such as BMPs) during construction activities to prevent pollutants from entering downstream waterways. The various RWQCBs have evaluated the effectiveness of the types of BMPs required by MM HYD-1a and have determined that BMPs are known to be effective in protecting receiving waters[2]. With implementation of MM HYD-1a, impacts would be reduced to a less than significant level.

Post-construction, typical urban contaminants associated with roadways, parking areas, and rooftops will be introduced to the project site. Moreover, the increase in impervious area increases the efficiency by which sediment and other pollutants are delivered downstream. Concentration of flow by the storm drain system could increase the erosive energy of flows, thereby increasing sediment supply from the project site. Runoff from landscaped areas may also contain residual pesticides and nutrients. Consequently, there is potential for long-term degradation of runoff water quality from the implementation of the proposed project.

The project proposes the following post-construction stormwater management features, according to a three-tiered LID/BMP design approach:

- The purpose of site design BMPs is to maintain pre-development runoff characteristics, protect sensitive resource areas, and attempt to minimize new impervious areas. The site has been designed to limit the amount of disturbed area and new impervious areas.
- Source control BMPs use structural controls and operational procedures to limit pollutants at their source. The proposed project would implement the following source control BMPs: marking “No Dumping! Flows to River” on storm drain inlets; interior floor drains plumbed to sanitary sewer; careful management of pesticide use for landscaped areas; posting “Do Not Dump Hazardous Materials Here” on refuse areas; utilize enclosed trash compactors; grade loading docks to minimize run-on and contain spills; and draining parking areas to bioretention planters.
- Treatment control BMPs are designed to reduce the amount of pollutants in stormwater and to reduce runoff rates or volumes. All new impervious areas will be routed through either a bioretention basin or an infiltration planter. The floors of bioretention basins will be amended

[2] California State Water Resources Control Board (State Water Board) 2022. Storm Water Program. Best Management Practices (BMP) Databases. Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/bmp_database.html. Accessed March 17, 2022.

with a layer of gravel overlain by a layer of specialized biosoil. The biosoil will be a sandy loam material to promote infiltration while allowing for vegetation to establish. An underdrain will be installed to facilitate infiltration as the local soils have low infiltration potential. Bioretention basins have been configured to drain within 48 hours to prevent vector concerns.

MM HYD-1b is proposed requiring (1) that the Stormwater Control Plan be reviewed and verified by the City of Suisun City to ensure the proposed stormwater controls are adequate pursuant to the requirements Order No. R2-2015-0049 (or more recent permit), and (2) that an operation and maintenance program is in place to ensure the long-term functionality of the stormwater controls. The various RWQCBs have evaluated the effectiveness of the types of BMPs required by MM HYD-1b and have determined that BMPs are known to be effective in protecting receiving waters.[3] Impacts would be less than significant with mitigation.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HYD-1a Prior to issuance of grading permits for the proposed project, Suisun City shall verify that the applicant has prepared a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the requirements of the Statewide Construction General Permit. The SWPPP shall be designed to ensure that: (1) all pollutants and their sources, including sources of sediment associated with construction, construction site erosion, and all other activities associated with construction activity will be controlled; (2) where not otherwise required to be under a Regional Water Quality Control Board (RWQCB) permit, all non-stormwater discharges are identified and will be either eliminated, controlled, or treated; (3) site Best Management Practices (BMPs) will be effective and will result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity; and (4) stabilization BMPs will be installed to reduce or eliminate pollutants after construction is completed. The SWPPP shall be prepared by a qualified SWPPP developer. The SWPPP shall include the minimum BMPs required for the identified Risk Level. BMP implementation shall be consistent with the BMP requirements in the most recent version of the California Stormwater Quality Association (CASQA) Stormwater Best Management Handbook–Construction or the Caltrans Stormwater Quality Handbook Construction Site BMPs Manual. The SWPPP shall be implemented during construction.

MM HYD-1b Prior to the issuance of building permits, the project applicant shall submit a Stormwater Control Plan to the City of Suisun City for review and approval. The plan shall be developed using the California Stormwater Quality Association (CASQA) "New Development and Redevelopment Handbook" and reflect the applicable

[3] California State Water Resources Control Board (State Water Board) 2022. Storm Water Program. Best Management Practices (BMP) Databases. Website: https://www.waterboards.ca.gov/water_issues/programa/stormwater/bmp_database.html. Accessed March 17, 2022.

provisions of Section C.3 of the San Francisco Bay Regional Water Quality Control Board (RWQCB) Municipal Regional Permit (MRP) (Order No. R2-2015-0049, National Pollutant Discharge Elimination System [NPDES] Permit No. CAS612008) (or more recent permit). The Stormwater Control Plan shall identify pollution prevention measures and Best Management Practices (BMPs) necessary to control stormwater pollution from operational activities and facilities and provide for appropriate maintenance over time. The Stormwater Control Plan shall include Low Impact Development (LID) design concepts, as well as concepts that are intended to accomplish a "first flush" objective that would remove contaminants from the first 2 inches of stormwater before it enters area waterways. The project applicant shall also prepare for City approval and enter into an Operations and Maintenance Agreement with the City identifying procedures to ensure that stormwater quality control measures work properly during operations.

Level of Significance After Mitigation

Less than significant impact.

Groundwater

Impact HYD-2: The proposed project would not deplete groundwater supplies or interfere substantially with groundwater recharge.

Impact Analysis

This analysis assesses the potential for the proposed project to deplete groundwater supplies or interfere substantially with groundwater recharge (Checklist question b).

Groundwater Overdraft

Groundwater overdraft refers to pumping more than the safe yield of aquifer. Groundwater overdraft has not been documented in the project vicinity because (1) surface water is the primary municipal water source and (2) the absence of cultivated agricultural uses, which are typically large groundwater producers.

The proposed project would be primarily served with potable water service provided by Suisun-Solano Water Authority (SSWA). Although it is not necessary to meet the project's water needs, there is an existing groundwater well on-site. Groundwater levels exhibit stable long-term trends.[4] Therefore, the proposed project would not exacerbate groundwater overdraft (to the extent that it exists) or conflict with the provisions of a sustainable groundwater management plan. Impacts would be less than significant.

Groundwater Recharge

Groundwater recharge is the process by which water percolates into the aquifer. The proposed project would result in an increase in additional impervious surfaces. However, the project site is at a relatively low elevation and is near Suisun Marsh; thus, groundwater levels tend to be high and soils

[4] Solano County and Solano Subbasin A Groundwater Sustainability Annual Report - Water Year 2023. Website: https://www.solanogsp.com/wp-content/uploads/2024/04/5-022.66_WY_2023_Compressed.pdf. Accessed May 30, 2024

in the lowest portions of the site are often saturated. Accordingly, the groundwater recharge potential of the project site is limited. For these reasons, impacts to groundwater recharge would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Drainage

Impact HYD-3:	**The proposed project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems.**

Impact Analysis

This impact assesses the potential for the proposed project to create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or cause flooding on- or off-site (Checklist questions d and e). This analysis is based on the Hydrology Report provided in Appendix G.

The proposed project would result in the development of 2.1 million square feet of new industrial development and infrastructure on 120 acres of the project site. The remaining 47 acres would be preserved as open space. Thus, the proposed project would increase the amount of impervious surface coverage on the project site and would create the potential for increased runoff leaving the project site that may create potential flooding conditions in downstream waterways.

The proposed project would install a storm drainage system designed for a 15-year storm event, in accordance with City design standards. Inlets would capture surface runoff, where it would enter an underground piping system that would convey stormwater to one of four basins. The basins would provide 323,280 square feet (7.6 acres) of stormwater retention.

The two existing drainage channels that cross the project site would be abandoned. A new drainage channel would divert runoff from the west channel culvert at Petersen Road to a new east channel that would connect to the existing east culvert under SR-12. Table 3.8-3 summarizes the pre- and post-project flow rates at the SR-12 culvert. As shown in the table, the post-project flow rates would less than the pre-project flow rates during a 2-year storm event and 25-year storm event; they would only be slightly higher than the pre-project flow rates during a 100-year storm event. Thus, the existing culvert would not need to be upsized to accommodate the project's runoff.

Table 3.8-3: Peak Flow Summary

Storm Event	Inflow to State Route 12 Culvert (Cubic Feet per Second)	
	Pre-Project	Post-Project
2-year	263.4	241.2
25-year	531.7	516.3
100-year	660.2	660.7
Source: Balance Hydrologics. 2022.		

In accordance with applicable provisions of Section C.3 of the San Francisco Bay RWQCB MRP (Order No. R2-2015-0049, NPDES Permit No. CAS612008) (or more recent permit) as required under MM HYD-1b and pursuant to provisions of the Fairfield-Suisun Urban Runoff Management Program, the proposed project would implement LID stormwater management methods into the on-site storm drainage system consisting of rainwater harvesting and use, infiltration, evapotranspiration, or biotreatment.

Collectively, these measures would serve to slow, reduce, and meter the volume of runoff leaving the project site and ensure that downstream storm drainage facilities are not inundated with project-related stormwater. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

100-year Flood Hazard Areas

Impact HYD-4: **The proposed project would not place housing or structures within a 100-year flood hazard area.**

Impact Analysis

FEMA flood hazard areas are present within the lowest lying parts of the project site near SR-12. The proposed project would preserve 47 acres of the project site as open space, which would coincide with the 100-year flood hazard areas. Therefore, the proposed project would not place structures within a 100-year flood hazard area. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Levee or Dam Failure

Impact HYD-5: The proposed project would not be susceptible to inundation from dam failure.

Impact Analysis

Solano County General Plan Figure HS-3 indicates that the southern portion of the project site is within the hypothetical dam failure inundation area of Lake Curry in Napa County. Lake Curry is impounded by an earthen dam constructed in 1926 and the reservoir has a maximum storage capacity of 10,700 acre-feet. The reservoir is not currently used for municipal purposes; water from Lake Curry is discharged into Suisun Creek for instream flow.

The California Department of Water Resources Division of Safety of Dams oversees dam safety and requires local dam operators to maintain records concerning maintenance, operation, staffing, and engineering and geologic investigations that pertain to their facilities. Division of Safety of Dams personnel have the ability to inspect dams for safety and require operators to implement corrective measures if deficiencies are found. Additionally, the Division of Safety of Dams oversees alteration and repair of dams. The City of Vallejo is responsible for compliance with State laws that pertain to the safety of the Lake Curry Dam.

Furthermore, the dam has been operational for more than 90 years without any documented incidents of dam failure. Additionally, there are no restrictions on Lake Curry (such as maximum water elevation) that are intended to abate any concerns about the structural integrity of the dam. This indicates that the likelihood of catastrophic dam failure is remote and unlikely to occur.

Lastly, in the unlikely event of dam failure, the inundation area coincides with the 47 acres of the project site proposed as open space. No structures would be affected under this scenario. Impacts would be less than significant.

Notwithstanding all of the above, this particular category impact is outside the scope of CEQA, as it is concerned with the potential of existing environmental hazards to adversely affect future project users. In *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, 377 ("*CBIA*"), the California Supreme Court held that "agencies subject to CEQA generally are *not* required to analyze the impact of existing environmental conditions on a project's future users or residents." (Italics added.) The court did not hold that CEQA never requires consideration of the effects of existing environmental conditions on the future occupants or users of a proposed project. But the circumstances in which such conditions may be considered are narrow: "when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. 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." (*Id*. at pp. 377-378, italics added).

In light of the *CBIA* decision, the City is not required by CEQA to address the extent to which existing risks associated with the dam at Lake Curry could affect future occupants or users of lands that might be developed in the future. Future development under the proposed project does not create any risk of exacerbating whatever risks exist with respect to the dam at Lake Curry. Thus, readers should treat the discussion of this impact on future project residents and users as being beyond the scope of CEQA. The discussion has been provided to the public on a voluntary basis in the interests of full disclosure.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

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3.9 - Land Use

3.9.1 - Introduction

This section describes the existing land use and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on-site reconnaissance and review of the Suisun City General Plan, Suisun City Municipal Code, Travis Air Force Base Land Use Compatibility Plan, the Travis Air Force Base Sustainability Study Report, and Solano Local Agency Formation Commission standards and policies.

3.9.2 - Environmental Setting

Land Use

Project Site

The approximately 167-acre project site is used for cattle grazing and contains grassy vegetation. The project site gently slopes from north to south and the elevation ranges from 18 feet in the northern portion to 10 feet above mean sea level in the southern portion. A windmill (or windpump) is located in the southern portion of the site that is used to pump groundwater from a well.

Two man-made drainage channels cross the site in a north–south direction. The southern portion of the project site overlaps with a 100-year flood plain. A 16-inch-diameter Pacific Gas and Electric Company (PG&E) underground natural gas transmission pipeline crosses through the project site in an east–west direction within a 15-foot-wide easement. A 100-foot power line easement crosses the project site in an east–west direction. A barbed wire fence surrounds the project site. A photograph of the project site is provided in Chapter 2, Project Description, Exhibit 2-3.

Surrounding Area

West

A service station located in the city limits and Walters Road, a four-lane divided arterial roadway, form the western boundary of the project site. West of Walters Road are a Walmart store and associated parking areas.

North

Petersen Road, a three-lane undivided roadway forms the northern boundary of the project site. North of Petersen Road are a fuel station/convenience store, Four Seasons RV Boat-Self Storage, undeveloped land, and the Lambrecht Sports Complex. Further north is the Montebello single-family residential neighborhood.

East

Undeveloped privately owned land used for dry land farming (hay production) and grazing is located east of the project site. Further east is Travis Air Force Base. Runway 3 L/21 R is 0.75 mile east of the project site.

South

State Route (SR) 12, a four-lane divided State highway that transitions to two lanes east of Walters Road, forms the southern boundary of the project site. South of SR-12 are undeveloped marshland and the Potrero Hills Landfill. To the southwest is the Lawler Ranch single-family residential neighborhood.

Land Use Designations

Project Site

The project site is currently located in unincorporated Solano County (County) but is within the Suisun City Sphere of Influence (SOI). Accordingly, both the County and City land use designations are presented for informational purposes. County land use designations are currently operative and will remain so as long as the project site remains in the County unincorporated area; City land use designations would become operative if the Suisun City Council prezones the project site and seeks and obtains annexation of the property from the Solano County Local Agency Formation Commission (LAFCo).

Solano County General Plan and Zoning

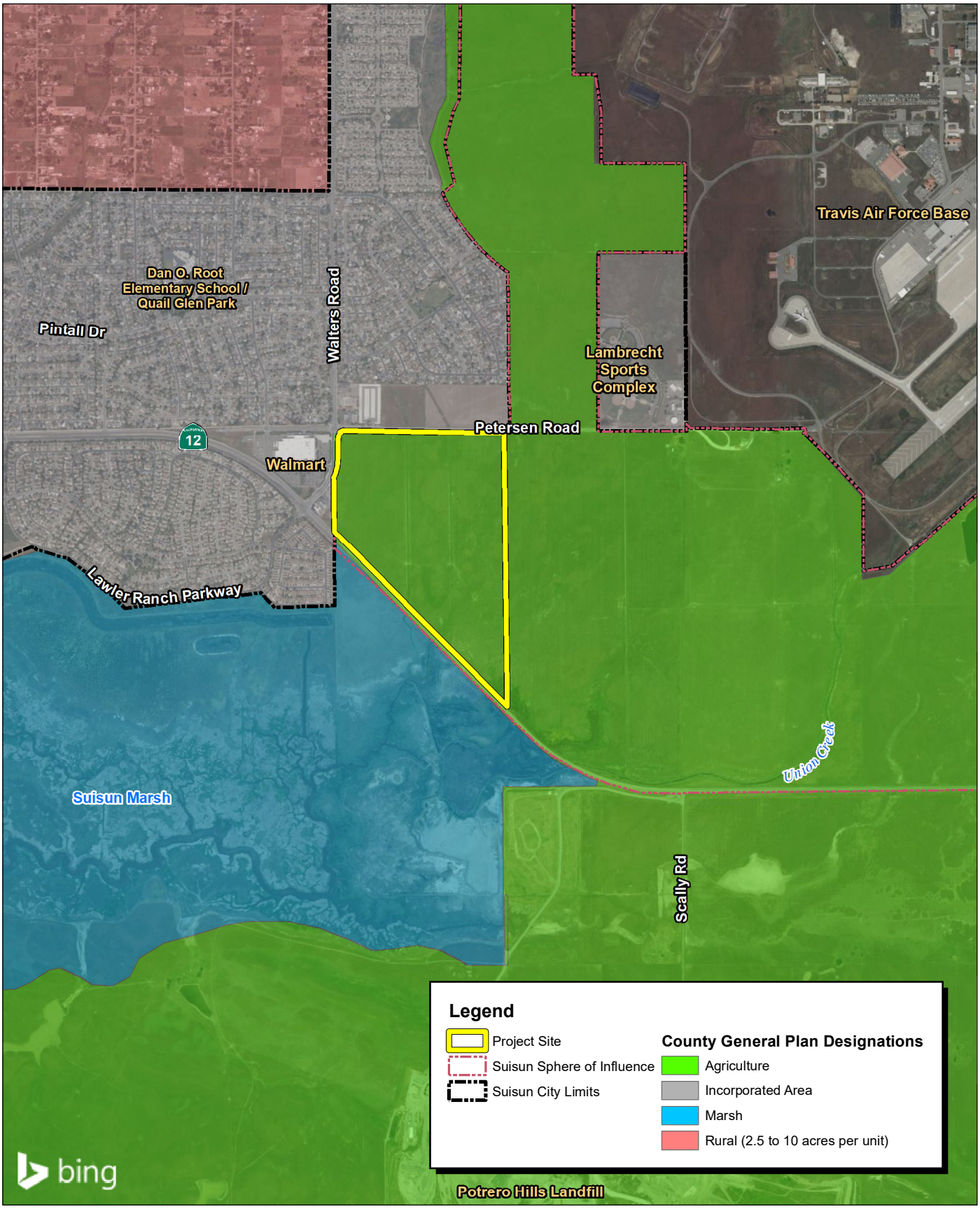
The project site is designated "Agricultural" by the Solano County General Plan and zoned "A-160 (Exclusive Agriculture 160 Acres)" by the Solano County Zoning Ordinance. The southeastern portion of the project site is within the Solano County General Plan's "Travis Reserve Overlay." Exhibit 3.9-1 depicts the existing Solano County General Plan land use designations. Exhibit 3.9-2 depicts the existing Solano County zoning.

City of Suisun City General Plan

The project site is designated "Special Planning Area" by the Suisun City General Plan, which is a non-legally binding designation. Exhibit 3.9-3 depicts the Suisun City General Plan land use designations.

Travis Air Force Base Airport Land Use Compatibility Plan

The project site overlaps with Zone C (Traffic Pattern) and Zone B1 (Inner Approach/Departure) of the Travis Air Force Base Airport Land Use Compatibility Plan, and, thus, new development activities that occur on the site are subject to review by the Solano County Airport Land Use Commission. Exhibit 3.9-4 depicts the airport land use compatibility zones.



Source: Bing Aerial Imagery.

FIRSTCARBON SOLUTIONS™

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Exhibit 3.9-1
Solano County General Plan Land Use Designations

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Source: Bing Aerial Imagery.

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Exhibit 3.9-2
Solano County Zoning Districts

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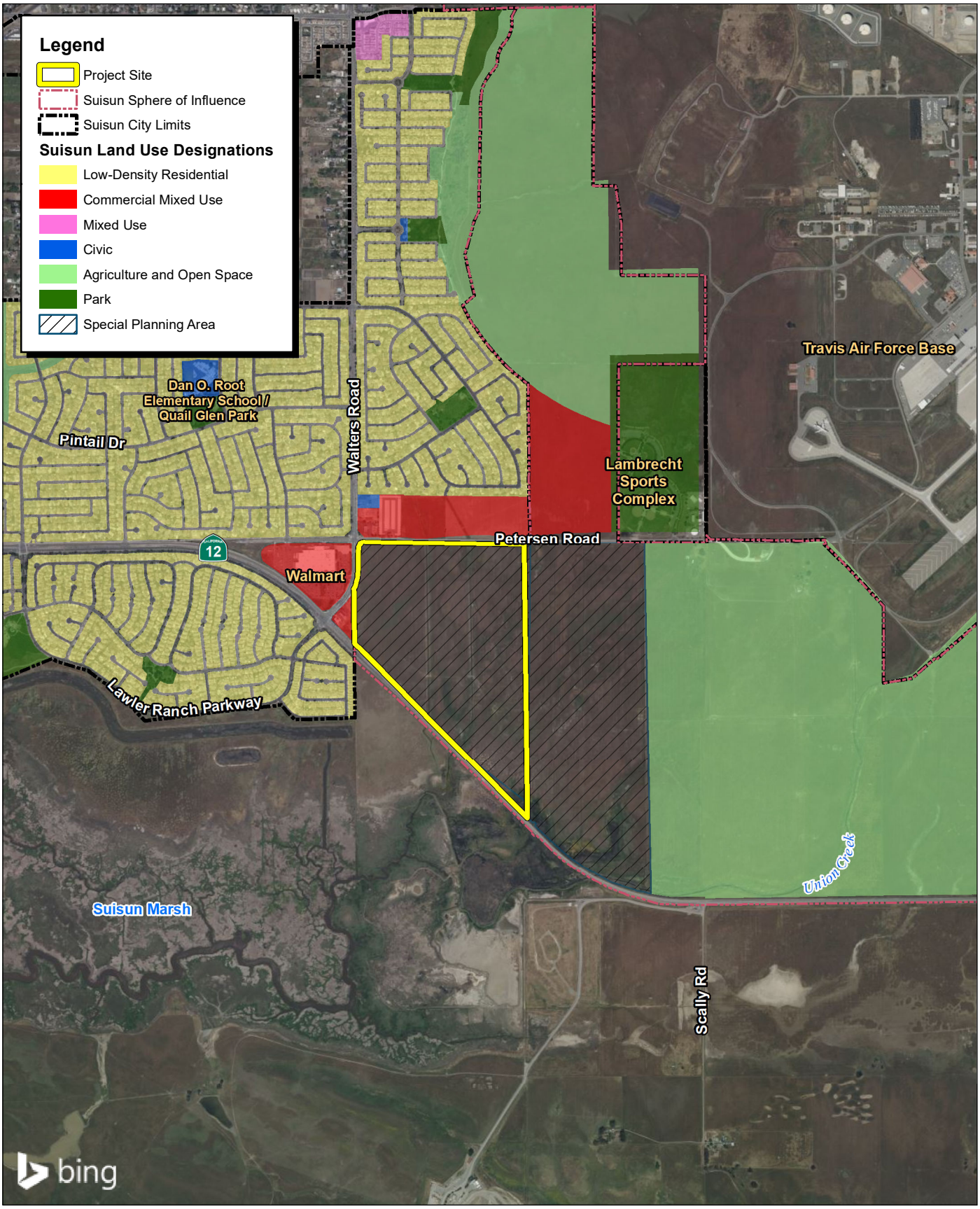

Source: Bing Aerial Imagery.

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Exhibit 3.9-3
City of Suisun City General Plan Land Use Designations

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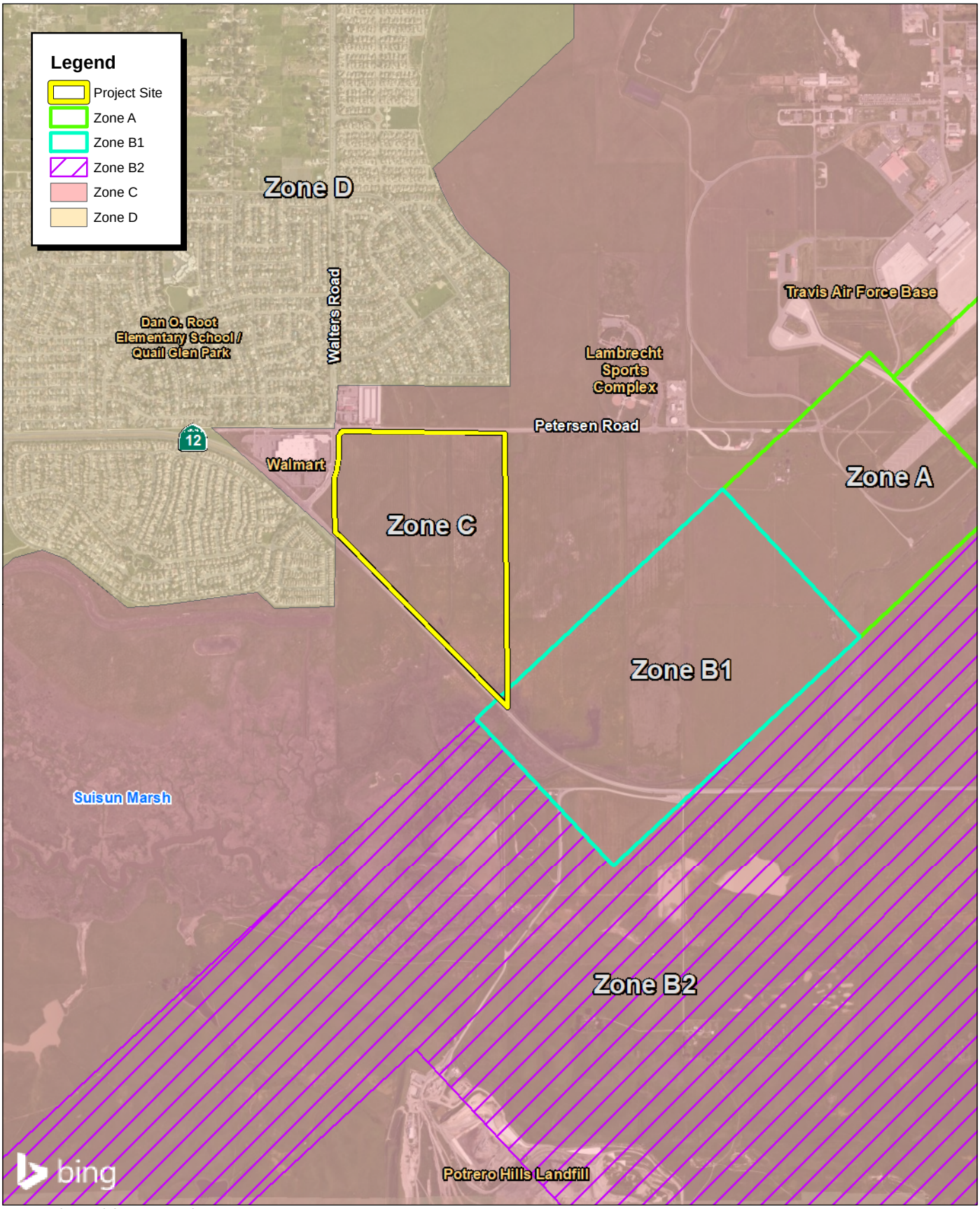

Source: Bing Aerial Imagery. Solano County, 2020.

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Exhibit 3.9-4
Land Use Compatibility Zones

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Surrounding Land Uses

Table 3.9-1 summarizes the applicable General Plan and Zoning designations of surrounding land uses.

Table 3.9-1: Surrounding Land Use Designations

Land Use	Jurisdiction	Relationship to Project Site	Land Use Designation	
			General Plan	Zoning
Fuel Station/ Convenience Market (AM/PM)	City of Suisun City	West	Commercial Mixed Use	CG (General Commercial)
Walmart	City of Suisun City	West	Commercial Mixed Use	CG (General Commercial)
Fuel Station/ Convenience Market (Bonfare)	City of Suisun City	North	Commercial Mixed Use	CG (General Commercial)
Storage Facility	City of Suisun City	North	Commercial Mixed Use	CG (General Commercial)
Undeveloped Land	Unincorporated Solano County	North	Agricultural	A-160
Lambrecht Sports Complex	City of Suisun City	North	Park	P
Grazing Land	Unincorporated Solano County	East	Agricultural	A-160
Suisun Marsh	Unincorporated Solano County	South	Marsh (Resource Conservation Overlay) and Agricultural (Resource Conservation Overlay)	MP ASM-160
Source: City of Suisun City. 2021; Solano County. 2021.				

Travis Air Force Base

Travis Air Force Base is located approximately 0.53 mile east of the project site. The Air Base encompasses 6,260 acres and provides three runways: 3L/21R (11,001 feet x 150 feet), 3R/21L (10,992 feet x 150 feet), and 32/212 (3,500 feet x 90 feet). The two long runways are Class B facilities designed and constructed for sustained heavy aircraft landings and takeoffs. The short runway is an Assault Landing Zone for C-17 Globemaster III landings and takeoffs.

The host unit of the Air Base is the 60th Air Mobility Wing, which has a fleet of C-5M Galaxy and C-17 Globemaster III cargo aircraft and KC-10 Extenders refueling aircraft. The Wing received KC-46 Pegasus refueling aircraft in 2023, replacing the KC-10 Extender. The Wing is the largest air mobility organization in the Air Force and is responsible for strategic airlift and aerial refueling missions around the world.

Approximately 80 percent of the Travis Air Force Base aviation operations involve landings from the northeast and takeoffs toward the southwest over Suisun Marsh.

3.9.3 - Regulatory Framework

State

State Aeronautics Act

The State Aeronautics Act requires each county with an airport to establish an Airport Land Use Commission to regulate land use around airports in order to protect public safety and ensure that land uses near airports do not interfere with aviation operations. The Travis Air Force Base Land Use Compatibility Plan regulates land use around Travis Air Force Base by requiring compliance with the Travis Air Force Base Land Use Compatibility Plan. In certain circumstances, local governments have the ability to override the decisions of the Airport Land Use Commission.

Cortese-Knox-Hertzberg Local Government Reorganization Act

In California, there is a LAFCo in each county, consistent with the requirements of Section 56001 of the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (Government Code § 56000 *et seq*.). Each LAFCo is intended to encourage orderly growth and development essential to the social, fiscal, and economic well-being of the State. Specific elements established by the Act encourage orderly development patterns by discouraging urban sprawl and preserving open space and prime agricultural lands. In order to implement the requirements listed above, LAFCo's have the specific authority to review the following actions:

- Annexations to, or detachment from, cities or districts;
- Formations or dissolution of districts;
- Incorporation or dis-incorporation of cities;
- Consolidation or reorganization or cities and districts;
- Establishment of subsidiary districts; and
- Development of, and amendments to, spheres of influence.

The objectives of a LAFCo are to encourage the orderly formation of local government agencies, preserve agricultural land, and discourage urban sprawl. LAFCo's review proposals for the formation of new local government agencies and regulate changes, such as boundary lines, of existing agencies. A LAFCo is the entity that evaluates proposals for the creation of cities or special districts, as well as proposals to annex additional land to local jurisdictions.

Government Code Section 56300 provides that all LAFCo's must exercise their powers "in a manner that encourages and provides planned, well-ordered, efficient urban development patterns with appropriate consideration of preserving open space and agricultural lands within those patterns." Section 56377 states that, in reviewing "proposals" that "could reasonably be expected to induce, facilitate, or lead to the conversion of existing open space lands to uses other than open space uses," LAFCo's shall consider the following policies: "development or use of land for other than open space uses shall be guided away from existing prime agricultural lands, unless that action would not promote the planned, orderly, efficient development of an area"; and "development of existing

vacant or nonprime agricultural lands for urban uses within the existing jurisdiction of a local agency or within the SOI of a local agency should be encouraged before any proposal is approved which would allow for or lead to the development of existing open space lands for non-open space uses which are outside of the existing jurisdiction of the local agency or outside of the existing SOI of the local agency."

Section 56668 provides that, in reviewing a "proposal," a LAFCo shall consider all of the following:

a) Population and population density; land area and land use; per capita assessed valuation; topography, natural boundaries, and drainage basins; proximity to other populated areas; the likelihood of significant growth in the area, and in adjacent incorporated and unincorporated areas, during the next 10 years.

b) Need for organized community services; the present cost and adequacy of governmental services and controls in the area; probable future needs for those services and controls; probable effect of the proposed incorporation, formation, annexation, or exclusion and of alternative courses of action on the cost and adequacy of services and controls in the area and adjacent areas.

c) The effect of the proposed action and of alternative actions, on adjacent areas, on mutual social and economic interests, and on the local governmental structure of the county.

d) The conformity of both the proposal and its anticipated effects with both the adopted LAFCo policies on providing planned, orderly, efficient patterns of urban development, and the policies and priorities set forth in Section 56377.

e) The effect of the proposal on maintaining the physical and economic integrity of agricultural lands.

f) The definiteness and certainty of the boundaries of the territory, the nonconformance of proposed boundaries with lines of assessment or ownership, the creation of islands or corridors of unincorporated territory, and other similar matters affecting the proposed boundaries.

g) Consistency with city or county general and specific plans.

h) The Sphere of Influence of any local agency which may be applicable to the proposal being reviewed.

i) The comments of any affected local agency.

j) The ability of the newly formed or receiving entity to provide the services which are the subject of the application to the area, including the sufficiency of revenues for those services following the proposed boundary change.

k) Timely availability of water supplies adequate for projected needs.

l) The extent to which the proposal will affect a city or cities and the county in achieving their respective fair shares of regional housing needs.

m) Any information or comments from the landowner or owners.

n) Any information relating to existing land use designations.

This Draft Environmental Impact Report (Draft EIR) would be used by the Solano County LAFCo during its review of the proposed annexation of the project area to the City of Suisun City.

Regional

Solano County Local Agency Formation Commission

The Solano County LAFCo is an independent agency responsible for the regional implementation of the Cortese-Knox-Hertzberg Local Government Reorganization Act. The Solano County LAFCo must observe four basic statutory purposes of the Act: the discouragement of urban sprawl; the preservation of open space and prime agricultural land resources; the efficient provision of government services; and the encouragement of orderly growth boundaries based upon local conditions and circumstances. In addition to taking into account factors set forth in State law, the Solano County LAFCo has its own standards and policies that it considers when determining whether to coordinate changes in local government boundaries, including:

- Standard Three: The proposal's consistency with the City's general plan and zoning ordinance.
- Standard Seven: The proposal's boundary. The Commission's policy requires cities to annex entire street sections whenever possible and favors annexing entire parcels. Note that the annexation area identified in the City's NOP is slightly less than the acreage of the entire parcel. The proposal area should be the entire parcel and adjacent streets.
- Standard Eight: The likelihood of significant growth and effect on other incorporated and unincorporated territory. As noted in the policy, Standard Eight is designed to discourage urban sprawl and encourage orderly growth. It also requires the applicant to identify all lands currently within the City's jurisdiction intended for or committed to similar land uses and how the proposal relates to them. This Standard also requires the applicant to submit a market study that: defines the market area for the project, describes anticipated demand over the next 10 years within the market area, identifies the supply of land that can be used within the market area, and shows the consistency of the proposal with the City's growth strategy and infill goals.
- Standard Nine: Protection of prime agricultural land. The EIR should identify all prime agricultural lands within the project site as defined in Government Code Section 56064 and address the impacts of the project on those lands.
- Standard Eleven: The effects of the proposed action on: adjacent areas, mutual social and economic interests, and local governmental structure. The EIR should discuss the project's effect on adjacent areas, both within and outside of the City's boundary, and discuss the overall beneficial aspects compared to the potential negative impacts. Per the SOI Conditions of Approval, the Commission is mostly concerned with the potential impacts to Travis Air Force Base.

- Plan for Providing Services (Plan): The Commission requires applicants to submit a thorough Plan as part of their reorganization application per Government Code Section 56653. The Plan should include the following information: a description of the services to be extended by the City to the affected territory, such as sewer, water, police protection, fire protection, adequate roadways, and other municipal services; the anticipated demand for those services; how the services will be financed; and an indication of when the City can extend services to the territory.

Local

City of Suisun City

General Plan

The Suisun City General Plan serves as a "blueprint" for future development and land use activities within the city limits. The General Plan Update was adopted on May 5, 2015, by the Suisun City Council and consists of the following elements: Community Character and Design; Land Use; Transportation; Economic Development; Housing; Open Space and Conservation; Community Facilities and Services; and Public Health and Safety. Each element sets forth goals, objectives, policies, and programs to guide future development and land use activities.

Special Planning Area Land Use Designation

The project site is designated "Special Planning Area" by the Suisun City General Plan, which is a non-binding designation. General Plan Policy LU-4.9 states the following about the "Special Planning Area" land use designation for the project site:

> The City will work collaboratively with landowners in the eastern portion of the Planning Area within "Special Planning Area" (see Exhibit 3-10) on comprehensive suitability analysis and planning to guide long-term development and conservation. Suitability analysis and planning for the Special Planning Area shall address, consistent with the balance of the 2035 General Plan, important opportunities and constraints in this area related to biological, recreational, land use and transportation, community character and design, public services and infrastructure, and fiscal and economic issues.

Additionally, Program LU-4.5 states the following about the Special Planning Area:

> The City will collaborate with landowners and responsible and trustee agencies on comprehensive planning for the Special Planning Area in the eastern portion of the City's Planning Area.
>
> This planning process will occur through the following steps:
>
> - Analyze and survey on-site constraints.
> - Provide a conceptual map and a narrative description of basic project objectives, consistent with the 2035 General Plan.

- Prepare a basic land use and circulation plan framework that implements the 2035 General Plan.
- Conduct detailed site analysis, master planning, and infrastructure and service finance plans.
- Identify and provide planning response to each major constraint affecting this portion of the Planning Area.
- Publish required studies to support LAFCo actions.
- Identify and mitigate Special Planning Area impacts consistent with the 2035 General Plan through up-front planning and, as necessary, follow-up mitigation and monitoring.
- Prepare and certify/adopt plans and environmental documents in support of Special Planning Area development.

Long-term planning could be in the form of one or more specific plans, one or more master plans, or another mechanism approved by the City. Suitability analysis and planning for this area shall address key opportunities and constraints, including but not limited to:

- Truck traffic, including Travis Air Force Base traffic.
- Access management along Petersen Road and State Route 12.
- Parking management and public transit planning, particularly for Lambrecht Sports Park and other recreational facilities proposed in Special Planning Area 1.
- Planning to identify, survey, avoid, and mitigate biological resources impacts consistent with the City's Open Space and Conservation Element.
- Coordinated drainage/wetlands/bike and pedestrian planning that takes advantages of opportunities to preserve drainages, while also adjacent multi-use trails.
- Travis Air Force Base land use compatibility planning and opportunities for mutually beneficial biological resources mitigation planning in areas near Travis Air Force Base.
- Fiscal and economic impact analysis with a coordinated development phasing plan.
- Coordinated public services and infrastructure planning involving the City and other relevant services agencies, consistent with City and LAFCo policies.

During preparation of the 2035 General Plan, the City has coordinated with LAFCo and other responsible agencies. For certain impact areas, much of the required LAFCo analysis may have been addressed in the analysis and planning that has supported the 2035 General Plan Update. In other areas, more detailed on-site analysis may be needed.

City Code

The Suisun City Code contains 17 titles that establish specific regulations for development and land use activities within the city limits. Title 18 contains the Zoning Ordinance. The Zoning Ordinance establishes zoning districts and regulates development and land use activities based on restrictions on end uses and development standards.

County of Solano

General Plan

The Solano County General Plan guides future development and land use activities within unincorporated Solano County. The General Plan consists of the following elements: Land Use; Agriculture; Resources; Public Health and Safety; Economic Development; Transportation and Circulation; Public Facilities and Services; Housing; and the Tri-City and County Cooperative Plan for Agriculture and Open Space Preservation. Each element sets forth goals, objectives, policies, and programs to guide future development and land use activities.

Agriculture

The project site is designated "Agriculture" by the Solano County General Plan. The "Agriculture" land use designation is described as follows by the General Plan:

> Provides areas for the practice of agriculture as the primary use, including areas that contribute significantly to the local agricultural economy, and allows for secondary uses that support the economic viability of agriculture. Agricultural land use designations protect these areas from intrusion by nonagricultural uses and other uses that do not directly support the economic viability of agriculture.

Zoning Regulations

The Solano County Zoning Ordinance zones the project site "A-160" (Exclusive Agriculture 160 acres).

Travis Air Force Base Land Use Compatibility Plan

The Travis Air Force Base Land Use Compatibility Plan sets forth recommendations to guide development and land use activities in the Airport Influence Area of Travis Air Force Base. The most recent version of the plan was adopted by the Solano County Airport Land Use Commission on October 8, 2015.

The plan identifies aviation noise contours and designates land use zones around the Air Base based on proximity to the runways. Development and land use activities that occur near the Air Base are regulated on the basis of exposure to aviation noise and relationship aircraft overflight patterns.

The project site overlaps with Zone B1 (Inner Approach/Departure) (277.5 acres) and Zone C (Traffic Pattern) (75.1 acres) of the Travis Air Force Base Airport Land Use Compatibility Plan. The applicable provisions of Zone B1 and Zone C are summarized as follows:

Zone B1—Inner Approach/Departure

Compatibility Zone B1 comprises Accident Potential Zone I (APZ I) as defined by the United States Department of Defense. This is an area of substantial risk situated within 7,500 feet of the runway

ends. It is also subject to potential noise levels in excess of 80 decibel (dB) Community Noise Equivalent Level (CNEL). The following uses are prohibited in Zone B1:

- Children's schools, day care centers, libraries
- Theaters, meeting halls, other assembly uses
- Office buildings taller than three stories in height
- Labor-intensive industrial uses
- Stadiums, group recreational uses
- Hospitals, nursing homes
- Highly noise-sensitive uses (e.g., outdoor theaters)
- Aboveground bulk storage of hazardous materials
- Hazards to flight

Density within Zone B1 is limited to no more than 15 persons per acre (indoor), 20 persons per acre (outdoor), and 30 persons per acre (any single acre). Structures must be located the maximum distance from the runway centerline. Projects that have the potential to attract wildlife are required to prepare a Wildlife Hazards Assessment.

Zone C—Traffic Pattern

Compatibility Zone C encompasses locations exposed to potential noise in excess of approximately 60 dB CNEL together with additional areas occasionally affected by concentrated numbers of low-altitude aircraft overflights. To the greatest extent practical, the boundaries are delineated so as to follow sections, lines, other geographic features, and fixed offset distances from the extended runway centerlines. Developed residential areas within existing city limits are excluded. The following uses are prohibited in Zone C:

- Children's schools, day care centers, libraries
- Hospitals, nursing homes
- Hazards to flight

Density within Zone C is limited to no more than 75 persons per acre (indoor), 100 persons per acre (outdoor), and 300 persons per acre (any single acre). Projects that have the potential to attract wildlife are required to prepare a Wildlife Hazards Assessment.

Solano Local Agency Formation Commission

Solano LAFCo implements the Cortese-Knox-Hertzberg Act in Solano County. Solano LAFCo evaluates applications for changes of organization or reorganization against the mandatory standards set forth by the Cortese-Knox-Hertzberg Act.

Travis Reserve Area Zoning Overlay

The Travis Reserve Area Zoning Overlay was added to the Solano County Code in 2023 to implement the Travis Reserve Area and to protect land within the overlay for continued crop production and grazing uses, as well as compatible non-avian habitat uses, until a military use or other use clearly supporting the mission of the Base is proposed for the land.

Crop production, grazing, and agricultural accessory structures less than 2,500 square feet in gross floor area and less than 25 feet in height are allowed in the overlay zone. New residential land uses are not permitted; however, legal nonconforming residential land uses are permitted subject to certain conditions established in the County Code. Conservation or mitigation banks for avian species, or *uses* likely to attract avian species, are not permitted.

All other land uses proposed in the Travis Reserve Area Zoning Overlay that are otherwise allowed by a site's underlying zoning district require approval of a minor use permit prior to development, enlargement, or intensification of use, or change of use, unless a use permit is required. New development or expansion of existing nonresidential uses is subject to discretionary review and requires a finding of consistency with the purpose of the Travis Reserve Area Zoning Overlay.

3.9.4 - Methodology

FirstCarbon Solutions (FCS) evaluated impacts associated with land use through site reconnaissance and review of relevant planning documents. FCS conducted site reconnaissance in December 2020 and documented existing conditions with photographs. FCS reviewed relevant planning documents including the Suisun City General Plan, the Suisun City Municipal Code, the Travis Air Force Base Land Use Compatibility Plan, the Travis Air Force Base Sustainability Study Report, and the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000.

3.9.5 - Thresholds of Significance

The California Environmental Quality Act (CEQA) Guidelines Appendix G is a sample Initial Study checklist that includes two factual inquiries related to the subject of land use, in addition to many additional inquiries on a series of other environmental topics. Notably, lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance for these subjects, or on any subject addressed in the checklist (*Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1068). Rather, with few exceptions, "CEQA grants agencies discretion to develop their own thresholds of significance" (*Id.*). Even so, it is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G and to use that language in fashioning thresholds. The City has done so here, though it has also relied on professional judgment. Thus, for purposes of this Draft EIR, a significant impact would:

a) Physically divide an established community; or

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

3.9.6 - Project Impacts Mitigation Measures

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

General Plan Consistency

Impact LUP-1: The proposed project would not conflict with any applicable provisions of the City of Suisun City General Plan.

Impact Analysis

The proposed project would develop approximately 2.1 million square feet of high-cube warehouse uses on approximately 120 acres and continue to preserve approximately 47 acres as open space. The project site would be annexed into the city limits.

General Plan Amendment

The development of the proposed project requires a General Plan Amendment to re-designate the site from Special Planning Area to "Commercial Mixed Use" and "Agriculture and Open Space." The Commercial Mixed Use designation would coincide with the portion of the project site contemplated to support the proposed warehouses. The Agriculture and Open Space designation would coincide with the portion of the project site that would be preserved as open space. These General Plan land use designations were created for the specific purpose of facilitating project development. Thus, the proposed project's end uses would be consistent with the General Plan land use designations.

Furthermore, the General Plan Amendment would amend the Circulation Element to eliminate a collector that would connect Petersen Road to SR-12 and a future interchange on SR-12 south of the project site.

Planned Unit Development

General Plan Program LU-4.5 requires that a specific plan, master plan, or other implementing mechanism be processed to guide the development of the project site. The proposed Planned United Development would be the implementing mechanism required by the provisions of General Plan Program LU-4.5

General Plan Consistency Analysis

Table 3.9-2 evaluates the relevant goals, objectives, and policies of the City of Suisun General Plan. The conclusions expressed in Table 3. 9-2 reflect the best judgment of City staff. The ultimate question of the meaning of particular General Plan policies, and thus the proposed project' s consistency with them, lies with the City Council. The language found in general plans is sometimes susceptible to varying interpretations. Case law interpreting the Planning and Zoning Law (Gov. Code, § 65000 *et seq*.) makes it clear that: (i) the ultimate meaning of such policies is to be determined by the elected City Council or a lower tier decision-making body such as a planning commission, as opposed to city staff and EIR consultants, applicants, or members of the public; and (ii) the decision-making body' s interpretations of such policies will prevail if they are "reasonable," even though other reasonable interpretations are also possible (See *No Oil, Inc. v. City of Los Angeles* [1987] 196 Cal.App.3d 223, 245-246, 249). Courts also have recognized that, because general plans often contain numerous policies adopted to effect differing or competing legislative goals, a development project may be "consistent" with a general plan, taken as a whole, even though the project appears to be inconsistent or arguably inconsistent with some specific policies within a given general plan (*Sequoyah Hills Homeowners Association v. City of Oakland* [1993] 23 Cal.App.4th 704, 719). Furthermore, courts strive to

"reconcile" or harmonize" seemingly disparate general plan policies to the extent reasonably possible (*No Oil*, *supra*, 196 Cal.App.3d at p. 244).

As shown in the table, City staff concludes that the proposed project is consistent with all applicable goals, objectives, and policies, particularly those associated with Travis Air Force Base land use compatibility planning within the applicable Special Planning Area. Impacts would be less than significant. Should City decision-makers choose to approve the proposed project, they may rely on the analysis in the table as support for the conclusion that the project is consistent with the General Plan. Certification of the Final EIR will be indicative of agreement with the conclusions in the table.

Table 3.9-2: General Plan Consistency Analysis

Element	Goal/Objective/Policy		Consistency Determination
	No.	Text	
2—Community Character and Design	Goal CCD-1	Maintain and Strengthen the Character of Suisun City through Changes in the Built Environment.	**Consistent:** This policy applies to the City as a whole and need not be satisfied by each individual project that is approved. The proposed project would develop 2.1 million square feet of new high-cube warehouse uses on approximately 120 and preserve approximately 47 acres as open space. The project site would be annexed into the city limits. The proposed project would create new employment opportunities, attract new businesses, expand the tax base, and provide new taxable sales. The proposed project would adhere to design standards to ensure that new development is visually appealing and compatible with surrounding land uses. Collectively, these characteristics would ensure that the proposed project maintains and strengthens the character of Suisun City.
	Objective CCD-1	Enforce design policies and standards that ensure a unique sense of place in new developments so that the City's overall design character is improved between present and 2035.	**Consistent:** The proposed project would be required to adhere to design standards to ensure that new development is visually appealing and compatible with surrounding land uses.
	Policy CCD-1.1	The City will review and condition new developments, as necessary, to ensure that development is consistent with the desired future	**Consistent:** This Draft EIR evaluates the proposed project's consistency with the applicable development standards set forth in the General

Element	Goal/Objective/Policy		Consistency Determination
	No.	Text	
		character of the City. This review will take into consideration the size, location, orientation, and height of buildings, as well as proposed signs, fences, drainage, walls, landscaping, and lighting.	Plan. City staff will evaluate the consistency of the development site plan and proposed structures with applicable development standards at the plan check phase. The City will not approve building permits or similar entitlements for individual structures without ensuring that consistency is achieved.
	Policy CCD-1.2	The City will require the use of durable, high-quality building materials to reduce maintenance and replacement needs and ensure the aesthetic appeal of new developments.	**Consistent:** City staff will evaluate the consistency of the proposed structures with applicable development standards at the plan check phase to ensure that consistency is achieved. This includes requirements associated with building materials.
	Policy CCD-1.3	The architectural style, exterior materials, and other design features of accessory buildings, including garages, shall complement the primary structure.	**Consistent:** The Planned Unit Development sets forth design standards including requirements associated with architectural design of buildings. The City will not approve building permits or similar entitlements for individual structures without ensuring that consistency is achieved.
	Policy CCD-1.5	New developments should locate and size proposed surface parking areas in a way that reduces the visual dominance of parking as viewed from the front property line. In general, street frontages should be composed of building fronts and complementary landscaping, with parking located to the side or rear of the site.	**Consistent:** Buildings and landscaping would be set against the Walters Road and Petersen Road frontages. Off-street parking would be provided within the interior of the site. Parking areas along Petersen Road would be screened by landscaping.
	Policy CCD-1.6	Proposed buildings of more than 20,000 square feet in gross floor area shall use balconies, bay windows or other window treatments, pitched roofs, arcades, or other architectural features to provide visual interest.	**Consistent:** The proposed warehouse buildings would employ contemporary design treatments such as reveals, overhead canopies, and variations in colors and materials to create visual interest.

Element	Goal/Objective/Policy		Consistency Determination
	No.	Text	
	Policy CCD-1.17	Trash bins, HVAC equipment, and other required mechanical equipment should be located in areas that are accessible for their intended use and screened from view along public rights-of-way.	**Consistent:** The Planned Unit Development (PUD) mandates that trash enclosures would be located in appropriate locations and employ screening methods. Rooftop mechanical equipment would be screened with parapets. Ground-mounted equipment would be located in the rear of buildings and screened from view with landscaping or enclosures.
	Policy CCD-1.18	Colors and logos associated with a company shall not be a significant architectural element in any new development. Commercial signage should be restrained in size and height and shall not involve any more than one square foot of building signage for each linear foot of building frontage facing a public street.	**Consistent:** All signage would comply with City standards.
	Goal CCD-3	Increase the Visual Attractiveness of Key Community Gateways.	**Consistent:** The project site is adjacent to a General Plan-designated gateway along SR-12. The proposed project would preserve 47 acres as open space including 75 percent of the acreage fronting SR-12. Project buildings would be set back from SR-12 and would incorporate architectural design features and landscaping to create a visually appealing project. Collectively, these characteristics would increase the visual attractiveness of this gateway.
	Objective CCD-3	Provide a visual environment at important gateways that gives visitors an immediate positive impression of Suisun City.	**Consistent:** The project site is adjacent to a General Plan-designated gateway along SR-12. The proposed project would include a gateway entry feature welcoming motorists to Suisun City and would preserve most of the acreage fronting SR-12 as open space. Project buildings would be set back from SR-12 and would incorporate architectural design features and landscaping to create a visually appealing project. Collectively,

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			these characteristics would give travelers on SR-12 a positive impression of Suisun City.
	Policy CCD-3.1	Key Community Gateways include SR-12 east of the city limits, Sunset Avenue at the Southern Pacific Railroad tracks, Walters Road between Tabor Avenue and Prosperity Lane, SR-12 near Ledgewood Creek, Cordelia Road in the western edge of the Planning Area, Pennsylvania Avenue at SR-12, the pedestrian crossing from downtown Fairfield, and the Suisun Slough.	Consistent: The project site is adjacent to a General Plan-designated gateway along SR-12. The proposed project would include a gateway entry featuring welcoming motorists to Suisun City and would preserve most of the acreage fronting SR-12 as open space.
	Policy CCD-3.2	Key Community Gateways should provide distinctive entrances to Suisun City that enhance the image of, and reflect the natural environment, history, culture, and identity of the community.	**Consistent:** The proposed project would enhance the eastern gateway to Suisun City by providing a permanent open space area in front of a modern industrial development project that employs contemporary architecture, appropriate signage, and attractive landscaping, as well as a gateway entry featuring welcoming motorists to Suisun City.
	Policy CCD-3.3	New developments visible from Key Community Gateways should provide an attractive streetscape environment; preserve healthy native vegetation and add new landscaping to enhance aesthetics; and frame views of waterways and surrounding hills and mountains, where possible.	**Consistent:** The proposed project would preserve most of the acreage fronting SR-12 as open space. Project buildings would be set back from SR-12 and would incorporate architectural design features and landscaping to create a visually appealing project and screen views of the internal circulation system. Moreover, the buildings would be positioned to protect existing views to the extent feasible, and the proposed project would include pedestrian sidewalk construction and improvements as part of Peterson Road widening and Walters Road frontage improvements, as well as installation of attractive landscaping consisting primarily of native compatible or indigenous plants at

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			visible accent points, such as driveways and entryways.
	Policy CCD-3.5	New private developments shall provide attractive building façades and locate surface parking in a way that reduces the visual dominance in areas adjacent to, and visible from Key Community Gateways.	**Consistent:** The Planned United Development design standards include contemporary design treatments such as variations in colors and materials, architectural elements, and other features to create visual interest. Parking areas would be provided around and between buildings; large parking fields are not proposed.
	Goal CCD-4	Design Streetscapes to Create Attractive and Comfortable Spaces for People.	**Consistent:** The Planned United Development design standards include pedestrian facilities and landscaping along the project frontages with Walters Road and Petersen Road.
	Objective CCD-4	Provide a comfortable visual environment along streetscapes throughout the community.	**Consistent:** The proposed project would improve its frontages with Walters Road and Petersen Road to provide new or improved pedestrian facilities and landscaping as part of a comfortable visual environment.
	Policy CCD-4.3	New developments shall provide direct access routes to buildings from sidewalks and parking areas for pedestrians and bicyclists.	**Consistent:** The proposed project would provide internal pedestrian connections between buildings, parking areas, and sidewalks.
	Policy CCD-4.4	The City will require visually attractive streetscapes with street trees, planting strips, attractive transit shelters, benches, pedestrian-scale streetlights in appropriate locations, and landscaping along fences and low walls, if present.	**Consistent:** The proposed project would improve its frontages with Walters Road and Petersen Road to provide new or improved pedestrian facilities and landscaping. Fencing and walls would incorporate landscaping or other decorative elements.
	Policy CCD-4.8	New utilities shall be installed underground. Aboveground utilities along public rights-of-way should be undergrounded, as feasible.	**Consistent:** There are no overhead utilities along the project frontage with Walters Road or Petersen Road. All project-related utility connections would occur underground.
	Goal CCD-6	Preserve and Enhance Scenic Views in Suisun City.	**Consistent:** The proposed project would maintain intermittent views of the Potrero Hills by locating buildings in a manner that creates

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			view corridors and preserving approximately 47 acres of the site as open space. Refer to Section 3.1, Aesthetics, Light and Glare for further discussion.
	Objective CCD-6	Increase visual access to the Suisun Marsh, the Coastal Range, Cement Hill, the Potrero Hills, and the Vaca Mountains.	**Consistent:** The proposed project would maintain intermittent views of the Potrero Hills by locating buildings in a manner that creates view corridors and continuing to preserve approximately 47 acres of the site as open space. Refer to Section 3.1, Aesthetics, Light and Glare for further discussion.
	Policy CCD-6.1	Locally important scenic resources include the Suisun Marsh, the Coastal Range, Cement Hill, the Potrero Hills, and the Vaca Mountains. Locally important scenic vistas are those available from public properties and rights-of-way of locally important scenic resources.	**Consistent:** The proposed project would maintain intermittent views of the Potrero Hills by locating buildings in a manner that creates view corridors and continuing to preserve approximately 47 acres of the site as open space.
	Policy CCD-6.2	New developments shall be designed to retain or enhance views along existing public rights-of-way of locally important scenic resources, to the extent feasible.	**Consistent:** The proposed project would intermittent maintain views of the Potrero Hills by locating buildings in a manner that creates view corridors and continuing to preserve approximately 47 acres of the site as open space.
	Policy CCD-6.3	New developments should be designed, where feasible, to frame views of locally important scenic resources, by providing direct lines of sight along public rights-of-way and open space in areas where these features are prominently visible.	**Consistent:** The proposed project would intermittent maintain views of the Potrero Hills by locating buildings in a manner that creates view corridors and continuing to preserve approximately 47 acres of the site as open space.
	Policy CCD-6.4	The City will not consider urban development that is consistent with General Plan community design policies to represent a degradation of visual character for the purpose of environmental impact analysis.	**Consistent:** This Draft EIR concludes that the proposed project would have a less than significant impact on visual character because it is consistent with General Plan community design policies.
	Goal CCD-8	Avoid light spillage and adverse effects of glare.	**Consistent:** The PUD requires that all exterior lighting be compatible with

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			Travis Air Force Base operations to avoid creating aviation hazards. This would be accomplished through the use of full-cut-off light fixtures, shielding, and directing light sources downward to prevent "uplighting" or other forms of spillage. Refer to Section 3.1, Aesthetics, Light and Glare for further discussion.
	Objective CCD-8	Incorporate design approaches, as necessary, to provide attractive lighting and ensure that new developments do not create significant effects related to light or glare.	**Consistent:** The PUD requires that all exterior lighting be compatible with Travis Air Force Base operations to avoid creating aviation hazards. This would be accomplished through the use of full-cut-off light fixtures, shielding, and directing light sources downward to prevent "uplighting" or other forms of spillage. Refer to Section 3.1, Aesthetics, Light and Glare for further discussion.
	Policy CCD-8.4	Light fixtures shall aim light sources downward and provide shielding to prevent glare and reflection.	**Consistent:** The PUD requires that all exterior lighting be compatible with Travis Air Force Base operations to avoid creating aviation hazards. This would be accomplished through the use of full-cut-off light fixtures, shielding, and directing light sources downward to prevent "uplighting" or other forms of spillage. Refer to Section 3.1, Aesthetics, Light and Glare for further discussion.
	Policy CCD-8.5	Permanent lighting cannot blink, flash, or be of unusually high intensity or brightness. Lighting standards shall avoid the use of harsh mercury vapor, low-pressure sodium, or fluorescent bulbs for lighting of public areas or for lighting within residential neighborhoods.	**Consistent:** The use of blinking, flashing, or high-intensity lighting is prohibited in the proposed project.
	Policy CCD-8.6	New developments shall not include reflective surfaces that could cast glare toward pedestrians, bicyclists, or motorists. Bare metallic surfaces, such as pipes, vents, and light fixtures shall be painted to minimize reflectance.	**Consistent:** The use of highly reflective building materials is prohibited in the proposed project.

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3—Land Use	Goal LU-4	Ensure growth patterns that promote long-term economic prosperity and make efficient use of resources.	**Consistent:** The proposed project would develop 2.1 million square feet of industrial uses on 120 acres at an appropriate location in the urban area, while preserving 47 acres that contain the highest value natural resources as open space. Thus, the proposed project is consistent with the goal of promoting long-term economic prosperity and making efficient use of resources.
	Objective LU-4	Provide coordinated land use and public infrastructure planning in a way that increases service efficiencies, minimizes environmental impacts, and reduces ongoing costs to the City.	**Consistent:** The proposed project would develop new industrial uses on the 120 acres contiguous to existing urban development and infrastructure. This would maximize the cost effectiveness of new and expanded infrastructure necessary to serve the project.
	Policy LU-4.1	The City will support the provision of facilities, services, or infrastructure only in areas that are planned for development. The City will not induce growth by supporting the provision of services or infrastructure in areas that are not planned for development under the General Plan.	**Consistent:** The General Plan designates the project site as "Special Planning Area" and contemplates development occurring at this location. Thus, the extension of infrastructure to the project site is considered planned growth.
	Policy LU-4.2	The City will only allow annexation of land that is on or adjacent to lands with available urban services.	**Consistent:** The project site is immediately adjacent to areas within the city limits that are served with urban services and within the Suisan City Sphere of Influence (SOI).
	Policy LU-4.3	Annexation requests shall provide an analysis of infrastructure and public facilities demand, as well as the financing necessary to support planned development.	**Consistent:** This Draft EIR provides a comprehensive analysis of the infrastructure proposed to serve the proposed project. The Draft EIR also provides the Solano County Local Agency Formation Commission (LAFCo), as a responsible agency, information LAFCo needs to support its consideration of the annexation proposed as part of the package of project approvals. Additional analysis (including financing) will

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			also be prepared as part of the LAFCo annexation application.
	Policy LU-4.4	Annexation requests shall provide studies requested by Solano Local Agency Formation Commission.	**Consistent:** This Draft EIR evaluates the proposed project against LAFCo annexation criteria (refer to Impact LU-4). Additional materials will be prepared and compiled, as needed, as part of the LAFCo annexation application to meet LAFCo requirements.
	Policy LU-4.9	The City will work collaboratively with landowners in the eastern portion of the Planning Area within "Special Planning Area" (see Exhibit 3-10) on comprehensive suitability analysis and planning to guide long-term development and conservation. Suitability analysis and planning for the Special Planning Area shall address, consistent with the balance of the 2035 General Plan, important opportunities and constraints in this area related to biological, recreational, land use and transportation, community character and design, public services and infrastructure, and fiscal and economic issues.	**Consistent:** The PUD reflects the outcome of the City efforts to work collaboratively with the applicant team on planning the project site for urban development and open space preservation. This Draft EIR specifically addresses the proposed end uses, phasing, required infrastructure (including timing), compatibility with surrounding land uses, and protection of natural resources.
4– Transportation	Goal T-1	Provide an efficient, safe transportation system that is free of barriers to travel by all segments of Suisun City's population.	**Consistent:** Petersen Road would serve as the primary truck access point to the project. To make the roadway suitable for increased truck travel, the applicant would improve Petersen Road. Additionally, the applicant would provide fees for other roadway improvements. This is consistent with providing an efficient, safe transportation system. Refer to Section 3.11, Transportation, for further discussion.
	Objective T-1	Develop, maintain, and enforce transportation performance standards and public improvement standards that implement the 2035 General Plan.	**Consistent:** This Draft EIR's traffic analysis employs the adopted performance standards as the basis for assessing traffic impacts. Refer to Section 3.11, Transportation, for further discussion.

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	Policy T-1.1	The City will review and condition developments to maintain level of service E or better during peak travel periods, as feasible.	**Consistent:** This Draft EIR's traffic analysis employs Level of Service (LOS) E as the minimum acceptable performance standard for City of Suisun City transportation facilities. Refer to Section 3.11, Transportation, for further discussion.
	Policy T-1.3	The City's Level of Service policy will be implemented in consideration of the need for pedestrian and bicycle access, the need for emergency vehicle access, and policies designed to reduce vehicle miles traveled.	**Consistent:** This Draft EIR's traffic analysis considers intersection and roadway operations in conjunction with accessibility for bicycle and pedestrians, emergency vehicle access, and reducing vehicle miles traveled. Refer to Section 3.11, Transportation, for further discussion.
	Policy T-1.4	The City will not require analysis of direct impacts to vehicular level of service for the purpose of California Environmental Quality Act compliance. The City acknowledges that Caltrans and other transportation agencies may require such analysis.	**Consistent:** This policy does not require analysis of direct impacts to vehicular LOS, consistent with changes made to the CEQA Guidelines effective in July 2020. As of that date, CEQA required analysis of Vehicle Miles Traveled (VMT) in lieu of LOS impacts. In compliance with this policy, this Draft EIR nonetheless provides LOS information for the benefit of agencies such as Caltrans and other agencies with jurisdiction over transportation facilities.
	Policy T-1.5	The City recognizes the transportation network as an integrated component of Suisun City's urban fabric and not only as a system for moving people and goods.	**Consistent:** This Draft EIR's traffic analysis considers intersection and roadway operations in conjunction with goods movement and accessibility for bicycle and pedestrians. Refer to Section 3.11, Transportation, for further discussion.
	Policy T-1.6	The City will design and operate streets and intersections to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities.	**Consistent:** The project frontages with Walters Road and Petersen Road will be improved with curb, gutter, and sidewalk. Additionally, existing Class II bicycle facilities on Walters Road would be retained by the proposed project, and facilities on Peterson Road would be improved with a shared bicycle/pedestrian feature. These

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			characteristics are consistent with the policy of designing and operating streets and intersections to enable safe access for all users. Refer to Section 3.11, Transportation, for further discussion.
	Policy T-1.7	The City will maintain a traffic impact fee program designed to collect fair share contributions from new developments to construct off-site vehicular, bicycle, and pedestrian improvements.	**Consistent:** The proposed project would comply with the City traffic impact fee requirements for off-site traffic improvements via the City's fee program. Refer to Section 3.11, Transportation, for further discussion.
	Policy T-1.8	The City will consult with other agencies, such as the Solano Transportation Authority, Solano County, Caltrans, and the Metropolitan Transportation Commission on assessing travel demand impacts to facilities managed by other agencies. The City will collaborate as a part of a coordinated regional program on collection of impact fees for regional transportation improvements.	**Consistent:** The City of Suisun City consulted with Solano Transportation Authority, Solano County, Caltrans, and the cities of Fairfield and Vacaville regarding the scope of the Draft EIR's traffic analysis.
	Policy T-1.9	The City will require new roads, intersections, and access points to be designed in accordance with City standards and avoid introducing any hazardous conditions.	**Consistent:** Petersen Road and Walters Road would be improved in accordance with City standards for this type of facility.
	Goal T-2	Provide a well-connected transportation system that offers residents and visitors a choice of routes to reach their destinations.	**Consistent:** The proposed project would take employee and visitor vehicular access from Walters Road, and truck access from Peterson Road, which is consistent with the goal of providing a well-connected transportation system. Refer to Section 3.11, Transportation, for further discussion.
	Policy T-2.3	New developments shall be highly connected internally and connected with adjacent developed areas.	**Consistent:** The proposed project's internal circulation system would employ a grid pattern with external connections to Walters Road and

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			Petersen Road. Refer to Section 3.11, Transportation, for further discussion.
	Policy T-2.5	The City prefers direct connections that allow cars, bikes, and pedestrian through traffic over "doglegs" or "T" intersections.	**Consistent:** The proposed project's main access point on Walters Road would serve as the fourth leg of the existing driveway to Walmart parking and thus would convert an existing "T" intersection into a full intersection. Additionally, the intersection improvements would maintain the existing Class II bike lanes on Walters Road and construct new pedestrian facilities.
	Policy T-2.8	New commercial developments on parcels of greater than 20 acres in land area should divide larger blocks with small private through streets (Exhibit 4-9).	**Consistent:** The proposed project is an industrial development, not a commercial development. Notwithstanding, the proposed project's private internal street network would employ a grid pattern that would create "blocks" within the proposed project and around the buildings with at least one internal street running through the entire length pf the developed portion of the site.
	Goal T-3	Manage travel demand in order to reduce up-front and ongoing cost of transportation infrastructure, enhance local mobility, improve air quality, and improve the local quality of life.	**Consistent:** This Draft EIR requires the project applicant to implement a Transportation Demand Management (TDM) program that encourages ride sharing, flex scheduling, transit ridership, bicycling, and other strategies to reduce commute period travel. Refer to Section 3.11, Transportation, for further discussion.
	Objective T-3	Vehicle Miles Traveled (VMT) by Suisun City residents and to Suisun City destinations should increase at a lower rate than that of population and employment growth.	**Consistent:** The proposed project would promote reductions in VMT by developing an employment center within a "housing rich" jurisdiction and thus allowing employees to work close to where they live. Additionally, the proposed project would promote reductions in VMT through implementation of a TDM program.
	Policy T-3.1	The City will collaborate with other local, regional, and State agencies,	**Consistent:** This Draft EIR requires the project applicant to implement

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		as well as employers to encourage carpooling, carpool parking, flexible work schedules, ride sharing, and other strategies to reduce commute period travel demand.	a TDM Program that encourages ride sharing, flex scheduling, transit ridership, bicycling, and other strategies to reduce commute period travel.
	Policy T-3.2	The City will encourage new developments and public facility investments designed to minimize vehicle trips and vehicle miles traveled.	**Consistent:** This Draft EIR requires the project applicant to implement a TDM Program that encourages ride sharing, flex scheduling, transit ridership, bicycling, and other strategies to minimize vehicle trips and VMT.
	Policy T-3.6	New developments that would accommodate 100 full or part time employees or more are required to incorporate feasible travel demand management strategies, such as contributions to transit/bike/pedestrian improvements; flex time and telecommuting; a carpool program; parking management, cash out, and pricing; or other measures, as appropriate, to reduce travel demand.	**Consistent:** This Draft EIR requires the project applicant to implement a TDM program that encourages ride sharing, flex scheduling, transit ridership, bicycling, and other strategies to reduce travel demand.
	Goal T-4	Provide for movement of raw materials and shipment of goods throughout the City and surrounding region.	**Consistent:** The proposed project is located near the intersection of two regional roadways (SR-12 and Walters Road/Jepson Parkway) that provide access to destinations to the west, north, and east of Suisun City. These locational characteristics would allow for efficient goods movement throughout Suisun City and the region.
	Objective T-4	Increase goods movement and economic activity based on Suisun City's road, rail, and water connections, while also minimizing the negative effects of this transportation on the City's residents and businesses.	**Consistent:** The proposed project is located near the intersection of two regional roadways (SR-12 and Walters Road/Jepson Parkway) that provide access to destinations to the west, north, and east of Suisun City. These locational characteristics would allow for efficient goods movement and economic activity while also minimizing adverse traffic impacts on residential streets and the Downtown area.

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	Policy T-4.1	The City will support goods movement and collaborate with regional agencies and private parties to maintain and enhance goods movement corridors serving the City.	**Consistent:** The proposed project would improve Petersen Road, which would serve as the primary truck access facility for the proposed project. Petersen Road also serves as a delivery entrance to Travis Air Force Base, and, thus, the improvements would also enhance military goods movement.
	Policy T-4.2	The City will manage truck traffic, freight rail, and hazardous materials movements in a way that is protective of the public and environmental health, in collaboration with Caltrans, Solano County, the California Highway Patrol, the California Public Utilities Commission, and the Union Pacific Railroad.	**Consistent:** Trucks serving the project site would use SR-12, Walters Road, and Petersen Road within Suisun City, which are designated truck routes. Furthermore, Walters Road and Petersen Road would be improved to better accommodate truck movements.
	Policy T-4.3	The City will restrict truck traffic to designated routes, which include: SR-12, Main Street, Cordelia Street, Railroad Avenue, Lotz Way, Walters Road, Petersen Road, and Civic Center Boulevard. Trucks may go by direct route to and from restricted streets where required for the purpose of making pickups and deliveries of goods but are otherwise restricted to designated routes.	**Consistent:** Trucks serving the proposed project would use SR-12, Walters Road, and Petersen Road within Suisun City, which are all designated truck routes.
	Goal T-6	Maintain a multimodal transportation system for the safe and efficient movement of automobiles and trucks, pedestrians, bicyclists, and public transit users.	**Consistent:** This policy applies to the City as a whole, and need not be satisfied by each individual project that is approved. The proposed project includes improvements to Walters Road and Petersen Road that would benefit passenger vehicles, trucks, bicyclists, pedestrians, and public transit users.
	Objective T-6	Increase the share of work and non-work trips by Suisun City residents and to Suisun City destinations for walking (by 1 percent), bicycling (by 0.3 percent), and public transit (by 2.6 percent) compared to that	**Consistent:** This objective applies to the City as a whole, and need not be satisfied by each individual project that is approved. The proposed project would install sidewalks along its frontages with Walters Road and Petersen Road

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		documented by the 2000 U.S. Census and ABAG [Association of Bay Area Governments].	and provide an internal network of pedestrian facilities. These characteristics would improve pedestrian mobility and may increase the share of work and non-work trips made on foot.
	Policy T-6.1	The City will facilitate construction and maintenance of an accessible, safe, pleasant, convenient, and integrated bicycle and pedestrian system that connects local destinations and surrounding communities. The City will support development of a safe and accessible trail network connected to the on-street bicycle and transportation system that provides transportation and recreational opportunities for Suisun City residents and employees.	**Consistent:** The project frontages with Walters Road and Petersen Road will be improved with curb, gutter, and sidewalk. The proposed project would also provide an internal network of pedestrian facilities that would connect to the public sidewalks. Additionally, existing Class II bicycle facilities on Walters Road would be retained by the proposed project, and facilities on Peterson Road would be improved with a shared bicycle/pedestrian feature.
	Policy T-6.2	The City will require design, construction, operation, and maintenance of "complete streets" that provide safe and convenient access and travel for pedestrians, bicyclists, motorists, and transit users of all ages and abilities.	**Consistent:** The project frontages with Walters Road and Petersen Road will be improved with curb, gutter, and sidewalk, and maintain/improve the existing Class II bicycle lanes and pedestrian facilities on these roadways. These characteristics are consistent with "complete streets" requirements.
	Policy T-6.6	Bicycle parking shall be provided near destination land uses, such as retail, commercial and public services, parks, schools, and transit stops.	**Consistent:** The proposed project would provide bicycle parking near building entrances in accordance with City standards.
	Policy T-6.9	The City will encourage construction of transit amenities, such as benches, information systems, shelters, and bike racks near transit stops.	**Consistent:** An existing transit stop with shelter and bench is located on the opposite side of Walters Road.
	Policy T-6.13	New developments shall provide pathways that link to sidewalks, trails, streets, and adjacent transit stops.	**Consistent:** The proposed project would provide an internal network of pedestrian facilities that would connect to the public sidewalks.
	Goal T-7	Maintain an adequate supply of parking and avoid oversupply of	**Consistent:** The proposed project's parking scheme would be designed

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		parking that would unnecessarily increase urban water runoff, require expensive construction and maintenance, and discourage alternatives to vehicular travel.	to provide the appropriate amount of parking for each warehouse in accordance with the City's parking requirements.
	Objective T-7	Reduce the proportion of parking spaces that are unused during the daytime, evenings, or weekends.	**Consistent:** Reciprocal access would be provided as needed, which would allow for parking to shared.
	Policy T-7.1	Parking shall be located and designed to facilitate convenient pedestrian access to and from buildings, trails, sidewalks, and transit stops.	**Consistent:** The proposed project would provide an internal network of pedestrian facilities that would link parking with buildings, and sidewalks.
	Policy T-7.8	New developments shall break up and distribute any proposed surface parking and shall provide adequate landscaping to achieve at least 50 percent shading of parking areas at maturity.	**Consistent:** Landscaping will be provided within parking areas in accordance with the applicable 50 percent shading standards.
	Policy T-7.11	New developments that require loading areas shall provide these facilities in a way that does not conflict with pedestrian, bicycle, transit, or automobile circulation.	**Consistent:** The proposed warehouse buildings would locate the loading docks in areas dedicated for truck use and which are segregated from passenger vehicle, public transit, bicycle, and pedestrian circulation.
5—Economic Development	Goal ED-1	Foster expansion of existing businesses and establishment of new businesses in Suisun City.	**Consistent:** The proposed project would develop up to 2.1 million square feet of industrial uses and create up to 2,059 new jobs.
	Objective ED-1	Meet or exceed the Countywide average of taxable sales per capita, meet or exceed the average for incorporated Solano County cities in assessed taxable property value per acre, and increase the number of business licenses maintained by the City by at least 30 percent above 2010 levels by 2035.	**Consistent:** This policy applies to the City as a whole, and need not be satisfied by each individual project that is approved. The proposed project would develop up to 2.1 million square feet of high-cube warehouse uses that may include end users that generate taxable sales.
	Policy ED-1.5	The City will focus its economic development activities on businesses and employers that are suited to local advantages, such as regional rail transit, highway access, proximity to open space and recreational amenities,	**Consistent:** The proposed project would develop up to 2.1 million square feet of industrial uses on a site adjacent to the junction of the SR-12 corridor and the Walters Road (Jepson Parkway) corridor and next to the delivery entrance to

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		historic architectural and other heritage assets, and Travis Air Force Base.	Travis Air Force Base. As such, the proposed project is well suited to attract end users who are looking to develop facilities adjacent to these corridors or the Air Force Base.
	Goal ED-3	Improve Suisun City's jobs-workforce balance by attracting high quality, local employment opportunities.	**Consistent:** The proposed project would create up to 2,059 new employment opportunities. Most of these new jobs would be in employment sectors that are either very limited or do not exist in Suisun City (logistics and warehousing, etc.).
	Objective ED-3	Provide at least 0.4 total local jobs for every member of the labor force by 2035.	**Consistent:** This policy applies to the City as a whole, and need not be satisfied by each individual project that is approved. The proposed project would create up to 2,059 new employment opportunities.
	Policy ED-3.1	The City will encourage development that improves the balance between local jobs and housing, including new commercial and industrial development, home based businesses, business incubators, and other uses that produce high quality local jobs.	**Consistent:** The proposed project would create up to 2,059 new employment opportunities with the city limits and thus would improve the balance between local jobs and housing.
	Policy ED-3.3	The City will place greater emphasis on attracting skilled production businesses that match the skills of Suisun City's workforce.	**Consistent:** The proposed project's 2.1 million square feet of high-cube warehouses uses could be tenanted by a range of businesses that employ skilled labor.
	Goal ED-4	Enhance the City's long-term fiscal sustainability.	**Consistent:** The proposed project would enhance the City's long-term fiscal sustainability by expanding the tax base, creating opportunities for new taxable sales, and attracting new businesses to Suisun City.
	Objective ED-4	Expand the local revenue base, while managing up-front and ongoing costs associated with new and existing development.	**Consistent:** The proposed project would develop 2.1 million square feet of industrial uses and would expand the local revenue base. Additionally, the applicant would be required to fund all infrastructure and improvements necessary to serve the proposed project and

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			participate in a Community Facilities District.
7—Open Space and Conservation	Goal OSC-1	Protect wildlife habitat and movement corridors through the preservation of open space.	**Consistent:** Approximately 47 acres of the project site that contain Union Creek and emergent wetlands would be permanently preserved as open space.
	Objective OSC-1	Increase the number of new developments that preserve and integrate drainages and other wildlife movement into site plans.	**Consistent:** Union Creek functions as a wildlife movement corridor for small mammals, amphibians, and reptiles. Thus, the ongoing preservation of the 47 acres that coincides with Union Creek as open space would further the objective of integrating drainages and wildlife movement into site plans.
	Policy OSC-1.1	The City will require biological resources investigations for proposed developments that could adversely affect potential wildlife movement corridors to determine the value and importance of such corridors to daily and/or seasonal movement and dispersal of local wildlife and identify measures to minimize and avoid adverse effects on wildlife movement. Wildlife movement corridors include marshlands, waterways, and other types of corridors that provide for movement and dispersal.	**Consistent:** A Biological Resources Assessment was prepared for the proposed project that evaluated special-status wildlife species and wildlife movement. Refer to Section 3.3, Biological Resources, for further discussion.
	Policy OSC-1.2	New developments in areas with waterways, riparian habitats, and stands of mature trees shall preserve and incorporate those features into project site planning and design, to the greatest extent feasible.	**Consistent:** Approximately 47 acres of the project site that contain Union Creek and emergent wetlands would be permanently preserved as open space.
	Policy OSC-1.3	New developments shall be designed to protect and preserve natural watercourses and drainage channels to the maximum extent feasible.	**Consistent:** The reach of Union Creek within the project site boundaries would be preserved as open space. No changes to the existing natural watercourse are proposed.
	Policy OSC-1.4	New development shall preserve and incorporate into site planning	**Consistent:** The reach of Union Creek within the project site

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		natural drainages that could support riparian habitat.	boundaries would be preserved as open space. No changes to the riparian habitat along the watercourse are proposed.
	Policy OSC-1.8	Roads, water lines, sewer lines, drainage facilities, and other public facilities constructed to serve development shall be located and designed to avoid substantial impacts to stream courses, associated riparian areas, and wetlands, to the greatest practical extent.	**Consistent:** The reach of Union Creek within the project site boundaries would be preserved as open space. No roads, pipelines, or other infrastructure are proposed within the creek corridor.
	Goal OSC-2	Ensure consistency with Solano Multispecies Habitat Conservation Plan.	**Consistent:** Although the Solano Habitat Conservation Plan (HCP) is not yet adopted, this Draft EIR nevertheless evaluates consistency with the current draft of the Solano Multispecies HCP and finds that the proposed project is consistent. Refer to Section 3.3, Biological Resources.
	Objective OSC-2	New development in the Planning Area supports the conservation objectives of the Solano Multispecies HCP.	**Consistent:** Although the Solano Multispecies HCP is not yet adopted, this Draft EIR nevertheless evaluates consistency with the current draft of the Solano Multispecies HCP and finds that the proposed project is consistent. Refer to Section 3.3, Biological Resources.
	Policy OSC-2.1	The City will coordinate environmental review and mitigation requirements with the Solano Multispecies HCP.	**Consistent:** Although the Solano Multispecies HCP is not yet adopted, this Draft EIR nevertheless evaluates consistency with the current draft of the Solano Multispecies HCP and finds that the proposed project is consistent. Refer to Section 3.3, Biological Resources.
	Policy OSC-2.3	The City will require that new developments comply with relevant conservation measures detailed within the Conservation Strategy chapter of the Solano Multispecies HCP, as applicable.	**Consistent:** Although the Solano Multispecies HCP is not yet adopted, this Draft EIR nevertheless evaluates consistency with the current draft of the Solano Multispecies HCP and finds that the proposed project is consistent.

Element	Goal/Objective/Policy		Consistency Determination
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			Refer to Section 3.3, Biological Resources.
	Goal OSC-5	Minimize Negative Impacts on Prehistoric Resources.	**Consistent:** A Phase I Cultural Resources Assessment (Phase I CRA) was prepared for the proposed project and found no evidence of prehistoric resources within the project site. This Draft EIR includes a mitigation measure that, if adopted, would require that standard inadvertent discovery procedures be implemented in the event that prehistoric resources are encountered during construction activities. Refer to Section 3.4, Cultural Resources, for further discussion.
	Objective OSC-5	Review and condition new developments to minimize prehistoric resource impacts.	**Consistent:** This Draft EIR includes a mitigation measure that, if adopted, would require that standard inadvertent discovery procedures be implemented in the event that prehistoric resources are encountered during construction activities. Refer to Section 3.4, Cultural Resources, for further discussion.
	Policy OSC-5.1	The City will use geologic mapping and cultural and paleontological resource databases to determine the likely presence of resources and the appropriate level of cultural and paleontological resources analysis and mitigation required for new developments.	**Consistent:** A Phase I CRA was prepared for the proposed project and included record searches for information about cultural resources at the Northwest Information Center and paleontological resources at the University of California Museum of Paleontology.
	Policy OSC-5.2	New developments shall be designed to avoid adverse impacts to any known archaeological and paleontological resources, wherever feasible.	**Consistent:** A Phase I CRA was prepared for the proposed project and found no evidence of known archaeological and paleontological resources within the project site. This Draft EIR includes mitigation measures that, if adopted, would require the avoidance, where feasible, of any subsurface historical resources, unique archaeological resources, or tribal cultural resources that might be

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			encountered during construction activities. Refer to Section 3.4, Cultural Resources, for further discussion.
	Policy OSC-5.3	New developments in areas underlain by Pleistocene Alluvium and the Tehama Formation shall include training, notification, and recovery procedures for fossils.	**Consistent:** The project site is underlain by the Tehama Formation and this Draft EIR sets forth a proposed mitigation measure addressing the inadvertent discovery of paleontological resources during construction activities. Its terms would satisfy this policy. Refer to Section 3.5, Geology, Soils, and Seismicity for further discussion.
	Goal OSC-7	Ensure an Adequate and Efficient Long-Term Water Supply.	**Consistent:** A Water Supply Assessment was prepared for the proposed project that evaluated water supply for the proposed project. It found that water supplies would be adequate to serve the proposed project without creating shortages for other planned development over the upcoming 20 years. Moreover, a water supply environmental effects analysis was prepared for the proposed project, which found that the annual delivery of approximately 120 acre-feet of water to the proposed project would have a less than significant physical effect on the environment. Refer to Section 3.10, Public Services and Utilities, for further discussion.
	Objective OSC-7	Assess long-term water supply and incorporate water conservation measures within Suisun City.	**Consistent:** A Water Supply Assessment was prepared as part of this Draft EIR, which found that water supplies would be adequate. . Moreover, a water supply environmental effects analysis was prepared for the proposed project, which found that the annual delivery of approximately 120 acre-feet of water to the proposed project would have a less than significant physical effect on the

Element	Goal/Objective/Policy		Consistency Determination
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			environment. Refer to Section 3.10, Public Services and Utilities.
	Policy OSC-7.2	The City will require demonstration of adequate long-term water supply for large development projects, as defined in Water Code 10912(a) (also known as Senate Bills 610 and 221).	**Consistent:** A Water Supply Assessment was prepared as part of this Draft EIR in accordance with Water Code 10911(a), which found that water supplies would be adequate. Moreover, a water supply environmental effects analysis was prepared for the proposed project, which found that the annual delivery of approximately 120 acre-feet of water to the proposed project would have a less than significant physical effect on the environment. Refer to Section 3.10, Public Services and Utilities.
	Policy OSC-7.3	The City will condition approval of new developments on the availability of sufficient water supply, storage, and fire flow (water pressure), per City standards.	**Consistent:** This Draft EIR evaluates water supply and found that water supplies would be adequate. Moreover, a water supply environmental effects analysis was prepared for the proposed project, which found that the annual delivery of approximately 120 acre-feet of water to the proposed project would have a less than significant physical effect on the environment. Refer to Section 3.10, Public Services and Utilities.
	Policy OSC-7.4	The City will require the use of water conservation technologies, such as low-flow toilets, efficient clothes washers, and efficient water-using industrial equipment in new construction, in accordance with code requirements.	**Consistent:** The proposed project would employ all applicable water efficient plumbing fixtures as required by Plumbing Code requirements.
	Policy OSC-7.8	New developments shall incorporate climate-appropriate landscaping to reduce water demand and ongoing maintenance costs.	**Consistent:** The proposed project would comply with the City's water efficient landscaping requirements set forth in the City Code.
	Goal OSC-8	Improve energy efficiency, encourage renewable energy generation and use, and reduce	**Consistent**: The proposed project would be designed and constructed in accordance with the adopted energy efficiency standards in Title

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		ongoing household and business energy costs.	24 of the California Code of Regulations, which are among the most stringent in the United States. Thus, the proposed project would promote the efficient use of energy.
	Objective OSC-8	Exceed Statewide energy efficiency gains in Suisun City between present and 2035.	**Consistent:** This objective applies to the City as a whole and need not be satisfied by each individual project that is approved. The proposed project would be designed and constructed with accordance with the adopted energy efficiency standards in Title 24 of the California Code of Regulations, which are among the most stringent in the United States. Furthermore, warehouses are among the lowest users of electricity and natural gas on a per square foot basis and, thus, the proposed project's structures would have a relatively low energy demand per square foot in Suisun City. Thus, it would be expected that the proposed project would contribute to the objective of exceeded Statewide energy efficiency gains.
	Policy-OSC-8.1	The City will implement relevant policies from the Land Use and Transportation Elements that encourage connected transportation networks, provide for alternate modes of transportation, and encourage mixed-use and compact development patterns to reduce transportation energy use in Suisun City.	**Consistent:** This policy applies to the City as a whole and need not be satisfied by each individual project that is approved. The proposed project would locate jobs in proximity to housing and improve its frontages with Walters Road and Petersen Road to provide pedestrian and transit facilities and maintain the existing bicycle facilities. These characteristics would promote reductions in transportation energy use.

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	Policy OSC-8.2	The City will require that new developments are designed for maximum energy efficiency, taking into consideration such factors as building-site orientation and construction, articulated windows, roof overhangs, appropriate building and insulation materials and techniques, and other architectural features that improve passive interior climate control.	**Consistent:** The proposed project would be designed and constructed with accordance with the adopted energy efficiency standards in Title 24 of the California Code of Regulations.
	Policy OSC-8.5	The City will require that new buildings meet State standards for energy efficiency and provide for renewable energy development and use, to the greatest extent feasible.	**Consistent:** The proposed project would be designed and constructed with accordance with the adopted energy efficiency standards in Title 24 of the California Code of Regulations.
	Policy OSC-8.8	The City will encourage the installation and use of active solar systems to reduce electricity use from the grid.	**Not Applicable:** This policy stops short of requiring the installation of active solar systems in all new development. Because the project site is regularly overflown by military aircraft, the Travis Air Force Base Land Use Compatibility Plan strictly limits solar installations within these areas.
	Goal OSC-9	Manage growth in a way that is supportive of continued viable agricultural practices.	**Consistent:** The project site is not mapped as Important Farmland and is used for grazing. Moreover, it is located with the Suisun City SOI and thus is contemplated to be part of the City's probable future boundaries. Finally, grazing land located east and south of the project site is in the City's long-term SOI and thus would be expected to remain in agricultural production for the foreseeable future. When evaluated in context, the proposed project promotes growth management that is supportive of viable agricultural practices.
	Objective OSC-9	The City will plan in a way that preserves important agricultural land and supports the ongoing operation of agriculture and agriculture related activities.	**Consistent:** The project site is not mapped as Important Farmland and is used for grazing. Moreover, it is located with the Suisun City SOI and thus is contemplated to be part of the City's probable future

Element	Goal/Objective/Policy		Consistency Determination
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			boundaries. Finally, grazing land located east and south of the project site is in the City's long-term SOI and would be expected to remain in agricultural production for the foreseeable future.
	Policy OSC-9.1	New developments in areas adjacent to ongoing agricultural operations shall be planned and designed to avoid introducing any compatibility issue that would reasonably be expected to pressure to prematurely convert farmland to a nonagricultural use.	**Consistent:** The proposed project's warehouse and open space uses would adjoin the grazing land to the east. Both warehouse and open space uses are compatible with agricultural operations.
	Policy OSC-9.2	New developments adjacent to ongoing agricultural operations shall provide written notice to landowners and residents regarding potential noise, dust, odors, and other effects of adjacent agriculture.	**Consistent:** Pursuant to this policy, project tenants would be provided written notice regarding the presence of nearby agricultural operations.
	Policy OSC-9.3	New developments adjacent to ongoing agriculture shall incorporate design, construction, and maintenance techniques to minimize conflicts with adjacent agricultural uses, including conflicts related to odors.	**Consistent:** The proposed project would provide a fence or similar barrier between the warehouse uses and the grazing land to the east. Furthermore, the drainage channel would be located between the project perimeter and the grazing land.
	Policy OSC-9.3	New developments will not require compensatory mitigation for the loss of grazing land or for conflicts with County agricultural zoning, provided the subject project or plan is consistent with the General Plan and City pre-zoning and zoning.	**Consistent:** The proposed project would be consistent with the General Plan and City pre-zoning. Moreover, the loss of grazing land is evaluated in Impact LU-4 and was determined to not conflict with the applicable provisions of the Cortese-Knox-Hertzberg Act.
	Goal CFS-1	Provide facilities and services to new and existing residents and businesses at levels that maintain or improve the local quality of life and fiscal sustainability of the community.	**Consistent:** This Draft EIR evaluates impacts on public services and utility providers and concludes that acceptable levels of service would be maintained after development of the proposed project. Refer to Section 3.10, Public Services and Utilities, for further discussion.

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8—Community Facilities and Services	Objective CFS-1	Plan, prioritize, program, and fund community facilities and services to accommodate development anticipated at buildout of the 2035 General Plan.	**Consistent:** This Draft EIR evaluates impacts on public services and utility providers and concludes that acceptable levels of service would be maintained after development of the proposed project. Refer to Section 3.10, Public Services and Utilities, for further discussion.
	Policy CFS-1.1	New developments will be required to demonstrate, to the satisfaction of the City Engineer, that existing services and utilities can accommodate the increased demand generated by the subject project or that project conditions would adequately mitigate for impacts associated with addition demand.	**Consistent:** This Draft EIR evaluates impacts on utilities including water, wastewater, storm drainage, solid waste, and energy, and concludes that acceptable levels of service would be maintained after development of the proposed project. Refer to Section 3.10, Public Services and Utilities, for further discussion.
	Goal CFS-2	Maintain public safety facilities and services for new and existing residents and businesses that protect the public health, safety, and welfare.	**Consistent:** This Draft EIR evaluates impacts on public services including fire protection and police protection and concludes that acceptable levels of service would be maintained after development of the proposed project. Refer to Section 3.10, Public Services and Utilities, for further discussion.
	Objective CFS-2	Provide staffing levels, facilities, and community design required to maintain acceptable emergency response times and effective public safety services.	**Consistent:** This Draft EIR evaluates impacts on public services including fire protection and police protection and concludes that acceptable levels of service would be maintained after development of the proposed project. Refer to Section 3.10, Public Services and Utilities, for further discussion.
	Policy CFS-2.2	New developments will be required to design, and the City will maintain streets that facilitate acceptable emergency access and response times.	**Consistent:** The proposed project would comply with all applicable Fire Code requirements, including providing the minimum number of access points and providing minimum width on internal streets for large emergency vehicles. Refer to Section 3.10, Public Services and Utilities, for further discussion.
	Policy CFS-2.3	New developments shall be designed, constructed, and equipped consistent with	**Consistent:** The proposed project would comply with all applicable Fire Code requirements, including

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		requirements of the California Fire Code to reduce fire risk.	fire alarm and suppression systems. Refer to Section 3.10, Public Services and Utilities, for further discussion.
	Policy CFS-2.5	The Police Department should review development proposals and provide recommendations that would ensure adequate access and community surveillance.	**Consistent:** This Draft EIR evaluates impacts on police protection and concludes that acceptable levels of service would be maintained after development of the proposed project. Refer to Section 3.10, Public Services and Utilities, for further discussion.
	Policy CFS-2.6	The Fire Department should review development proposals and provide recommendations that would ensure adequate emergency access, fire suppression equipment, and other features that reduce fire risk.	**Consistent:** This Draft EIR evaluates impacts on fire protection and concludes that acceptable levels of service would be maintained after development of the proposed project. Refer to Section 3.10, Public Services and Utilities, for further discussion.
	Goal CFS-6	Provide an adequate supply of clean and safe water to meet anticipated demand.	**Consistent:** A Water Supply Assessment was prepared as part of this Draft EIR and identified a strategy by which long-term water supplies can be made available to serve the proposed project. The proposed strategy requires a water exchange with Solano Irrigation District. Moreover, a water supply environmental effects analysis was prepared for the proposed project, which found that the annual delivery of approximately 120 acre-feet of water to the proposed project would have a less than significant physical effect on the environment. Refer to Section 3.10, Public Services and Utilities, for further discussion.
	Objective CFS-6	Ensure ongoing maintenance and improvements to the water system and adequate supply to meet the needs of existing and new development.	**Consistent:** The proposed project would be served by a looped water system, which it would be responsible for installing and maintaining. Refer to Section 3.10, Public Services and Utilities, for further discussion.
	Policy CFS-6.1	New developments will be required to demonstrate the	**Consistent:** A Water Supply Assessment was prepared as part of

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		availability of adequate water supply and infrastructure, including during multiple dry years and adequate fire flow pressure, prior to approval.	this Draft EIR and identified a strategy by which long-term water supplies can be made available to serve the proposed project. The proposed strategy requires a water exchange occurs with Solano Irrigation District. Moreover, a water supply environmental effects analysis was prepared for the proposed project, which found that the annual delivery of approximately 120 acre-feet of water to the project would have a less than significant physical effect on the environment. Refer to Section 3.10, Public Services and Utilities, for further discussion.
	Policy CFS-6.4	New developments shall include water conservation technologies, such as low-flow toilets, efficient clothes washers, and efficient water-using industrial equipment, in accordance with State law.	**Consistent:** The proposed project would comply with the applicable requirements of the Plumbing Code, including the use of water efficient fixtures such as low-flush toilets.
	Goal CFS-7	Provide for adequate sewage system capacity, treatment, and disposal.	**Consistent:** This Draft EIR evaluates impacts on wastewater collection and treatment and concludes that acceptable levels of service would be maintained after development of the proposed project. Refer to Section 3.10, Public Services and Utilities, for further discussion.
	Objective CFS-7	Facilitate Fairfield-Suisun Sewer District's Master Plan and ensure that future sewage systems are designed to meet or exceed all applicable water quality standards and are located to protect waterways, the Suisun Marsh, and other groundwater resources.	**Consistent:** This Draft EIR evaluates project wastewater generation against the projections in the Fairfield-Suisun Sewer District's Master Plan and concludes that acceptable levels of service would be maintained after development of the proposed project. Refer to Section 3.10, Public Services and Utilities, for further discussion.
	Policy CFS-7.2	New developments will be required to contribute on a fair-share basis toward implementation of system improvements, as determined by the City Engineer.	**Consistent:** The applicant would install all utility infrastructure needed to serve the proposed project and be responsible for those costs as well as any identified fair share fees for citywide improvements.

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	Goal CFS-8	Provide storm drainage and flood protection systems that protect property, ensure public safety and environmental health, and prevent erosion and flooding.	**Consistent:** This Draft EIR evaluates impacts on storm drainage and concludes that acceptable levels of service would be maintained after development of the proposed project. Refer to Section 3.10, Public Services and Utilities, for further discussion.
	Objective CFS-8	Maintain adequate storm drainage and plan for phased improvements to drainage infrastructure to serve new growth and address existing deficiencies.	**Consistent:** The applicant would install all storm drainage infrastructure needed to serve the proposed project. No improvements to existing storm drainage facilities would be necessary. Refer to Section 3.10, Public Services and Utilities, for further discussion.
	Policy CFS-8.2	New developments will be required to construct and dedicate facilities for drainage collection, conveyance, and detention and/or contribute on a fair-share basis to areawide drainage facilities that serve additional demand generated by the subject project.	**Consistent:** The applicant would install all storm drainage infrastructure needed to serve the proposed project. No improvements to existing storm drainage facilities would be necessary. Refer to Section 3.10, Public Services and Utilities, for further discussion.
	Goal CFS-9	Provide safe, convenient, and environmentally responsible waste disposal and recycling services.	**Consistent:** The proposed project would be served with solid waste and recycling services. Refer to Section 3.10, Public Services and Utilities for further discussion.
	Objective CFS-9	To ensure adequate solid waste disposal services and increase recycling and reuse among residents, businesses, and the City.	**Consistent:** The proposed project would comply with all ordinances that pertain to construction demolition debris recycling and provision of facilities recycling during operations.
	Policy CFS-9.2	New developments will be required to demonstrate adequate capacity to accommodate solid waste demand, including processing, recycling, transportation, and disposal.	**Consistent:** This Draft EIR evaluates impacts on solid waste and concludes that acceptable levels of service would be maintained after development of the proposed project. Refer to Section 3.10, Public Services and Utilities, for further discussion.

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	Policy CFS-9.5	New developments and significantly remodeled existing uses will be required to incorporate convenient exterior storage areas for solid waste, recyclables, and green waste.	**Consistent:** The proposed project would comply with all ordinances that pertain to provision of facilities recycling during operations.
	Goal PHS-1	Ensure that Noise Does Not Substantially Reduce the Quality of Urban Life.	**Consistent:** This Draft EIR evaluates project-related noise impacts and sets forth mitigation measures to reduce noise to acceptable levels. Refer to Section 3.9, Noise.
9—Public Health and Safety	Objective PHS-1	Require review and conditioning of new developments to mitigate noise impacts.	**Consistent:** This Draft EIR evaluates project-related noise impacts and sets forth mitigation measures to reduce noise to acceptable levels. Refer to Section 3.9, Noise.
	Policy PHS-1.1	Large-scale commercial land uses that could require 50 or more large truck trips per day shall route truck traffic to SR 12 or Arterials and avoid Collectors and Local Streets.	**Consistent:** Trucks serving the proposed project would follow SR-12, Walters Road, and Petersen Road, which are all designated truck routes.
	Policy PHS-1.2	New development shall be designed to disperse vehicular traffic onto a network of fully connected smaller roadways.	**Consistent:** The proposed project would be served by a network of internal roadways that would connect to Walters Road and Petersen Road.
	Policy PHS-1.3	Industrial and other noise-generating land uses should be located away from noise-sensitive land uses or should use noise attenuation methods, such as enclosing substantial noise sources within buildings or structures, using muffling devices, or incorporating other technologies designed to reduce noise levels.	**Consistent:** The proposed warehouse uses would be located as far from the existing residential uses along Walters Road as practical. Additionally, the proposed project would employ the use of noise barriers, enclosures, rooftop parapets, and other measures to reduce noise exposure.
	Policy PHS-1.4	The City will use all feasible means to reduce the exposure of sensitive land uses to excessive noise levels and mitigate where noise levels exceed those specified in Table 9-1.	**Consistent:** This Draft EIR evaluates noise impacts on surrounding nearby sensitive receptors and concludes that impacts are less than significant after implementation of construction noise abatement measures. Refer to Section 3.9, Noise.

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	Policy PHS-1.6	Lands within the 65 CNEL noise contour of Travis AFB [Air Force Base] shall be maintained in agricultural, open space, commercial, industrial, or other uses permitted by Travis AFB Land Use Compatibility Plan (LUCP) and consistent with the recommendations of the Travis AFB Protection Element, including noise contours associated with future Air Base operations, as appropriate.	**Consistent:** The portions of the project site proposed for development overlap with the 60 to 70 dBA CNEL contours. All of the proposed industrial uses are considered "marginally acceptable" or "clearly acceptable" within these noise contours. Thus, the proposed project would be compatible with Travis Air Force Base. Refer to Impact LU-3.
	Policy PHS-1.8	Sound walls are prohibited as a method for reducing noise exposure that could be addressed through other means, such as, site design, setbacks, earthen berms, or a combination of these techniques.	**Consistent:** Sound walls are not required to mitigate project noise impacts. Refer to Section 3.9, Noise.
	Policy PHS-1.9	New developments shall implement feasible noise mitigation to reduce construction noise and vibration impacts. Projects that incorporate feasible mitigation will not be considered by the City to have significant impacts for the purposes of California Environmental Quality Act review.	**Consistent:** This Draft EIR evaluates construction noise and vibration impacts on surrounding nearby sensitive receptors and concludes that impacts are less than significant after implementation of construction noise abatement measures. Refer to Section 3.9, Noise.
	Goal PHS-2	Minimize Long-Term Vibration Impacts Associated with Development Projects and Nearby Land Uses.	**Consistent:** This Draft EIR evaluates operational vibration impacts on surrounding nearby sensitive receptors and concludes that impacts are less than significant. Refer to Section 3.9, Noise.
	Objective PHS-2	Achieve City and other relevant agency vibration performance standards.	**Consistent:** This Draft EIR evaluates operational vibration impacts on surrounding nearby sensitive receptors and concludes that impacts are less than significant. Refer to Section 3.9, Noise.
	Policy PHS-2.2	New developments that would generate substantial long-term vibration shall provide analysis and mitigation, as feasible, to achieve velocity levels, as experienced at habitable structures of vibration-	**Consistent:** This Draft EIR evaluates operational vibration impacts on surrounding nearby sensitive receptors and concludes that impacts are less than significant. Refer to Section 3.9, Noise.

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		sensitive land uses, of less than 78 vibration decibels.	
	Goal PHS-3	Minimize Exposure to Air Pollutants.	**Consistent:** This Draft EIR evaluates project-related emissions of criteria pollutants and toxic air contaminants and proposes mitigation measures to minimize exposure to air pollutants. Refer to Section 3.2, Air Quality.
	Objective PHS-3	Reduce emissions that produce harmful air pollutants.	**Consistent:** This Draft EIR evaluates project-related emissions of criteria pollutants and toxic air contaminants and proposes mitigation measures to reduce exposure to harmful air pollutants. Refer to Section 3.2, Air Quality.
	Policy PHS-3.1	The City will ensure that new industrial, manufacturing, and processing facilities that may produce toxic or hazardous air pollutants are located at an adequate distance from residential areas and other sensitive receptors, considering weather patterns, the quantity and toxicity of pollutants emitted, and other relevant parameters.	**Consistent:** The proposed project is located in the southeastern corner of Suisun City. The project site is more than 200 feet from the nearest residential receptor, with the warehouse and light industrial uses more than 700 feet from the nearest residential receptor. Furthermore, the prevailing winds are from the west and southwest, which would direct project-related emissions away from sensitive receptors. Refer to Section 3.2, Air Quality.
	Policy PHS-3.2	The City will communicate with the Bay Area Air Quality Management District to identify sources of toxic air contaminants and determine the need for health risk assessments prior to approval of new developments.	**Consistent:** A Health Risk Assessment was prepared in accordance with Bay Area Air Quality Management District guidance that evaluated project-related emissions of toxic air contaminants. Refer to Section 3.2, Air Quality.
	Policy PHS-3.3	The City will require projects that could result in significant air pollutant emissions impacts to reduce operational emissions from vehicles, heating and cooling, lighting, equipment use, and other proposed new sources.	**Consistent:** This Draft EIR evaluates project-related emissions of criteria pollutants and finds that impacts would exceed thresholds of significance. As such, this Draft EIR proposes mitigation measures that, if adopted by the City Council, would require TDM, anti-diesel idling measures, and energy efficiency measures to reduce

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			emissions. Refer to Section 3.2, Air Quality.
	Policy PHS-3.4	The City will require implementation of applicable emission control measures recommended by the Bay Area Air Quality Management District for construction, grading, excavation, and demolition.	**Consistent:** All applicable Bay Area Air Quality Management District-recommended dust control and construction equipment emissions reduction measures are required as mitigation measures. Refer to Section 3.2, Air Quality.
	Goal PHS-4	Reduce Local Greenhouse Gas Emissions and Reduce the Local Effects of Global Climate Change.	**Consistent:** This Draft EIR evaluates project-related emissions of greenhouse gases and sets forth mitigation measures to reduce emissions. Refer to Section 3.6, Greenhouse Gas Emissions.
	Objective PHS-4	Reduce the City's contribution to global climate change effects.	**Consistent:** This objective applies to the City as a whole, and need not be satisfied by each individual project that is approved. This Draft EIR evaluates project-related emissions of greenhouse gases and proposes mitigation measures that would reduce emissions in a manner consistent with State and City objectives. Refer to Section 3.6, Greenhouse Gas Emissions and Energy.
	Policy PHS-4.2	The City will guide land use change, direct investments, and apply its fees and programs to encourage more GHG-efficient development patterns, as feasible.	**Consistent:** The proposed project promotes GHG-efficient development patterns by locating a major employment center at the junction of two regional roadways, thereby making it more efficient for employees and deliveries to access the project.
	Goal PHS-5	Maintain and Improve Water Quality.	**Consistent:** This Draft EIR, as well as the Planned United Development, proposes mitigation measures for construction and operational stormwater pollution prevention that are consistent with the goal of maintaining and improving water quality. Refer to Section 3.7, Hydrology and Water Quality.

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	Objective PHS-5	Maintain and improve water quality in a way that provides public and environmental health benefits.	**Consistent:** This Draft EIR, as well as the Planned United Development, proposes mitigation measures for construction and operational stormwater pollution prevention that are consistent with the objective of maintaining and improving water quality in a way that provides public and environmental health benefits. Refer to Section 3.7, Hydrology and Water Quality.
	Policy PHS-5.1	New development shall incorporate site design, source control, and treatment measures to keep pollutants out of stormwater during construction and operational phases, consistent with City and Fairfield-Suisun Urban Runoff Management Program standards.	**Consistent:** The proposed project's construction stormwater pollution prevention measures would employ the treatment measures required by the General Permit. The proposed project's storm drainage system would use bioretention as a primary method of treatment consistent with the City and Fairfield-Suisun Urban Runoff Management Program. Refer to Section 3.7, Hydrology and Water Quality.
	Policy PHS-5.2	New developments shall incorporate low impact development (LID) strategies, such as rain gardens, filter strips, swales, and other natural drainage strategies, to the greatest extent feasible, in order to reduce stormwater runoff levels, improve infiltration to replenish groundwater sources, reduce localized flooding, and reduce pollutants close to their source.	**Consistent:** The proposed project's storm drainage system would use bioretention as a primary method of treatment, which is an LID strategy. Refer to Section 3.7, Hydrology and Water Quality.
	Policy PHS-5.3	New developments should minimize the land area covered with driveways, loading areas, and parking lots in order to reduce stormwater flows, reduce pollutants in urban runoff, recharge groundwater, and reduce flooding.	**Consistent:** The proposed project's storm drainage system would use bioretention as a primary method of treatment, which would reduce flows, reduce pollutants, recharge groundwater, and reduce flooding. Refer to Section 3.7, Hydrology and Water Quality.
	Policy PHS-5.5	Industrial land uses with high wastewater generation rates or effluent pollutant concentrations may be required by the Fairfield-	**Consistent:** Fairfield-Suisun Sewer District assessed the proposed project's effluent generation and determined that existing

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		Suisun Sewer District to install equipment for pre-treatment of wastewater.	infrastructure is adequate. Additionally, the proposed project would not have any end uses that would require pre-treatment.
	Goal PHS-10	Reduce Potential Human Injury or Property Damage During the Manufacture, Storage, or Transportation of Hazardous Substances.	**Consistent:** This Draft EIR evaluates impacts associated with hazardous materials and proposes mitigation measures that, if adopted by the City Council, would reduce potential human injury or property damage. Refer to Section 3.6, Hazards and Hazardous Materials.
	Objective PHS-10	Avoid and minimize health risk associated with hazardous materials.	**Consistent:** This Draft EIR evaluates impacts associated with hazardous materials and proposes mitigation measures that, if adopted by the City Council, would minimize potential human health risk. Refer to Section 3.6, Hazards and Hazardous Materials.
	Policy PHS-10.1	The City will assess risks associated with public investments and other City-initiated actions, and new private developments shall assess and mitigate hazardous materials risks and ensure safe handling, storage, and movement in compliance with local, State, and federal safety standards.	**Consistent:** This Draft EIR evaluates impacts associated with hazardous materials and concludes that the routine use of commonly used hazardous materials during operations would not present a significant safety risk. Refer to Section 3.6, Hazards and Hazardous Materials.
	Goal PHS-11	Minimize the loss of life and damage to property caused by flood events.	**Consistent:** The proposed project would protect the portions of the site that are mapped as 100-year flood hazard areas as open space, which would serve to minimize the loss of life and damage to property caused by flooding. Refer to Section 3.7, Hydrology and Water Quality.
	Objective PHS-11	Manage land use change and plan for flood protection in way that is consistent with applicable federal and State guidelines.	**Consistent:** The proposed project would protect the portions of the site that are mapped as 100-year flood hazard areas as open space, consistent with federal and State guidelines. Refer to Section 3.7, Hydrology and Water Quality.
	Policy PHS-11.2	The City will use the most current flood hazard and floodplain	**Consistent:** This Draft EIR and PUD reviewed the most recent

Element	Goal/Objective/Policy		Consistency Determination
	No.	Text	
		information from State and federal agencies (such as the State Department of Water Resources, the Federal Emergency Management Agency, and the Army Corps of Engineers) as a basis for project review and to guide development, in accordance with federal and State regulations.	floodplain mapping issued by Federal Emergency Management Agency (FEMA) as the basis for assessing 100-year flood hazard impacts. Refer to Section 3.7, Hydrology and Water Quality.
	Policy PHS-11.4	The City will require evaluation of potential flood hazards before approving development projects.	**Consistent:** This Draft EIR evaluates 100-year flood hazard areas and concludes that all development would be located outside of such areas. Refer to Section 3.7, Hydrology and Water Quality.
	Goal PHS-12	Reduce Potential Human Injury or Property Damage from Fires.	**Consistent:** This Draft EIR evaluates the potential for exposure to fire hazards and concludes that impacts would be less than significant. Refer Section 3.10, Public Services and Utilities.
	Objective PHS-12	Manage land use change, building design, and site planning in a way that minimizes fire risk.	**Consistent:** All project buildings would be constructed in accordance with Fire Code requirements for fire suppression systems and emergency access. Refer Section 3.10, Public Services and Utilities.
	Policy PHS-12.2	The City will require that new development and redevelopment projects ensure adequate water flow for fire suppression, as required by the Building Department.	**Consistent:** All project buildings would be constructed in accordance with Fire Code requirements for fire flow and fire suppression. Refer Section 3.10, Public Services and Utilities.
	Goal PHS-14	Reduce risks to people and property from geologic hazards and soils conditions.	**Consistent:** This Draft EIR evaluates impacts associated with geological hazards and proposes mitigation measures that would reduce such hazards to people and property. Refer Section 3.5, Geology, Soils, and Seismicity.
	Objective PHS-14	Avoid risks to property and life through the implementation of City policies, programs, and standards related to geologic and soils hazards.	**Consistent:** All project buildings would comply with California Building Standards Code (CBC) requirements for structural requirements and seismic safety

Element	Goal/Objective/Policy		Consistency Determination
	No.	Text	
			criteria. Refer Section 3.5, Geology, Soils, and Seismicity.
	Policy PHS-14.1	The City will implement State and local building code requirements, including those related to structural requirements and seismic safety criteria, in order to reduce risks associated with seismic events and unstable and expansive soils.	**Consistent:** All project buildings would comply with CBC requirements structural requirements and seismic safety criteria. Refer Section 3.5, Geology, Soils, and Seismicity.
	Policy PHS-14.2	The City will require the preparation of a geotechnical site investigation for new development projects, which will be required to implement recommendations to reduce the potential for ground failure due to geologic or soil conditions.	**Consistent:** A preliminary soil investigation was prepared that evaluated geologic and soil conditions and is provided as Appendix E. Refer Section 3.5, Geology, Soils, and Seismicity.
	Policy PHS-14.3	The City will require new developments that could be adversely affected by geological and/or soil conditions to include project features that minimize these risks.	**Consistent:** All project buildings would comply with CBC requirements for grading and foundations, which would abate hazards associated with geological and soil conditions. Refer Section 3.5, Geology, Soils, and Seismicity.
	Goal PHS-16	Reduce the Potential for Human Injury or Property Damage Resulting from Activities at Travis Air Force Base.	**Consistent:** This Draft EIR evaluates project compatibility with Travis Air Force Base and concludes that the project would not result in undue risk for human injury or property damage. Refer to Impact LU-3.
	Objective PHS-16	Promote the ongoing mission of Travis AFB, while avoiding local risks related to ongoing operations.	**Consistent:** This Draft EIR evaluates project compatibility with Travis Air Force Base and concludes that the project would not interfere with the ongoing mission of Travis Air Force Base. Refer to Impact LU-3.
	Policy PHS-16.1	The City will regularly coordinate closely with Travis AFB to ensure that existing and future land uses do not interfere with existing or planned operations at the Base.	**Consistent:** The City and applicant team have met with Travis Air Force Base land use staff. The Draft EIR concludes that the proposed project is compatible with Air Base operations. Refer to Impact LU-3.
	Policy PHS-16.2	Notwithstanding other provisions of the plan, the City will restrict land uses and the height of	**Consistent:** All project buildings would be within the allowable height limits established by Federal

Element	Goal/Objective/Policy		Consistency Determination
	No.	Text	
		development according to the requirements of the Travis AFB Airport Land Use Compatibility Plan.	Aviation Administration (FAA) Part 77, which pertains to encroachment into airspace around airports and military aviation facilities. Refer to Impact LU-3.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

City Code Consistency

Impact LU-2: **The proposed project would not conflict with any applicable provisions of the Suisun City Code.**

Impact Analysis

The proposed project would develop approximately 2.1 million square feet of high-cube warehouse uses on approximately 120 acres and preserve approximately 47 acres as open space. The project site would be annexed into the city limits.

The project site would be pre-zoned “Commercial Services and Fabricating (CSF)” and “Open Space (OS).” The CSF zoning district would coincide with the portion of the project site contemplated to support the proposed warehouses and the OS zoning district would coincide with portion of the project site that would be preserved as open space. The Planned Unit Development (PUD) includes a table of permitted land use activities, which defines allowable uses in the CSF and OS zoning districts and prohibits non-compatible uses (i.e., warehouses in the OS zoning district).

These zoning districts were created for the specific purpose of facilitating project development. Thus, the proposed project’s end uses would be consistent with the City Code designations when the project is approved and the proposed rezoning is adopted. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Airport Land Use Plan Consistency

Impact LU-3: The proposed project would not conflict with applicable provisions of the Travis Air Force Base Land Use Compatibility Plan.

Impact Analysis

This impact will assess project consistency with the Travis Air Force Base Land Use Compatibility Plan (LUCP). Analysis is based in part on a consistency study of the proposed project with Travis Air Force Base LUCP, included as Appendix H.

Aviation Noise

As indicated in Exhibit 3.10-1, the project site overlaps with the 60 dBA CNEL, 65 dBA CNEL, 70 dBA CNEL and 75 dBA CNEL aviation noise contours. The eastern and southern portions of the project site are within the 75 dBA CNEL contour, while the western and central portions of the site are within the 60 to 70 dBA CNEL contours.

The Travis Air Force Base LUCP indicates that offices, retail trade, hotel and motel uses are "marginally acceptable" within the 60 to 70 dBA CNEL contours and service commercial, wholesale trade, warehousing, and light industrial uses are "marginally acceptable"[1] within the 65 to >70 dBA CNEL contours. These latter uses are considered "clearly acceptable" within the 60 to 65 dBA CNEL contour.

The portions of the project site proposed for development overlap with the 60 to 70 dBA CNEL contours. All the proposed warehouse uses are considered marginally acceptable or clearly acceptable within these noise contours. The uses that are classified as marginally acceptable would be required to minimize the amount of outdoor activity areas and provide air conditioning to allow occupants the option of closing windows.

The areas proposed for open space are located within the >70 dBA CNEL contour. Because open space preservation would effectively represent a continuation of an existing land use activity within this portion of the project site, it would be compatible with this noise contour. See also the discussion in Appendix H of the proposed project's consistency with noise policies of the Travis Air Force Base Airport LUCP.

Compatibility Zone B1

A small portion of the project site is within Travis Air Force Base Airport LUCP Compatibility Zone B1, where indoor uses should be limited to an intensity of 15 people per acre and outdoor uses would be limited to 20 people per acre; refer to Exhibit 3.9-4. All of this acreage within Zone B1has been permanently preserved as open space, which is an acceptable use within Zone B1.

[1] Marginally Acceptable: The indicated noise exposure will cause moderate interference with outdoor activities and with indoor activities when windows are open. The land use is acceptable on the condition that outdoor activities are minimal and construction features which provide sufficient noise attenuation are used (e.g., installation of air conditioning so that windows can be kept closed). Under other circumstances, the land use should be discouraged.

The existing open space preservation area would have the potential to attract wildlife and, therefore, the applicant would be required to prepare a Wildlife Hazards Assessment. The applicant commissioned a Wildlife Hazards Assessment, included here as Appendix I, which confirmed that the proposed project would not have avian attractant characteristics and that the construction and development associated with the project would not increase the activity or presence of birds or any other wildlife, and, therefore, not present any hazard to Travis Air Force Base flight operations. See also Draft EIR Section 2.2.8 for a description of project design features that would minimize the proposed project's attractiveness for wildlife species and Appendix H for a discussion on wildlife and the proposed project's associated lack of conflict with the Travis Air Force Base Airport LUCP.

Compatibility Zone C

The 120 acres proposed for industrial development overlap with Travis Air Force Base Airport LUCP Compatibility Zone C, where indoor uses should be limited to an intensity of 75 people per acre and outdoor uses should be limited to 100 people per acre, with a 300-person maximum per acre; refer to Exhibit 3.9-4. This zone allows all uses except for those that would house large populations of sensitive uses (e.g., children's schools, day care centers, libraries, hospitals, and nursing homes). The proposed project's warehouse uses would be acceptable uses within this zone. A limited amount of space for ancillary uses (e.g., office, food service, etc.) would be provided within the warehouses and would also be acceptable uses within Zone C. Nevertheless, a density discussion follows.

The Airport LUCP identifies three methods for calculating density: (1) parking ordinance; (2) maximum occupancy; and (3) other methodologies in cases where density cannot be reasonably estimated based upon parking or square footage. The Airport LUCP identifies the parking ordinance methodology as the preferred method for calculating density. In this case, however, the parking ordinance methodology would not be appropriate because a significant amount of parking stalls would be used for trailer storage[2], which provides no insight into the maximum number of persons on-site at any given time. Thus, it is not possible to meaningfully calculate density using the parking ordinance methodology.

The maximum occupancy methodology is most appropriate because it is based on typical Building Code occupancy limits, which can be calculated based on the known project characteristics. Because the ancillary office space within each building (up to 16,000 square feet) is the most intense use, it has been broken out separately from the warehouse use. Table 3.9-3 summarizes the maximum occupancy calculation.

Table 3.9-3: Maximum Occupancy Calculation

Use	Maximum Square Feet	Maximum Floor Area Allowances per Occupant (California Building Standards Code)	Density (Persons)
Warehouse	1,962,667	1 person/500 square feet (Gross)	3,926
Ancillary Office	96,000	1 person/100 square feet (Gross)	960
Total	*2,058,667*	–	*4,886*

[2] Warehouse end users typically have provisions in their contractual agreements with trucking companies that require empty trailers to be left on-site when loaded trailers are picked up.

Use	Maximum Square Feet	Maximum Floor Area Allowances per Occupant (California Building Standards Code)	Density (Persons)
Adjustment for Observed Occupancy (50 percent)			4,886 x .5
Adjusted Density			**2,443**

Notes:
Maximum Floor Area Allowances Per Occupant values obtained from California Airport Planning Land Use Handbook (Exhibit G1).
50 percent reduction applied to subtotal to reflect actual observed occupancy rates in accordance with California Airport Planning Land Use Handbook Guidance (Exhibit G2).
Source: FirstCarbon Solutions (FCS). 2021.

Table 3.9-4 summarizes the maximum site and indoor density calculations. As shown in Table 3.9 4, the project complies with all density recommendations. Since the Travis Air Force Base Airport Land Use Commission (ALUC) does not include density calculations, the California Airport Land Use Planning Handbook was used as a technical resource to calculate density for this project.

Table 3.9-4: Maximum Site and Indoor Density Calculations

Maximum Site Density (≤ 100 persons/acre)		Maximum Indoor Density (≤ 75 persons/acre)	
Calculation	**Density**	**Calculation**	**Density**
2,443 persons ÷ 120 acres	20.4 persons/acre	2,443 persons ÷ 48.3 acres	50.6 persons/acre

Notes:
2,058,667 square feet ÷ 43,560 square feet/acre = 48.3 acres
Calculations follow guidance provided in Exhibit G2 of California Airport Planning Land Use Handbook.
Source: FirstCarbon Solutions (FCS). 2021.

The proposed project's warehouse buildings would range between 3.4 acres (145,397 square feet) and 15.1 acres (644,782 square feet) in size and, therefore, calculating maximum single acre density using 2,443 persons is problematic.[3] Based on direction from Solano County ALUC staff, the maximum single acre density calculation applies the ancillary office space within each warehouse. The project plans depict 16,000 square feet of ancillary office space in each warehouse. Table 3.9-5 summarizes the maximum single acre density calculation using the ancillary office space in a single building as a representative example. As shown in Table 3.9-5, the project complies with all density recommendations. See also Appendix H for a discussion on safety as it relates to density and the proposed project's associated lack of conflict with the Travis Air Force Base Airport LUCP.

[3] For example, the California Building Standards Code (CBC) sets forth an occupancy limit of one person per 500 square feet in warehouses. Thus, only 1,290 persons could be inside the largest building (644,782 square feet) on the project site.

Table 3.9-5: Maximum Single Acre Density Calculations

Maximum Floor Area Allowances per Occupant (California Building Standards Code)	Ancillary Office Square Feet	Calculation		Maximum Single Acre Density (≤ 300 persons/acre)	
		Density	Adjusted Density	Calculation	Result
1 person/100 square feet (gross)	16,000	16,000 ÷ 100 = 160 persons	160 persons x 0.5 = 80 persons	80 persons ÷ 1 acre	80 persons/acre

Notes:
* Maximum Floor Area Allowances Per Occupant values obtained from California Airport Planning Land Use Handbook (Exhibit G1).
* 50 percent reduction applied to subtotal to reflect actual observed occupancy rates in accordance with California Airport Planning Land Use Handbook Guidance (Exhibit G2).
* Calculations follow guidance provided in Exhibit G2 of California Airport Planning Land Use Handbook.

Source: FirstCarbon Solutions (FCS). 2021.

Wildlife Attractants

Approximately 47 acres of the project site has been permanently preserved as open space. This area contains wetlands that currently attract wildlife (e.g., avian species). Avian species are considered potential hazards to aviation activities due to the potential for bird strikes. The two aspects of the proposed project that have the greatest potential for creating aviation safety hazards are the open space area and the stormwater basins.

The open space area would represent the continuation of an existing condition. The proposed project would not materially modify this area beyond the existing conditions. Thus, the project would not introduce new aviation hazards in this respect.

The proposed stormwater basins would be designed to drain out within 48 hours of a 10-year storm event. This rapid drainage rate would minimize the amount of time the basins would hold standing water, which in turn, would reduce their avian attractant attributes. Additionally, standing water would be prevalent in many areas in the project vicinity during and immediately after a storm event; thus, the basins would not represent a greater attractant in this respect. Moreover, the basins are not intended to hold water for extended periods or to be used as an aesthetic water feature.

Furthermore, the proposed project would result in an approximately 120-acre reduction in avian foraging habitat because of the development of the proposed structures and infrastructure. This would further minimize the avian attractant attributes of the project site relative to existing conditions.

Overall, the proposed project would not increase the avian attractant attributes of the project site or nearby areas under the Travis Air Force Base flight path compared to existing conditions.

The Airport LUCP indicates that projects that have the potential to attract wildlife are required to prepare a Wildlife Hazards Assessment. The applicant retained a consultant to prepare an assessment (see Appendix I) and will implement the recommendations into the design of the open space area as a condition of approval. This would serve to minimize, if not eliminate, the wildlife

attractant attributes in a manner that reduces impacts to a level of less than significant. See also EIR Section 2.2.8 for a description of project design features that would minimize the proposed project's attractiveness for wildlife species and Appendix H for a discussion on wildlife and the proposed project's associated lack of conflict with the Travis Air Force Base Airport LUCP.

Light, Glare, Dust, Steam, and Other Aviation Hazards

As indicated in Impact AES-3 in Section 3.1, Aesthetics, Light, and Glare, the proposed project would result in new sources of light and glare. Of particular concern are land uses that emit glint, glare, or distracting lights that could be mistaken for airport lights, and sources of dust, steam, high-velocity exhaust plumes, or smoke that may impair pilot visibility. This could pose an increased hazard to aircraft operations compared to existing conditions, which could result in safety hazards for people working in the project site. The Travis Air Force Base Airport LUCP sets forth policies that concern light and glare. MM AES-3, which requires the project be designed to reduce light and glare hazards, would reduce the impact to a level of less than significant. See also Appendix H for a discussion on other potential flight hazards and the proposed project's associated lack of conflict with the Travis Air Force Base Airport LUCP.

Summary

In anticipation of potential future Travis Air Force Base expansion, the County included the project site within the Travis Reserve Area Overlay Zone, which limits incompatible adjacent uses and protects the ability of the Base to expand. As explained above, the proposed project does not include any element or design feature that would be incompatible with Base operations. The proposed project also would not preclude Base expansion. To the contrary, the proposed project includes the widening of Peterson Road for the benefit of Travis Air Force Base. Furthermore, the maximum height of the buildings constructed as part of the project (42 feet) would fall well below the height requiring review by the Airport Land Use Commissions (100 feet) and well below the maximum allowable height within the Assault Landing Zone (200 feet), in which the proposed development would be situated. Thus, the proposed project would not introduce any element that may obstruct existing, future, or expanded flight patterns.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Local Agency Formation Commission Consistency

Impact LU-4: **The proposed project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.**

Impact Analysis

The proposed project would involve a LAFCo reorganization, including annexation of the 147-acre site into the City, as well as annexation into water and sewer service districts.

Pursuant to the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000, LAFCos are required to consider 15 factors as part of an annexation application. Table 3.9-6 summarizes the criteria. As indicated in the table, the proposed annexation would be consistent with all applicable criteria. Impacts would be less than significant.

Table 3.9-6: Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 Consistency Analysis

Factor	Consistency Determination
(a) Population and population density; land area and land use; per capita assessed valuation; topography, natural boundaries, and drainage basins; proximity to other populated areas; the likelihood of significant growth in the area, and in adjacent incorporated and unincorporated areas, during the next 10 years.	**Consistent:** The project site contains undeveloped land that is used for grazing. There are no dwelling units on the project site. The project site contains flat relief and gently slopes from north to south. There are no formal drainage basins within the project site; runoff either ponds on-site or leaves the site via two drainage channels. The project site is within the Suisun City Near-Term Sphere of Influence (SOI) and the city limits are adjacent to the west and north project boundaries. Urban development within the city limits is present to the west and north of the project site.
(b) The need for organized community services; the present cost and adequacy of governmental services and controls in the area; probable future needs for those services and controls; probable effect of the proposed incorporation, formation, annexation, or exclusion and of alternative courses of action on the cost and adequacy of services and controls in the area and adjacent areas.	**Consistent:** The proposed project contemplates 2.1 million square feet of new high-cube warehouse uses on the project site and thus requires urban levels of infrastructure, services, and utilities. The City of Suisun City would provide fire and police protection; the Solano Irrigation District would provide potable water; and Fairfield-Suisun Sewer District would provide sewer service. This Draft EIR indicates that adequate service delivery can be achieved.
(c) The effect of the proposed action and of alternative actions, on adjacent areas, on mutual social and economic interests, and on the local governmental structure of the county.	**Consistent:** The proposed annexation would bring approximately 167 acres into the city limits. The development of up to 2.1 million square feet of new high-cube warehouse uses in city limits would promote new capital investment, attract new businesses, create new employment opportunities in a City that is housing rich, and expand the tax base.

Factor	Consistency Determination
(d) The conformity of both the proposal and its anticipated effects with both the adopted commission policies on providing planned, orderly, efficient patterns of urban development, and the policies and priorities set forth in Section 56377.	**Consistent:** The project site is adjacent to existing developed areas within the city limits (e.g., Walmart, Bonfare market, and the service station). The project site is within the Suisun City SOI and can be served with wet and dry utilities that exist within Walters Road and Petersen Road. Thus, the development of the project site would represent planned, orderly, and efficient patterns of urban development. Furthermore, as is discussed in Section 5, Alternatives to the proposed project, there are no other suitable locations (including infill sites) for the proposed project within the Suisun City SOI.
Section 56377 requires the Commission to consider guiding development away from existing prime agricultural lands in open space toward areas containing nonprime agricultural lands, unless that action would not promote the planned, orderly, efficient development of an area. In order to evaluate this factor the Commission must first determine whether the proposal area contains prime agricultural land. "Prime agricultural land" means an area of land, whether a single parcel or contiguous parcels, which has not been developed for a use other than an agricultural use and that meets any of the following qualifications: (a) Land that qualifies, if irrigated, for rating as Class I or Class II in the USDA [United States Department of Agriculture] Natural Resources Conservation Service land use capability classification, whether or not land is actually irrigated, provided that irrigation is feasible. (b) Land that qualifies for rating 80 through 100 Storie Index Rating. (c) Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the USDA in the National Range and Pasture Handbook, Revision 1, December 2003. (d) Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars ($400) per acre. (e) Land that has returned from the production of unprocessed agricultural plant products an annual gross value of not less than four hundred	**Consistent:** The project site does not consist of prime agricultural land, per criteria set forth in Government Code Section 56377. Per criteria (a), the site contains mostly Antioch-San Ysidro complex, 0 to 2 percent slopes and Solano load soils, with a small area of Pescadero clay loam soils. Antioch-San Ysidro complex and Solano loam soils are classified as 4s (irrigated) and 4e (non-irrigated), which are not prime soils. Pescadero clay loam soils are classified as 3w (irrigated) and 4w (non-irrigated), which are also not prime soils. Per criteria (b), because all of these soils are nonprime, the project site's Storie Index would be less than 80. Per criteria (c), the previous property owner indicated that 40 head of cattle grazed the project site. This translates to a carrying capacity of 0.11 Animal Unit per acre. The property owner indicated that up to 80 head of cattle could graze the site, which translates to a carrying capacity of 0.23 Animal Unit per acre. Both of these carrying capacity values are below the one animal unit per acre threshold. Per criteria (d), the land is not planted with fruit or nut-bearing trees or any crops. Finally, per criteria (e), the grasses grown on-site are baled to feed the cattle grazing the property; they are not sold commercially. In summary, the proposed project would represent the planned, orderly, and efficient patterns of development because it would not convert Prime agricultural land to urban use.

Factor	Consistency Determination
dollars ($400) per acre for three of the previous five calendar years.	
(e) The effect of the proposal on maintaining the physical and economic integrity of agricultural lands, as defined by Section 56016.	**Consistent:** As previously discussed, the proposed project would not convert Prime agricultural land to urban use. Furthermore, surrounding properties would not be classified as Prime agricultural land because they have the same attributes as the project site.
(f) The definiteness and certainty of the boundaries of the territory, the nonconformance of proposed boundaries with lines of assessment or ownership, the creation of islands or corridors of unincorporated territory, and other similar matters affecting the proposed boundaries.	**Consistent:** The project site is contiguous to the city limits on the west and north sides. The proposed annexation would bring a large, contiguous area between Walters Road, Petersen Road, and SR-12 into the city limits.
(g) Consistency with city or county general and specific plans.	**Consistent:** Although the Solano County General Plan currently applies to the project site, if the site is annexed into the City, as is proposed here, then the Suisan City General Plan would apply. As discussed in Impact LU-1, the proposed project would be consistent with all applicable provisions of the Suisun City General Plan. In some instances, consistency could only be achieved if the City Council adopts recommended mitigation measures, which it would do along with any project approval and EIR certification.
(h) The Sphere of Influence of any local agency which may be applicable to the proposal being reviewed.	**Consistent:** The project site is within Suisun City SOI; refer to Exhibit 3.9-1.
(i) The comments of any affected local agency or other public agency.	**Consistent:** Both the City of Suisun City and Solano LAFCo will consider the comments of other public agencies that may have comments on the proposed annexation.
(j) The ability of the newly formed or receiving entity to provide the services which are the subject of the application to the area, including the sufficiency of revenues for those services following the proposed boundary change.	**Consistent:** A fiscal analysis is required to be completed prior to action by LAFCo regarding the proposed annexation to confirm the ability to provide services. A fiscal analysis is included in Appendix J.
(k) Timely availability of water supplies adequate for projected needs as specified in Section 65352.5.	**Consistent:** A Water Supply Assessment was prepared as part of this Draft EIR that identified a strategy by which the Suisun-Solano Water Authority could obtain sufficient water supplies to serve the proposed project. The strategy requires a water exchange with Solano Irrigation District. Refer to Section 3.10, Public Services and Utilities for further discussion.
(l) The extent to which the proposal will affect a city or cities and the county in achieving their respective fair shares of the regional housing needs as determined by the appropriate council of governments consistent with Article 10.6	**Not Applicable:** The proposed project would develop nonresidential uses and, therefore, is not subject to affordable housing requirements. The current site has not previously been identified for housing, so its use for nonresidential purposes would not reduce the

Factor	Consistency Determination
(commencing with Section 65580) of Chapter 3 of Division 1 of Title 7.	existing inventory of land planned and zoned for residential uses. Furthermore, residential uses would be in conflict with the provisions of the Travis Air Force Base Land Use Compatibility Plan (LUCP).
(m) Any information or comments from the landowner or owners, voters, or residents of the affected territory.	**Consistent:** The entire project site is controlled by a single entity and does not contain any dwelling units.
(n) Any information relating to existing land use designations.	**Consistent:** The project site is designated "Agriculture" by the Solano County General Plan and zoned "A-160 (Exclusive Agriculture 160 Acres)" by the Solano County Zoning Ordinance.
(o) The extent to which the proposal will promote environmental justice. As used in this subdivision, "environmental justice" means the fair treatment of people of all races, cultures, and incomes with respect to the location of public facilities and the provision of public services.	**Consistent:** The proposed project would promote new capital investment, create new employment opportunities, and expand the tax base within Suisun City. To the extent that the proposed project's direct economic and social benefits may result in indirect benefits to local public facilities and public services, it would further this policy.
Source: FirstCarbon Solutions (FCS). 2021.	

More specifically, the Solano County LAFCo is responsible for coordinating proposed and approved changes in local government boundaries. The Solano County LAFCo has several standards and policies that it consults when considering whether to coordinate a change. It has also adopted several conditions in connection with its approval of Resolution 17-06, by which LAFCo approved an updated SOI for the City. Table 3.9-7 lists the applicable standards, policies, and conditions and determines project consistency with each one. As indicated in the table, the proposed annexation would be consistent with all applicable standards, policies, and conditions. Impacts would be less than significant.

Table 3.9-7: Solano County LAFCo Policy and Conditions Consistency Analysis

Standard/Policy	Consistency Determination
Standard Three: The proposal's consistency with the City's general plan and zoning ordinance.	**Consistent:** The proposed annexation would bring the project site into the city limits, after which it would be consistent with the City's general plan and zoning ordinance.
Standard Seven: The proposal's boundary. The Commission's policy requires cities to annex entire street sections whenever possible and favors annexing entire parcels. Note that the annexation area identified in the City's NOP is slightly less than the acreage of the entire parcel. The proposal area should be the entire parcel and adjacent streets.	**Consistent:** The proposed project consists of an entire parcel and no street sections.

Standard/Policy	Consistency Determination
Standard Eight: The likelihood of significant growth and effect on other incorporated and unincorporated territory. As noted in the policy, Standard Eight is designed to discourage urban sprawl and encourage orderly growth. It also requires the applicant to identify all lands currently within the City's jurisdiction intended for or committed to similar land uses and how the proposal relates to them. This Standard also requires the applicant to submit a market study that: defines the market area for the project, describes anticipated demand over the next 10 years within the market area, identifies the supply of land which can be used within the market area, and shows the consistency of the proposal with the City's growth strategy and infill goals.	**Consistent:** The project site is adjacent to existing developed areas within the city limits (e.g., Walmart, Bonfare Market, and the service station). The project site is within the Suisun City Sphere of Influence (SOI) and can be served with wet and dry utilities that exist within Walters Road and Petersen Road. Thus, the development of the project site would represent planned and orderly growth and efficient patterns of urban development. A market study for the project area and an economic impact analysis for the proposed project were prepared and are included here as Appendix J. The market study defines the market area as Solano and Napa Counties industrial market. The market study anticipates an ongoing low vacancy rate for industrial space with a consistent rise in industrial projects and consistent demand for space. Several industrial projects within four cities located within these two market area counties are either in the planning process or recently entitled (approximately 16 million square feet), or currently under construction (approximately 3.6 million square feet), with near full occupancy expected. The proposed project's economic impact analysis shows that the Fairfield-Suisun submarket's share of overall industrial inventory in Solano County has increased over the last 10 years and has historically hosted roughly half of Countywide industrial square footage, with a projected growth over the next 20 years consisting of approximately 38 percent of the County's industrial square footage. The economic impact analysis also demonstrates that the proposed project, once annexed into the City, will generate $1.8 million annually for the City (in 2020 dollars), at buildout, eventually increasing to $2.0 million (in 2022 dollars). The proposed project also would generate one-time development and impact fees of approximately $12.4 million for the City and create 910 jobs throughout its operational period. For more details, refer to Appendix J. For a discussion on the proposed project's consistency with the City's growth strategies and goals, refer to Table 3.9-2, General Plan Goal LU-4 and associated objectives and policies, as well as Goal OSC-9. For a discussion on the proposed project's consistency with City infill goals, refer to Table 3.9-6, criteria (d), above.

Standard/Policy	Consistency Determination
	Lastly, as is discussed in Section 5, Alternatives to the proposed project, there are no other suitable locations (including infill sites) for the proposed project within the Suisun City SOI.
Standard Nine: Protection of prime agricultural land. The EIR should identify all prime agricultural lands within the project site as defined in Government Code Section 56064 and address the impacts of the project on those lands, see discussion above, comment number 8.	**Consistent:** The project site is not mapped as Important Farmland (see Appendix A, Notice of Preparation, Section 1.1-5) or designated as prime agricultural land pursuant to criteria in Government Code Section 56064 (see Table 3.9-6, criteria (d), above). Moreover, although the grazing land located east and south of the project site is in the City's long-term SOI, that land would be expected to remain in agricultural uses (e.g., dry land hay production) for the foreseeable future, as there are no known development proposals for such lands. Agricultural designations and uses on and around the project site are discussed further in Sections 1.2.2, 2.1.2, 2.1.4, and 3.9.2, and Appendix A, of this EIR.
Standard Eleven: The effect of the proposed action on: adjacent areas, mutual social and economic interests, and local governmental structure. The EIR should discuss the project's effect on adjacent areas, both within and outside of the City's boundary, and discuss the overall beneficial aspects compared to the potential negative impacts Per the SOI Conditions of Approval, the Commission is mostly concerned with the potential impacts to Travis AFB.	**Consistent:** As discussed above, the project is consistent with the Travis Air Force Base LUCP (see also Appendix H) and includes improvements to Peterson Road for the benefit of Travis Air Force Base. As well, the project site is adjacent to existing large, developed areas within the city limits (e.g., Walmart, Bonfare Market, and the service station) and thus would further the planned and orderly growth in the immediate area and efficient patterns of urban development. Potential impacts associated with air emissions and traffic that may affect adjacent areas are discussed in EIR Sections 3.2 and 3.12, accordingly. Some of these impacts are not mitigable to a less than significant level but can be balanced against the many benefits of the project, some of which are listed in the EIR's Project Objectives (Section 2.3) and include: improvements to Peterson Road for the benefit of Travis Air Force Base; general promotion of economic growth through new capital investment; expansion of the tax base and increase in tax revenue for the City (once the site is annexed); new local employment opportunities; increase in development fees paid to the City that can better help to fund important City services; and improvement of the City's jobs-to-housing ratio by locating the proposed project near residential areas.
Plan for Providing Services (Plan): The Commission requires applicants to submit a thorough Plan as part of their reorganization application per GC Section 56653. The Plan should include the following information: a description of the services to be extended by the City to the affected territory such as	**Consistent:** The City will submit the required plan containing the required information to the Solano County LAFCo Commission along with its application for annexation.

Standard/Policy	Consistency Determination
sewer, water, police protection, fire protection, adequate roadways, and other municipal services; the anticipated demand for those services; how the services will be financed; and an indication of when the City can extend services to the territory.	
Condition No. Two: The City shall consider establishing a buffer zone adjacent to and parallel to the flight path of Runway 3L prior to reorganization application submission.	**Consistent:** The City will consider establishing this buffer zone. Notably, the project site is approximately 1.2 miles from the end of runway 3L (see Appendix H).
Condition No. Three: The City's proposed reorganization applications and pre-zoning shall demonstrate consistency and compatibility with the Travis Air Force Land Use Compatibility Plan/Airport Land Use Commission.	**Consistent:** The proposed project and annexation would be consistent and compatible with the Travis Air Force Land Use Compatibility Plan/Airport Land Use Commission. See above discussion for Impact LU-3.
Condition No. Five: The City shall adopt a General Plan Amendment establishing a Travis Reserve Area designation, similar to Solano County's 2008 General Plan designation, prior to any consideration of reorganizations by LAFCo.	**Consistent:** If required by the Solano County LAFCo, the City shall adopt this General Plan Amendment. Notably, Solano County created and adopted a Travis Reserve Overlay in 2023 that serves to protect Travis Air Force Base from incompatible adjacent land uses, which will remain in effect regardless of any site annexation into the City.
Condition No. Six: The City shall demonstrate reliable water capacity and service capability to any annexation areas prior to any consideration of proposed reorganizations by LAFCo.	**Consistent:** Refer to Table 3.9-6, criteria (k), above.
Condition No. Seven: Any roadway segments adjoining and contiguous with the SOI line are included within the sphere amendment to allow subsequent annexation of the roads into the City.	**Not Applicable:** An SOI amendment is not being proposed as part of the project.
Condition No. Eight: The open space area identified in SOI Area B (355 Suisun/Logistics Center), Zone B-1 by the Solano County Airport Land Use Commission shall be designated within Suisun City's Long-Term Sphere of Influence.	**Consistent:** This existing open space preservation area on the project site will be properly designated as such within Suisun City's Long-Term SOI.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

3.10 - Noise

3.10.1 - Introduction

This section describes the existing noise setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on noise modeling performed by FirstCarbon Solutions (FCS). The noise modeling input assumptions and output data are included in this Draft Environmental Impact Report (Draft EIR) as Appendix K.

3.10.2 - Environmental Setting

Characteristics of Noise

Noise is generally defined as unwanted or objectionable sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and in the extreme, hearing impairment. Noise effects can be caused by pitch or loudness. *Pitch* is the number of complete vibrations or cycles per second of a wave that result in the range of tone from high to low; higher-pitched sounds are louder to humans than lower-pitched sounds. *Loudness* is the intensity or amplitude of sound.

Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit, which expresses the ratio of the sound pressure level being measured to a standard reference level. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Only audible changes in existing ambient or background noise levels are considered potentially significant.

The human ear is not equally sensitive to all frequencies within the audible sound spectrum, so sound pressure level measurements can be weighted to better represent frequency-based sensitivity of average healthy human hearing. One such specific “filtering” of sound is called “A-weighting.” A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies that are audible to the human ear. Because decibels are logarithmic units, they cannot be added or subtracted by ordinary arithmetic means. For example, if one noise source produces a noise level of 70 dB, the addition of another noise source with the same noise level would not produce 140 dB; rather, they would combine to produce a noise level of 73 dB.

Noise Descriptors

There are many ways to rate noise for various intervals, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and Community Noise

Equivalent Level (CNEL) or the day-night average level (L_{dn}) based on dBA. CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within one dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise.

Noise Propagation

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source, as well as ground absorption, atmospheric conditions (wind, temperature gradients, and humidity) and refraction, and shielding by natural and manmade features. Sound from point sources, such as an air conditioning condenser, a piece of construction equipment, or an idling truck, radiates uniformly outward as it travels away from the source in a spherical pattern.

The attenuation or sound drop-off rate is dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in noise models: soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA per each doubling of the distance (dBA/DD) is typically observed over soft ground with landscaping, as compared with a 6 dBA/DD drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. For line sources, such as traffic noise on a roadway, a 4.5 dBA/DD is typically observed for soft-site conditions compared to the 3 dBA/DD drop-off rate for hard-site conditions. Table 3.10-1 briefly defines these measurement descriptors and other sound terminology used in this section.

Table 3.10-1: Sound Terminology

Term	Definition
Sound	A vibratory disturbance created by a vibrating object which, when transmitted by pressure waves through a medium such as air, can be detected by a receiving mechanism such as the human ear or a microphone.
Noise	Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

Term	Definition
Ambient Noise	The composite of noise from all sources near and far in a given environment.
Decibel (dB)	A unitless measure of sound on a logarithmic scale, which represents the squared ratio of sound pressure amplitude to a reference sound pressure. The reference pressure is 20 micropascals, representing the threshold of human hearing (0 dB).
A-Weighted Decibel (dBA)	An overall frequency-weighted sound level that approximates the frequency response of the human ear.
Equivalent Noise Level (L_{eq})	The average sound energy occurring over a specified time period. In effect, L_{eq} is the steady-state sound level that in a stated period would contain the same acoustical energy as the time-varying sound that actually occurs during the same period.
Maximum and Minimum Noise Levels (L_{max} and L_{min})	The maximum or minimum instantaneous sound level measured during a measurement period.
Day-Night Level (DNL or L_{dn})	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring between 10:00 p.m. and 7:00 a.m. (nighttime).
Community Noise Equivalent Level (CNEL)	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the A-weighted sound levels occurring between 7:00 p.m. and 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring between 10:00 p.m. and 7:00 a.m.
Source: Data compiled by FirstCarbon Solutions (FCS) 2019.	

Traffic Noise

The level of traffic noise depends on the three primary factors: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and greater number of trucks. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires. Because of the logarithmic nature of noise levels, a doubling of the traffic volume (assuming that the speed and truck mix do not change) results in a noise level increase of 3 dBA. Based on the Federal Highway Administration (FHWA) community noise assessment criteria, this change is "barely perceptible." For reference, a doubling of perceived noise levels would require an increase of approximately 10 dBA. The truck mix on a given roadway also has an effect on community noise levels. As the number of heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise levels increase.

Stationary Noise

A stationary noise producer is any entity in a fixed location that emits noise. Examples of stationary noise sources include machinery, engines, energy production, and other mechanical or powered equipment and activities such as loading and unloading or public assembly that may occur at commercial, industrial, manufacturing, or institutional facilities. Furthermore, while noise generated by the use of motor vehicles over public roads is preempted from local regulation, the use of these vehicles is considered a stationary noise source when operated on private property such as at a construction site, a truck terminal, or warehousing facility. The emitted noise from the producer can be mitigated to acceptable levels either at the source or on the adjacent property through the use of proper planning, setbacks, block walls, acoustic-rated windows, dense landscaping, or by changing the location of the noise producer.

The effects of stationary noise depend on factors such as characteristics of the equipment and operations, distance and pathway between the generator and receptor, and weather. Stationary noise sources may be regulated at the point of manufacture (e.g., equipment or engines), with limitations on the hours of operation, or with provision of intervening structures, barriers or topography.

Construction activities are a common source of stationary noise. Construction-period noise levels are higher than background ambient noise levels but eventually cease once construction is complete. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on each construction site and, therefore, would change the noise levels as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 3.10-2 shows typical noise levels of construction equipment as measured at a distance of 50 feet from the operating equipment.

Table 3.10-2: Typical Construction Equipment Maximum Noise Levels, L_{max}

Type of Equipment	Impact Device? (Yes/No)	Specification Maximum Sound Levels for Analysis (dBA at 50 feet)
Impact Pile Driver	Yes	95
Auger Drill Rig	No	85
Vibratory Pile Driver	No	95
Jackhammers	Yes	85
Pneumatic Tools	No	85
Pumps	No	77
Scrapers	No	85
Cranes	No	85
Portable Generators	No	82
Rollers	No	85
Bulldozers	No	85
Tractors	No	84

Type of Equipment	Impact Device? (Yes/No)	Specification Maximum Sound Levels for Analysis (dBA at 50 feet)
Front-End Loaders	No	80
Backhoe	No	80
Excavators	No	85
Graders	No	85
Air Compressors	No	80
Dump Truck	No	84
Concrete Mixer Truck	No	85
Pickup Truck	No	55

Notes:
dBA = A-weighted decibel
Source: Federal Highway Administration (FHWA) 2006. Highway Construction Noise Handbook, August.

Noise from Multiple Sources

Because sound pressure levels in decibels are based on a logarithmic scale, they cannot be added or subtracted in the usual arithmetical way. Therefore, sound pressure levels in decibels are logarithmically added on an energy summation basis. In other words, adding a new noise source to an existing noise source, both producing noise at the same level, will not double the noise level. Instead, if the difference between two noise sources is 10 dBA or more, the louder noise source will dominate, and the resultant noise level will be equal to the noise level of the louder source. In general, if the difference between two noise sources is 0–1 dBA, the resultant noise level will be 3 dBA higher than the louder noise source, or both sources if they are equal. If the difference between two noise sources is 2–3 dBA, the resultant noise level will be 2 dBA above the louder noise source. If the difference between two noise sources is 4–10 dBA, the resultant noise level will be 1 dBA higher than the louder noise source.

Characteristics of Vibration

Groundborne vibration consists of rapidly fluctuating motion through a solid medium, specifically the ground, which has an average motion of zero and in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. The effects of groundborne vibration typically only causes a nuisance to people, but in extreme cases, excessive groundborne vibration has the potential to cause structural damage to buildings. Groundborne noise is an effect of groundborne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room, and may also consist of the rattling of windows or dishes on shelves.

Several different methods are used to quantify vibration amplitude such as the maximum instantaneous peak in the vibrations velocity, which is known as the peak particle velocity (PPV) or the root mean square (rms) amplitude of the vibration velocity. Because of the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels—denoted as LV—and is

based on the reference quantity of 1 microinch per second. To distinguish vibration levels from noise levels, the unit is written as "VdB."

Although groundborne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. When assessing annoyance from groundborne vibration, vibration is typically expressed as root mean square (rms) velocity in units of decibels of 1 microinch per second, with the unit written in VdB. Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. Human perception to vibration starts at levels as low as 67 VdB. Annoyance due to vibration in residential settings starts at approximately 70 VdB.

Off-site sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible groundborne noise or vibration. Construction activities, such as blasting, pile driving and operating heavy earthmoving equipment, are common sources of groundborne vibration. Construction vibration impacts on building structures are generally assessed in terms of PPV. Typical vibration source levels from construction equipment are shown in Table 3.10-3.[1]

Table 3.10-3: Vibration Levels of Construction Equipment

Construction Equipment	PPV at 25 Feet (inches/second)	rms Velocity in Decibels (VdB) at 25 Feet
Water Trucks	0.001	57
Scraper	0.002	58
Bulldozer—small	0.003	58
Jackhammer	0.035	79
Concrete Mixer	0.046	81
Concrete Pump	0.046	81
Paver	0.046	81
Pickup Truck	0.046	81
Auger Drill Rig	0.051	82
Backhoe	0.051	82
Crane (Mobile)	0.051	82
Excavator	0.051	82
Grader	0.051	82
Loader	0.051	82
Loaded Trucks	0.076	86
Bulldozer—large	0.089	87
Caisson drilling	0.089	87
Vibratory Roller (small)	0.101	88

[1] Federal Highway Administration (FHWA). 2006. Highway Construction Noise Handbook. August.

Construction Equipment	PPV at 25 Feet (inches/second)	rms Velocity in Decibels (VdB) at 25 Feet
Compactor	0.138	90
Clam shovel drop	0.202	94
Vibratory Roller (large)	0.210	94
Pile Driver (impact-typical)	0.644	104
Pile Driver (impact-upper range)	1.518	112

Notes:
PPV = peak particle velocity
rms = root mean square
VdB = velocity in decibels
Source: Compilation of scientific and academic literature, generated by the Federal Transit Administration (FTA) and Federal Highway Administration (FHWA).

The propagation of groundborne vibration is not as simple to model as airborne noise. This is because noise in the air travels through a relatively uniform medium, while groundborne vibrations travel through the earth, which may contain significant geological differences. Factors that influence groundborne vibration include:

- **Vibration source:** Type of activity or equipment, such as impact or mobile, and depth of vibration source;
- **Vibration path:** Soil type, rock layers, soil layering, depth to water table, and frost depth; and
- **Vibration receiver:** Foundation type, building construction, and acoustical absorption.

Among these factors that influence groundborne vibration, there are significant differences in the vibration characteristics when the source is underground compared to at the ground surface. In addition, soil conditions are known to have a strong influence on the levels of groundborne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock. Vibration propagation is more efficient in stiff clay soils than in loose sandy soils, and shallow rock seems to concentrate the vibration energy close to the surface and can result in groundborne vibration problems at large distance from the source. Factors such as layering of the soil and depth to the water table can have significant effects on the propagation of groundborne vibration. Soft, loose, sandy soils tend to attenuate more vibration energy than hard, rocky materials. Vibration propagation through groundwater is more efficient than through sandy soils. There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse, or side-to-side and perpendicular to the direction of propagation.

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil type, but it has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests. The vibration level (calculated below as "PPV") at a distance from a point source can generally be calculated using the vibration reference equation:

$$PPV = PPV_{ref} * (25/D)^n \text{ (in/sec)}$$

Where:

PPV_{ref} = reference measurement at 25 feet from vibration source
D = distance from equipment to the receptor
n = vibration attenuation rate through ground

According to Chapter 12 of the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual, an "n" value of 1.5 is recommended to calculate vibration propagation through typical soil conditions.[2]

Existing Noise Levels

Traffic noise along State Route (SR) 12, Petersen Road, and Walters Road are the dominant transportation noise sources on the project site, with Travis Air Force Base aviation noise dominating during those individual overflight events. The existing ambient noise environment is described as follows.

Existing Traffic Noise

The most significant noise source in the project vicinity is traffic on local roadways, including Walters Road and SR-12. Existing traffic noise levels along roadway segments in the project vicinity were calculated using the FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108). This model requires parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The Average Daily Traffic (ADT) volumes for the modeled roadway segments were obtained from the traffic analysis prepared by W-Trans. (These volumes are available in Appendix I). The traffic volumes correspond to the existing conditions traffic scenario as described in the transportation analysis. The model inputs and outputs—including the 60 dBA, 65 dBA, and 70 dBA L_{dn} noise contour distances for existing traffic conditions—are provided in Appendix K of this document. A summary of the modeling results is shown in Table 3.10-4.

The modeling results show that traffic noise levels on Walters Road adjacent to the project site range up to 64 dBA L_{dn} as measured at 50 feet from the centerline of the outermost travel lane; and on SR-12 nearest the site range up to 66.4 dBA L_{dn} as measured at 50 feet from the centerline of the outermost travel lane.

[2] Federal Transit Administration (FTA). 2006. Transit Noise and Vibration Impact Assessment. May.

Table 3.10-4: Existing Traffic Noise Levels

Roadway	From	To	Average Daily Traffic	Centerline to 70 L_{dn} (feet)	Centerline to 65 L_{dn} (feet)	Centerline to 60 L_{dn} (feet)	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane
Walters Road	Bella Vista Drive	Pintail Drive	1,600	< 50	65	132	64.0
Walters Road	Pintail Drive	Montebello Drive	1,500	< 50	62	126	63.7
Walters Road	Montebello Drive	Petersen Road	1,600	< 50	65	132	64.0
SR-12	Sunset Avenue	Emperor Drive	2,900	< 50	104	219	67.4
SR-12	Emperor Drive	Walters Road	2,300	< 50	90	188	66.4

Notes:
L_{dn} = day/night average sound level
dBA = A-weighted decibel
Source: FirstCarbon Solutions (FCS) 2021.

Existing Aircraft Noise

The project site is located southwest of the Travis Air Force Base. The Solano County Airport Land Use Commission (ALUC) adopted the Travis Air Force Airport Land Use Compatibility Plan on October 8, 2015. The plan shows the existing and projected future year noise contours for the air base. Exhibit 3.10-1 shows the Travis Air Force Base noise contours for 2015. Based on the noise contour, the entire proposed development area of the project site is exposed to a CNEL of less 65 dBA or less.

Noise-Sensitive Land Uses

Noise-sensitive land uses generally consist of those uses where exposure to noise would result in adverse effects, as well as uses for which 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. Other typical noise-sensitive land uses include hospitals, convalescent facilities, hotels, religious institutions, libraries, and other uses where low noise levels are essential.

The closest off-site noise-sensitive land use are single-family residences southwest of the project site, approximately 200 feet from the nearest project boundary.

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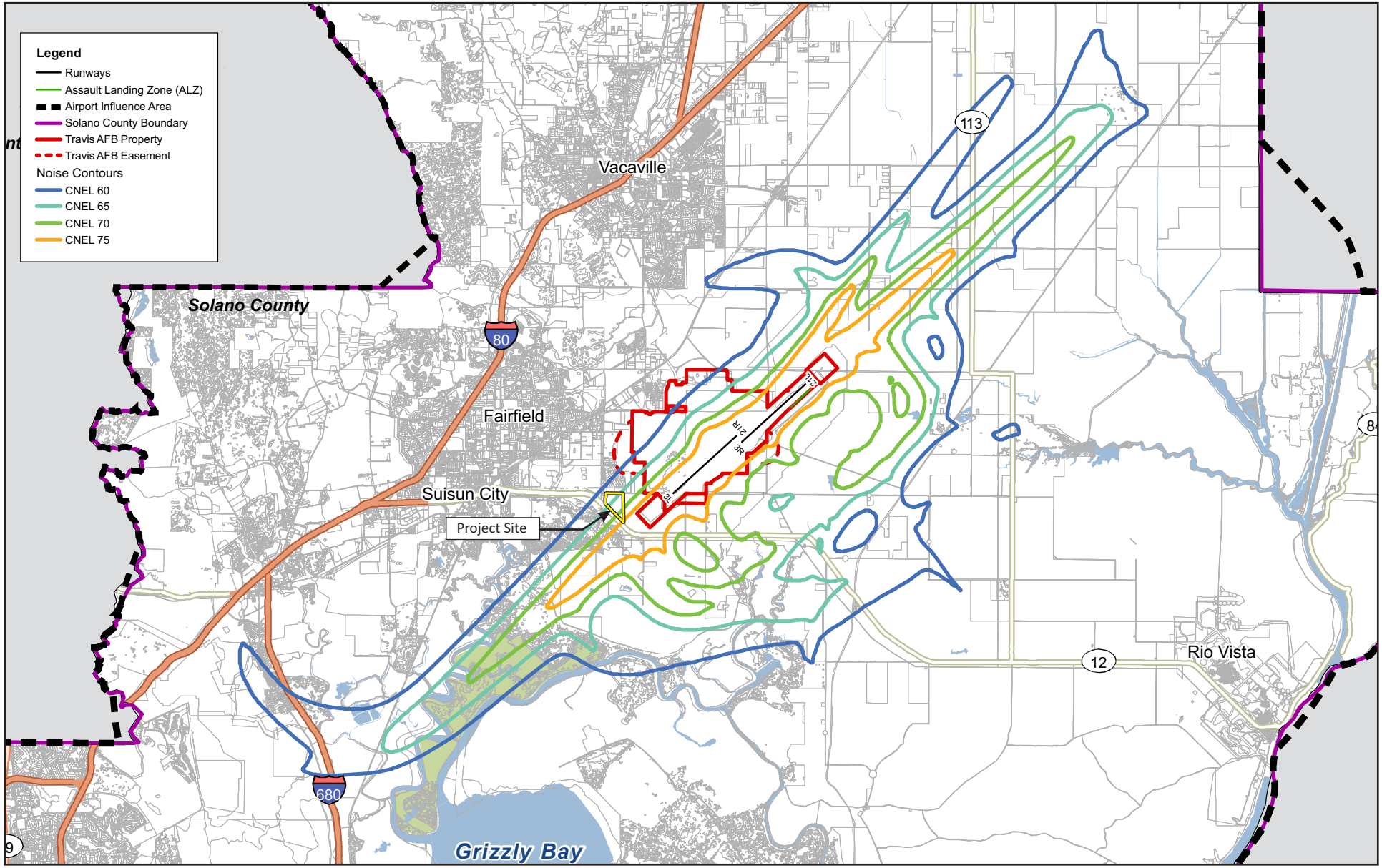

Source: Mead & Hunt, 2015: ESA Airports, 2015; ESRI

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Exhibit 3.10-1
2015 Aviation Noise Contours

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3.10.3 - Regulatory Framework

Federal

Noise Control Act

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce
- Assisting state and local abatement efforts
- Promoting noise education and research

The Federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees.

Among the agencies now regulating noise are the Occupational Safety and Health Administration (OSHA), which limits noise exposure of workers to 90 dB L_{eq} or less for 8 continuous hours or 105 dB L_{eq} or less for 1 continuous hour; the United States Department of Transportation (USDOT), which assumed a significant role in noise control through its various operating agencies; and the Federal Aviation Administration (FAA), which regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the FTA. Transit noise is regulated by the federal Urban Mass Transit Administration, while freeways that are part of the interstate highway system are regulated by the FHWA. Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that "noise-sensitive" uses are either prohibited from being sited adjacent to a highway, or alternatively, that developments are planned and constructed in a manner that minimize potential noise impacts.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by transportation sources, local jurisdictions are limited to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

Federal Transit Administration Standards and Guidelines

FTA has established industry accepted standards for vibration impact criteria and impact assessment. These guidelines are published in its Transit Noise and Vibration Impact Assessment document (FTA 2006). The FTA guidelines include thresholds for construction vibration impacts for various structural categories as shown in Table 3.10-5.

Table 3.10-5: Federal Transit Administration Construction Vibration Impact Criteria

Building Category	PPV (in/sec)	Approximate VdB
I. Reinforced-Concrete, Steel or Timber (no plaster)	0.5	102
II. Engineered Concrete and Masonry (no plaster)	0.3	98
III. Nonengineered Timber and Masonry Buildings	0.2	94
IV. Buildings Extremely Susceptible to Vibration Damage	0.12	90

Building Category	PPV (in/sec)	Approximate VdB
Notes: PPV = peak particle velocity VdB = velocity in decibels Source: Federal Aviation Administration (FAA). 2006. Transit Noise and Vibration Impact Assessment.		

State

California General Plan Guidelines

Established in 1973, the California Department of Health Services Office of Noise Control was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the "Land Use Compatibility for Community Noise Environments Matrix," which allows the local jurisdiction to delineate compatibility of sensitive uses with various incremental levels of noise.[3]

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The Governor' s Office of Planning and Research (OPR) has issued and periodically updated advisory General Plan Guidelines that provide suggestions regarding how agencies may want to comply with this statutory requirement. The latest version of the General Plan Guidelines was issued in 2020. It contains an Appendix (D), with Noise Element Guidelines which were developed in 1976 by the former Department of Health Services Office of Noise Control pursuant to former Health and Safety Code Section 46050.1. These Guidelines represent "an additional resource that local governments may consult in addition to this chapter to develop noise elements" (OPR, General Plan Guidelines, p. 130, 2020). The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise/land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable. The proposed project is also subject to review under the State of California Environmental Quality Act (CEQA). Appendix G of the CEQA Guidelines includes noise-related questions from which lead agencies frequently derive impact thresholds for potential noise and vibration impacts. The City of Suisun City has developed its own CEQA thresholds, which are listed in the Thresholds of Significance section below.

California Building Standards Code

The State of California has established noise insulation standards for new hotels, motels, apartment houses, and dwellings (other than single-family detached housing). These requirements are provided in the 2016 California Building Standards Code (CBC) (California Code of Regulations [CCR] Title 24).[4] As provided in the CBC, the noise insulation standards set forth an interior standard of 45 dBA CNEL as measured from within the structure's interior. When such structures are located within a 65-dBA CNEL (or greater) exterior noise contour associated with a traffic noise along a roadway, an acoustical analysis is required to ensure that interior levels do not exceed the 45 dBA CNEL threshold. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

[3] California Department of Health Services Office of Noise Control, "Land Use Compatibility for Community Noise Environments Matrix," 1976.
[4] California Building Standards Commission. 2017. California Building Standards Code (CCR Title 24), January 1.

Local

City of Suisun City

General Plan

The City of Suisun City establishes noise policies to control noise associated with new development in Chapter 9 of the City's General Plan.[5] The policies that are applicable to this warehouse development project are listed below.

Policy PHS-1.1 Large-scale commercial land uses that could require 50 or more large truck trips per day shall route truck traffic to SR 12 or Arterials and avoid Collectors and Local Streets.

Policy PHS-1.2 New development shall be designed to disperse vehicular traffic onto a network of fully connected smaller roadways.

Policy PHS-1.3 Industrial and other noise-generating land uses should be located away from noise-sensitive land uses or should use noise attenuation methods, such as enclosing substantial noise sources within buildings or structures, using muffling devices, or incorporating other technologies designed to reduce noise levels.

Policy PHS-1.4 The City will use all feasible means to reduce the exposure of sensitive land uses to excessive noise levels and mitigate where noise levels exceed those specified in Table 3.10-6.

Table 3.10-6: Maximum Allowable Noise Exposure from Transportation Noise Sources at Noise-Sensitive Land Uses

Land Use	Outdoor Activity Area (dBA L_{dn})	Interior Spaces	
		dBA L_{dn}	dBA L_{eq}
Residential	60	45	–
Residential (in Downtown Waterfront Specific Plan Area or other Mixed-Use Designations)	70	45	–
Transient Lodging	60	45	–
Hospitals, Nursing Homes	60	45	–
Theaters, Auditoriums, Music Halls	–	–	35
Churches, Meeting Halls	60	–	40
Office Buildings	–	–	45
School, Libraries, Museums	60	–	45
Playgrounds, Neighborhoods	70	–	–
Notes: dBA = A-weighted decibel			

[5] City of Suisun City, 1992. General Plan. Public Health and Safety Element.

Land Use	Outdoor Activity Area (dBA L_{dn})	Interior Spaces	
		dBA L_{dn}	dBA L_{eq}

L_{dn} = day/night average sound level
L_{eq} = equivalent sound level
Noise-sensitive land uses include schools, hospitals, rest homes, long-term care, mental care facilities, residences, and other similar land uses. Outdoor activity areas are considered to be the portion of a noise-sensitive property where outdoor activities would normally be expected (i.e., patios of residences and outdoor instructional areas of schools). Outdoor activity areas for the purposes of this element do not include gathering spaces alongside transportation corridors or associated public right-of-way. Where development projects or roadway improvement projects could potentially create noise impacts, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design. Such analysis shall be the financial responsibility of the applicant and be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics. Mitigation strategies shall include site planning and design over other types of mitigation.
Source: City of Suisun City. 1992. General Plan. Public Health and Safety Element, Table 9-1.

Policy PHS-1.6 Lands within the 65 CNEL noise contour of Travis AFB shall be maintained in agricultural, open space, commercial, industrial, or other uses permitted by Travis AFB Land Use Compatibility Plan (LUCP) and consistent with the recommendations of the Travis AFB Protection Element, including noise contours associated with future air base operations, as appropriate.

Policy PHS-1.8 Sound walls are prohibited as a method for reducing noise exposure that could be addressed through other means, such as, site design, setbacks, earthen berms, or a combination of these techniques.

Policy PHS-1.9 New developments shall implement feasible noise mitigation to reduce construction noise and vibration impacts. Projects that incorporate feasible mitigation will not be considered by the City to have significant impacts for the purposes of California Environmental Quality Act review.

Program PHS 1.2 Review and Conditioning of Noise-Generating New Uses. New developments that generate noise will be reviewed and feasible mitigation will be required to reduce effects on existing noise-sensitive land uses. Methods may include, but are not limited to operating at less noise-sensitive parts of the day, better distribution of vehicle traffic to avoid large volumes on any one street, traffic calming, buffering, sound insulation, and other methods deemed effective by the City. The maximum noise level resulting from new sources and ambient noise shall not exceed the standards in Table 3.10-7, as measured at outdoor activity areas of any affected noise-sensitive land use except:

- If the ambient noise level exceeds the standard in Table 3. 10-7, the standard becomes the ambient level plus 5 dBA.
- Reduce the applicable standards in Table 3. 10-7 by 5 decibels if they exceed the ambient level by 10 or more decibels.
- The City shall exempt all school related events and City sponsored events from noise standards outlined in this chapter.

Policy PHS-2.2 New developments that would generate substantial long-term vibration shall provide analysis and mitigation, as feasible, to achieve velocity levels, as experienced at habitable structures of vibration-sensitive land uses, of less than 78 vibration decibels.

Table 3.10-7: Noise Level Performance Standards for Non-Transportation Noise Sources

Cumulative Duration of a Noise Event[1] (Minutes)	Maximum Exterior Noise Level Standards[2]	
	Daytime[3,5]	Nighttime[4,5]
30–60	50	45
15–30	55	50
5–15	60	55
1–5	65	60
0–1	65	65

Notes:
1 Cumulative duration refers to time within any on-our period.
2 Noise level standards measured in dBA.
3 Daytime = Hours between 7:00 a.m. and 10:00 p.m.
4 Nighttime = Hours between 10:00 p.m. and 7:00 a.m.
5 Each of the noise level standard specified may be reduced by 5 dBA for tonal noise (i.e., a signal which has a particular and unusual pitch) or for noises consisting primarily of speech or for recurring impulsive noises (i.e., sounds of short duration, usually less than one second, with an abrupt onset and rapid decay such as the discharge of firearms).
Source: City of Suisun City. 1992. General Plan. Public Health and Safety Element, Table 9-3.

City Code

Suisun City also contains noise performance standards in the Suisun City Code.[6] Code Chapter 15.04.075 establishes limits on hours of construction activities. Anyone engaging in construction or demolition work is responsible to restrict hours of work activity on-site. Construction equipment shall not be operated within 600 feet of an occupied residence except during the hours of 7:00 a.m. and 8:00 p.m., Monday through Friday, and 8:00 a.m. and 8:00 p.m. on Saturday and Sunday. For the purposes of construction machinery for earthwork, trenching, concrete, or paving, the hours of work activity on the site shall be restricted to between the hours of 7:00 a.m. and 6:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 5:00 p.m. on Saturday. Work is prohibited on Sundays and holidays, with the exception of the operation of water trucks for the purpose of dust control between the hours of 9:00 a.m. and 6:00 p.m. on Sundays and holidays. These provisions are typical of City and County noise ordinances and reflect the recognition that construction-related noise is temporary in character, is generally acceptable when limited to daylight hours, and is part of what residents of urban areas expect as part of a typical urban noise environment (along with sirens, etc.).

6 Suisun City, 2020. Suisun City Code – 1983. November 17. Website: https://library.municode.com/ca/suisun_city/codes/code_of_ordinances?nodeId=SUISUN_CODE1983. Accessed September 10, 2021.

In addition to these policies, Suisun City has not adopted any noise regulations or standards as part of their Municipal Code.

3.10.4 - Methodology

Construction Noise Analysis Methodology

A worst-case scenario was analyzed assuming each piece of modeled equipment would operate simultaneously at the nearest reasonable locations to the closest noise-sensitive receptor for the loudest phase of construction. Noise emission levels recommended by FHWA's Highway Construction Noise Handbook were used to ascertain the noise generated by specific types of construction equipment. The construction noise impact was evaluated in terms of maximum levels (L_{max}). Analysis requirements were based on the sensitivity of nearby receptors and the Noise Ordinance specifications.

Traffic Noise Modeling Methodology

The FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to evaluate traffic-related noise conditions in the vicinity of the project site. Traffic data used in the model was obtained from the traffic impact analysis prepared for this Draft EIR by W-Trans (Refer to Section 3.12 Transportation). The resultant noise levels were weighted and summed over a 24-hour period in order to determine the L_{dn} values. The FHWA-RD-77-108 Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level. Adjustments are then made to the Reference Energy Mean Emission Level to account for the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway); the total ADT; and the percentage of ADT that flows during the day, evening, and night; the travel speed; the vehicle mix on the roadway; a percentage of the volume of automobiles, medium trucks, and heavy trucks; the roadway grade; the angle of view of the observer exposed to the roadway; and the site conditions ("hard" or "soft") as they relate to the absorption of the ground, pavement, or landscaping.

The level of traffic noise depends on the three primary factors: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and greater number of trucks. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires. Because of the logarithmic nature of traffic noise levels, a doubling of the traffic volume (assuming that the speed and truck mix do not change) results in a noise level increase of 3 dBA. Based on the FHWA community noise assessment criteria, this change is considered "barely perceptible."

The model analyzed the noise impacts from the nearby roadways onto the project vicinity, which consists of the area that has the potential of being impacted from the on-site noise sources as well as the project-generated traffic on the nearby roadways**.** The roadways were analyzed based on a single-lane-equivalent noise source combining both directions of travel. A single-lane-equivalent noise source is when the vehicular traffic from all lanes is combined into a theoretical single-lane that has a width equal to the distance between the two outside lanes of a roadway, which provides almost identical results to analyzing each lane separately where elevation changes are minimal. The modeling assumes a direct line of sight to the roadway and flat terrain conditions.

Stationary Noise Source Analysis Methodology

The proposed project would generate noise from parking lot activities, new exterior mechanical equipment sources, such as rooftop ventilation systems on proposed industrial uses, and from truck loading and unloading activities. To provide a conservative analysis, the highest end of the range of reference noise levels for these stationary noise sources was used to calculate the reasonable worst-case hourly average noise levels from each noise source. These hourly averages were then assumed to occur for every hour for a 24-hour period to calculate the reasonable worst-case 24-hour average L_{dn} noise levels as measured at the nearest sensitive receptor land use. These individual source noise levels were then combined to calculate the reasonable worst-case combined stationary source 24-hour L_{dn} noise level as measured at the nearest sensitive receptor land use. These noise levels were then compared to the City's applicable noise performance threshold to determine whether these noise sources would result in a substantial increase in excess of this standard.

Vibration Impact Analysis Methodology

The City does not have adopted criteria for construction groundborne vibration impacts. Therefore, the FTA's vibration impact criteria and modeling and analysis methodology utilized to evaluate potential vibration impacts. The FTA has established industry accepted standards for vibration impact criteria and impact assessment. These guidelines are published in its Transit Noise and Vibration Impact Assessment document,[7] and are summarized in Table 3.10-3 in the regulatory discussion above. However, in Policy PHS-2.2 of the General Plan the City has established an operational groundborne vibration performance threshold of 78 VdB as measured at any habitable structure.

3.10.5 - Thresholds of Significance

Appendix G to the CEQA Guidelines is a sample Initial Study Checklist that includes questions for determining whether noise impacts are significant. These questions were developed by planning and environmental professionals at the OPR and the California Natural Resources Agency, based on input from stakeholder groups and experts in various other governmental agencies, nonprofits, and leading environmental consulting firms. As a result, many lead agencies derive their significance criteria from the questions posed in Appendix G. The City has chosen to do so here. Thus, noise impacts resulting from the implementation of the proposed project would be considered significant if the project would cause:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

b) Generation of a substantial permanent increase in ambient noise levels in noise-sensitive locations in the project vicinity;

c) Generation of excessive groundborne vibration or groundborne noise levels; or

d) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the project would expose people residing or working in the project area to excessive noise levels.

[7] Federal Transit Administration (FTA). 2006. Transit Noise and Vibration Impact Assessment. May.

3.10.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Substantial Noise Increase in Excess of Standards

Impact NOI-1:	**The proposed project could generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.**

Impact Analysis

Construction

Construction activities associated with implementation of the project could result in a temporary increase in ambient noise levels in the project vicinity. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and timing and duration of the construction activities. A significant impact would occur if the project exposed people to temporary or periodic noise levels that exceed noise levels permitted under the General Plan or Noise Ordinance. General construction activity is restricted to the hours of 7:00 a.m. and 8:00 p.m., Monday through Friday, and 8:00 a.m. and 8:00 p.m. on Saturday and Sunday. Construction activity for earthwork, trenching, concrete, or paving, the hours of work activity on the site shall be restricted to between the hours of 7:00 a.m. and 6:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 5:00 p.m. on Saturday. Work is prohibited on Sundays and holidays, with the exception of the operation of water trucks for the purpose of dust control between the hours of 9:00 a.m. and 6:00 p.m. on Sundays and holidays. These provisions are typical of City and County noise ordinances and reflect the recognition that construction-related noise is temporary in character, is generally acceptable when limited to daylight hours, and is part of what residents of urban areas expect as part of a typical urban noise environment (along with sirens, etc.).

Construction-related Traffic Noise

Noise impacts from construction activities associated with the project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. One type of short-term noise impact that could occur during project construction would result from the increase in traffic flow on local streets, associated with the transport of workers, equipment, and materials to and from the project site. The transport of workers and construction equipment and materials to the project site would incrementally increase noise levels on access roads leading to the site. Because workers and construction equipment would use existing routes, noise from passing trucks would be similar to existing vehicle-generated noise on these local roadways. Typically, a doubling of the ADT hourly volumes on a roadway segment is required in order to result in an increase of 3 dBA in traffic noise levels; which, as discussed in the characteristics of nose discussion above, is the lowest change that can be perceptible to the human ear in outdoor environments. Based on the air quality modeling assumptions, project-related construction trips would generate up to 335 average daily trips during the phase of construction with the highest trip generation, which would not double the daily traffic

volumes (shown in Table 3.10-4) along any roadway segment in the project vicinity. For this reason, short-term intermittent noise from construction trips would not be expected to result in a perceptible increase in hourly- or daily-average traffic noise levels in the project vicinity. Therefore, short-term construction-related noise impacts associated with the transportation of workers and equipment to the project site would be less than significant.

Construction Equipment Operational Noise

The second type of short-term noise impact is related to noise generated during construction on the project site. Construction is completed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 3.10-2 lists typical construction equipment noise levels, based on a distance of 50 feet between the equipment and a noise receptor. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings. Impact equipment such as pile drivers are not expected to be used during construction of this project.

The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery and compacting equipment, such as bulldozers, draglines, backhoes, front loaders, roller compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

Construction of the project is expected to require the use of scrapers, bulldozers, water trucks, haul trucks, and pickup trucks. Based on the information provided in Table 3.10-2, the maximum noise level generated by each scraper is assumed to be 85 dBA L_{max} at 50 feet from this equipment. Each bulldozer would also generate 85 dBA L_{max} at 50 feet. The maximum noise level generated by graders is approximately 85 dBA L_{max} at 50 feet. A characteristic of sound is that each doubling of sound sources with equal strength increases a sound level by 3 dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, a reasonable worst-case combined noise level during this phase of construction would be 90 dBA L_{max} at a distance of 50 feet from the acoustic center of a construction area. This would result in a reasonable worst-case hourly average of 86 dBA L_{eq}. The acoustic center reference is used because construction equipment must operate at some distance from one another on a project site, and the combined noise level as measured at a point equidistant from the sources (acoustic center) would be the worst-case maximum noise level. The effect on sensitive receptors is evaluated below.

The closest off-site noise-sensitive land use are single-family residences southwest of the project site, located approximately 200 feet from the nearest construction area. At this distance, unmitigated noise levels from project-related construction activities would attenuate to 70 dBA L_{eq} with maximum noise levels of 77 dBA L_{max}. This is above the acceptable 65 dBA noise conditions for residential land uses, and construction will be occurring closer than the allowed 600 feet from a

residence. Therefore, compliance with the City's permissible hours of noise-producing construction activities, as well as compliance with standard construction noise reduction measures, would ensure that construction noise impacts would not result in a substantial temporary increase at the nearest off-site sensitive receptors above standards established in the General Plan or Municipal Code.

Therefore, with the implementation of multi-part Mitigation Measure NOI-1, construction noise impacts would be reduced to a level of less than significant.

Operation

Implementation of the project would result in mobile and stationary operational noise sources. Potential noise impacts with these project-related sources are analyzed below.

Mobile Source Operational Noise Impacts

Significant noise impacts to off-site receptors would occur if the project would result in a substantial increase in ambient noise levels, compared with noise levels existing without the project. A change of 3 dB is the lowest change that can be perceptible to the human ear in outdoor environments. Therefore, for purposes of this analysis, an increase of 3 dBA or greater in ambient noise levels is considered a substantial increase.

The FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to evaluate traffic-related noise conditions in the vicinity of the project site. Traffic data used in the model was obtained from the traffic impact analysis prepared by W-Trans for the proposed project. The model inputs and outputs—including the 60 dBA, 65 dBA, and 70 dBA L_{dn} noise contour distances–without and with the project are provided in Appendix K of this document and are summarized in Table 3.10-8 and

Table 3.10-9 below. The modeling assumptions assume a direct line of sight, with no reductions assumed for fencing or structural screening.

The greatest increases in traffic noise levels with implementation of the project would occur along Walters Road from Pintail Drive to Montebello Drive. This roadway segment would experience an increase of 0.4 dBA under conditions with the project compared to conditions without the project.

This increase is considered to be less than perceptible increases to the human ear in outdoor environments (less than a 3 dBA increase), and therefore would not be considered a substantial increase in ambient noise levels. Therefore, project-related traffic noise impacts to off-site receptors would be less than significant.

Table 3.10-8: Near-Term Scenario Modeled Roadway Noise Levels

Roadway	From	To	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane		
			Near-Term	Near-Term with Project	Net Increase (dBA)
Walters Road	Bella Vista Drive	Pintail Drive	64.5	64.7	0.2
Walters Road	Pintail Drive	Montebello Drive	64.3	64.7	0.4

Roadway	From	To	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane		
			Near-Term	Near-Term with Project	Net Increase (dBA)
Walters Road	Montebello Drive	Petersen Road	64.7	65.0	0.3
SR-12	Sunset Avenue	Emperor Drive	68.0	68.1	0.1
SR-12	Emperor Drive	Walters Road	66.9	67.1	0.2

Notes:
dBA = A-weighted decibel
L_{dn} = day/night average sound level
Source: FirstCarbon Solutions (FCS) 2021.

Table 3.10-9: Cumulative Modeled Roadway Noise Levels

Roadway	From	To	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane		
			Cumulative	Cumulative with Project	Net Increase (dBA)
Walters Road	Bella Vista Drive	Pintail Drive	65.9	66.1	0.2
Walters Road	Pintail Drive	Montebello Drive	65.4	65.8	0.4
Walters Road	Montebello Drive	Petersen Road	65.8	66.1	0.3
SR-12	Sunset Avenue	Emperor Drive	68.7	68.8	0.1
SR-12	Emperor Drive	Walters Road	65.9	68.3	0.1

Notes:
dBA = A-weighted decibel
L_{dn} = day/night average sound level
Source: FirstCarbon Solutions (FCS). 2021.

Stationary Source Operational Noise Impacts

A significant impact would occur if operational noise levels generated by stationary noise sources at the proposed project site would result in a substantial permanent increase in ambient noise levels in excess of the City's noise performance standards. The City's maximum exterior noise level standards for stationary noise sources are outlined in Table 3.10-7. The most restrictive of these standards are 50 dBA and 45 dBA hourly L_{eq} for daytime and nighttime respectively, as measured at outdoor active use areas of the residential land uses.

The proposed project would generate noise from parking lot activities, new exterior mechanical equipment sources, such as rooftop ventilation systems on proposed industrial uses, and from truck loading and unloading activities. Potential impacts from these noise sources are discussed below.

Truck Unloading

The highest stationary source noise levels associated with the proposed project would be generated by truck loading/unloading activities at the loading areas of the proposed warehouse facility. The primary noise sources associated with loading dock areas would be the heavy trucks stopping (air

brakes), backing into the loading docks (backup alarms), trailer coupling and decoupling, pulling out of the loading docks (engines accelerating) and potential refrigeration unit operation. Heavy-truck trailer unloading will occur directly from the inside of the trailer while docked in the recessed bays.

Typical noise levels from larger delivery truck loading and unloading activities are documented to range up to 75 dBA to 85 dBA L_{max} as measured at 50 feet. The typical truck unloading process takes an average of 15 to 20 minutes. A typical busy nighttime hour of loading dock activities yielded average noise levels 5 dB lower than those measured during daytime hours. The proposed loading dock configurations of the nearest buildings would locate the effective noise center of the loading docks approximately 630 feet from the nearest residences located to the northwest of the project site, and approximately 875 feet from the nearest residences located to the southwest of the project site. Assuming that the loudest loading/unloading activities were simultaneously occurring at multiple loading bays closest to these off-site receptors, the noise levels for these worst-case loading dock activities would attenuate to below 38 dBA L_{eq} at the nearest residences. The calculation sheets detailing input assumptions are included in Appendix K.

Therefore, these stationary operational noise levels would be below the City's most restrictive daytime and nighttime hourly noise level standards of 50 dBA L_{eq} and 45 dBA L_{eq}, respectively, for new operational noise (see Table 3.10-7). As a result, this impact is considered less than significant.

Mechanical Equipment Noise

The heating, ventilation, and air conditioning (HVAC) systems for the warehouse uses will likely consist of packaged rooftop air conditioning systems. Such units are typically evenly distributed across the roof of the buildings. Packaged rooftop HVAC units typically stand about 4–5 feet tall. Noise levels from typical rooftop mechanical ventilation equipment range up to approximately 60 dBA L_{eq} at a distance of 25 feet. The closest noise-sensitive land use to potential rooftop mechanical ventilation systems would be the residences located to the southwest of the proposed project. Rooftop mechanical ventilation systems could be located as close as 510 feet from the nearest residential property line northwest of the project site, and approximately 285 feet from the nearest residential property line southwest of the project site. At this distance, noise from rooftop mechanical ventilation equipment operation would attenuate to approximately 37 dBA L_{eq}. at the nearest residential property line. The calculation sheets detailing input assumptions are included in Appendix K.

Therefore, these stationary operational noise levels would be below the City's most restrictive daytime and nighttime hourly noise level standards of 50 dBA L_{eq} and 45 dBA L_{eq}, respectively, for new operational noise. As a result, this impact is considered less than significant.

Parking Lot Activity Noise

According to the project site plans, parking spaces are proposed as close as 435 feet from the nearest residential property line northwest of the project site, and approximately 260 feet from the nearest residential property line southwest of the project site. The existing 6-foot high soundwalls along the residential property lines would provide a minimum of 5 dBA of shielding from ground level parking activity noise levels. Representative parking activities, such as vehicles cruising at slow speeds, door slamming, cars starting, would generate approximately 60 dBA to 70 dBA L_{max} at 50

feet. Typical parking events take an average of less than one minute. Assuming each of the parking spaces within approximately 500 feet of the nearest residential property would incur one parking event in a maximum use hour, the combined parking lot activity would generate an hourly average noise levels of up to 39 dBA L_{eq} at the nearest residential property line. The calculation sheets detailing input assumptions are included in Appendix K.

Therefore, these stationary operational noise levels would be below the City's most restrictive daytime and nighttime hourly noise level standards of 50 dBA L_{eq} and 45 dBA L_{eq}, respectively, for new operational noise. As a result, this impact would be less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact

Based on the above analysis, impacts from noise generated from stationary operational noise sources would be less than significant. However, project construction activity noise impacts, which could result in a temporary increase in ambient noise levels in the project vicinity that could result in annoyance or sleep disturbance of nearby sensitive receptors, would be reduced to less than significant levels with implementation of the following multi-part mitigation measure.

Mitigation Measures

MM NOI-1 Implementation of the following multi-part mitigation measure is required to reduce potential construction-period noise impacts:

- The construction contractor shall ensure that all equipment driven by internal combustion engines shall be equipped with mufflers, which are in good condition and appropriate for the equipment.
- The construction contractor shall ensure that unnecessary idling of internal combustion engines (i.e., idling in excess of 5 minutes) is prohibited.
- The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists.
- At all times during project grading and construction, the construction contractor shall ensure that stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from adjacent residences.
- The construction contractor shall ensure that the construction staging areas shall be located to create the greatest feasible distance between the staging area and noise-sensitive receptors nearest the project site.
- The construction contractor shall ensure that general construction activity, including loading and unloading and warm up of equipment, shall be restricted to the hours of 7:00 a.m. and 8:00 p.m., Monday through Friday, and 8:00 a.m. and 8:00 p.m. on Saturday and Sunday. Construction activity for earthwork, trenching, concrete, or paving, the hours of work activity on the site shall be restricted to between the hours of 7:00 a.m. and 6:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 5:00 p.m. on Saturday.

Level of Significance After Mitigation

Less than significant.

Substantial Permanent Noise Increase

Impact NOI-2: The proposed project would not generate a substantial permanent increase in ambient noise levels in noise-sensitive locations in the project vicinity.

Impact Analysis

Construction

As identified under Impact NOI-1 discussion above, the closest off-site noise-sensitive land use are single-family residences southwest of the project site, adjacent to SR-12. At this distance, unmitigated reasonable worst-case noise levels from the loudest phase of project-related construction activities would attenuate to 70 dBA L_{eq} with maximum noise levels of 77 dBA L_{max}. However, these noise impacts would only be temporary; these reasonable worst-case construction noise levels would only occur when site preparation construction activity occurs close to the project boundary nearest these off-site sensitive receptors. Subsequent phases of construction would result in substantially lower noise levels, since the loudest pieces of construction equipment are the heavy equipment used for site preparation. In addition, all construction noise would cease once construction is complete and would not remain as a permanent noise source in the project vicinity. Therefore, because construction is a temporary activity, related noise impacts would not result in a substantial permanent increase in ambient noise levels as measured at the nearest off-site sensitive receptors.

Operation

A change of 3 dB is the lowest change that can be perceptible to the human ear in outdoor environments. Therefore, for the purposes of this analysis, a permanent increase of 3 dBA or greater in ambient noise levels is considered a substantial permanent increase.

Implementation of the proposed project would result in mobile and stationary operational noise sources. Potential noise impacts with these project-related sources are analyzed below.

Mobile Source Operational Noise

As noted above, the closest off-site noise-sensitive land use are single-family residences southwest of the project site, adjacent to SR-12. Existing traffic noise levels along SR-12 adjacent to these nearest off-site noise-sensitive receptors are shown in Table 3.10-4 to range up to 66.4 dBA L_{dn} as measured at 50 feet from the centerline of the outermost travel lane.

The loudest project-related traffic noise levels would occur under cumulative plus project conditions. As shown in Table 3.10-9, traffic noise levels on SR-12 adjacent to these nearest off-site noise-sensitive receptors would range up to 68.3 dBA L_{dn} as measured at 50 feet from the centerline of the outermost travel lane. This would constitute a 1.9 dBA increase in traffic noise levels compared to existing conditions on this roadway segment adjacent to the nearest noise-sensitive receptors. This is below the 3 dBA increase that would be considered significant. Therefore, project-related traffic noise increases would be a less than significant permanent increase.

Stationary Source Operational Noise Impacts

As noted above, the closest off-site noise-sensitive land use are single-family residences southwest of the project site, adjacent to SR-12. The existing ambient noise levels near these residences is documented by the modeled existing traffic noise levels along SR-12 adjacent to these nearest off-site noise-sensitive receptors. Existing traffic noise levels are shown in Table 3.10-4 to range up to 66.4 dBA L_{dn} as measured at 50 feet from the centerline of the outermost travel lane.

As identified under Impact NOI-1 discussion above the calculated reasonable worst-case loading dock activity noise levels would attenuate to below 38 dBA L_{eq} at the nearest residences; calculated noise from rooftop mechanical ventilation equipment operation would attenuate to approximately 37 dBA L_{eq} at the nearest residential property line; and combined parking lot activity would generate an hourly average noise levels of up to 39 dBA L_{eq} at the nearest residential property line. These combined reasonable worst-case operational noise levels would range up to 42.8 dBA L_{eq} at the nearest residential property line. These noise levels are well below the documented existing traffic noise levels and would not result in any increase in ambient noise levels as measured at the nearest noise-sensitive receptors. Therefore, project-related stationary source operational noise increases would be a less than significant permanent increase.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation necessary.

Level of Significance After Mitigation

Less than significant impact.

Groundborne Vibration/Noise Levels

Impact NOI-3:	**The proposed project would not result in generation of excessive groundborne vibration or groundborne noise levels.**

Impact Analysis

This section analyzes both construction and operational groundborne vibration and noise impacts. Groundborne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. Groundborne noise is generated when vibrating building components radiate sound, or noise generated by groundborne vibration. In general, if groundborne vibration levels do not exceed levels considered to be perceptible, then groundborne noise levels would not be perceptible in most interior environments. Therefore, this analysis focuses on determining exceedances of groundborne vibration levels.

Suisun City has not established quantitative groundborne vibration thresholds for construction. Therefore, for the purposes of this analysis, the FTA's vibration impact criteria are utilized to analyze vibration impacts. The FTA has established industry accepted standards for vibration impact criteria and impact assessment. These guidelines are published in its Transit Noise and Vibration Impact

Assessment Manual.[8] The construction vibration impact criteria are summarized in Table 3.10-5.

The City's has established an operational groundborne vibration performance threshold of 78 VdB as measured at any habitable structure.

Construction

A significant impact would occur if implementation of the project resulted in groundborne vibration levels in excess of established standards or that would expose existing structures to vibration levels in excess of established vibration damage criteria. The FTA has established industry accepted standards for vibration impact criteria and impact assessment. These guidelines are published in its Transit Noise and Vibration Impact Assessment document.[9] The FTA guidelines include thresholds for construction vibration impacts for various structural categories.

Project construction can generate varying degrees of groundborne vibration, depending on the construction procedure and the construction equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). In extreme cases, excessive groundborne vibration has the potential to cause structural damage to buildings.

Of the variety of equipment used during construction, the vibratory rollers that are anticipated to be used in the site preparation phase of construction would produce the greatest groundborne vibration levels. Impact equipment such as pile drivers is not expected to be used during construction of this project. Vibratory rollers produce groundborne vibration levels ranging up to 0.210 inch per second (in/sec) PPV at 25 feet from the operating equipment.

Based on the proposed site plan, the nearest off-site structure to the proposed construction areas where heavy construction equipment would operate would be the self-storage office building and storage structures located north of the project site on Petersen Road, approximately 110 feet from the nearest construction footprint where heavy equipment would operate. At this distance, groundborne vibration levels could range up to 0.02 PPV from operation of a large vibratory roller. This is well below the industry standard vibration damage criteria of 0.2 PPV for structures of nonengineered timber from which these buildings are constructed. Therefore, construction-related groundborne vibration impacts would be considered less than significant.

Operational

Upon completion of construction, the project would not include any permanent stationary sources of groundborne vibrations. Mobile sources would include loaded truck movements on access roadways to the project site. According to the FTA's Transit Noise and Vibration Impact Assessment document, heavy trucks traveling on paved roadways can generate vibration levels up to 65 VdB at 50 feet. All off-site sensitive structures are located a minimum of 50 feet from proposed project access roadways. Therefore, vibration levels from project truck passings would be below the City's established operational threshold for vibration impacts of 78 VdB. As such, implementation of the proposed project would not expose persons within the project vicinity to excessive groundborne

[8] Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual. September.
[9] Federal Highway Administration (FHWA). 2006. Highway Construction Noise Handbook. August.

vibration levels. Therefore, project-related groundborne vibration impacts would be considered less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation necessary.

Level of Significance After Mitigation

Less than significant impact.

Excessive Noise Levels from Airport Activity

Impact NOI-4:	**The proposed project would not expose people residing or working in the project area to excessive noise levels for a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport.**

Impact Analysis

The project site is located within the airport planning boundary of Travis Air Force Base. The site is located under the flight path of Runway 3L/21R. The southwestern portion of the project site lies within the airport's 65-70 dBA CNEL noise contour, while the rest of the project site lies within the 60-65 dBA CNEL noise contour.

In compliance with Caltrans' Airport Land Use Planning Handbook guidelines, the Solano County ALUC has adopted a Land Use Compatibility Plan (LUCP) for the Travis Air Force Base. Table 2A of the Travis Air Force Base LUCP identifies acceptable aviation noise levels by land use. For service commercial, warehouse, and light industrial uses, aviation noise levels up to 65 dBA CNEL are listed as "clearly acceptable," up to 70 dBA CNEL as "normally acceptable" and above 70 dBA CNEL as "marginally acceptable." The proposed project's uses would be consistent with the noise standards of the Airport LUCP, and, therefore, the proposed project would not expose individuals working or residing in the project vicinity to excessive aviation noise. As a result, this impact would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

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3.11 - Public Services

3.11.1 - Introductions

This section describes the existing public services and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information provided by the City of Suisun City General Plan, City of Suisun City Municipal Service Review, and the service providers' websites.

3.11.2 - Environmental Setting

Fire Protection and Emergency Medical Services

The Suisun City Fire Department provides fire protection and emergency response services to Suisun City. The Fire Department is headquartered at 621 Pintail Drive. The Fire Department's service area is 4.5 square miles.

Fire Station

The Fire Department operates one fire station (Station 47), which is summarized in Table 3.11-1.

Table 3.11-1: Fire Station Summary

Address	Distance from Project Site	Apparatus	Staffing
621 Pintail Drive	1.6 miles	Type 1 Engine (2) Ladder Truck (1)	Two engine companies staffed 24 hours a day/7 days a week; Four suppression personnel and one Chief Officer
Source: City of Suisun City. 2023.			

Staffing

The Fire Department is a combination department consisting of career and volunteer personnel. Career staff consists of one Fire Chief, two Chief Officers, 12 fire suppression personnel, and 11 volunteer fire fighters. The Fire Department is supported by Medic Ambulance for medical transport services through a contractual agreement with Solano County

Apparatus

The Fire Department's apparatus consists of two Type 1 Fire Engines, one Type 3 Fire Engine, one 100-foot Ladder Truck, three Command Vehicles, one Type 5 Fire Engine, and two Zodiac Water Rescue Boats.

Calls for Service

The Fire Department responded to 3,373 calls for service annually in 2022. More than two-thirds of the calls involved rescues and emergencies. Fires accounted for approximately 7 percent of calls for service.

Police Protection

The City of Suisun City Police Department provides law enforcement services within the Suisun City limits. The Police Department is headquartered at 701 Civic Center Boulevard and has a substation at the Burdick Center, which houses records.

Staffing and Organization

The Police Department is staffed by 35 staff members, including a chief, two commanders, four sergeants, two detectives, 13 police officers, and 12 support personnel (dispatchers, community services officers, etc.).

The Police Department is organized into two divisions: Operations and Support Services. The Operations Division oversees patrol, traffic enforcement, investigations, problem-oriented policing and neighborhood watch. The Support Services Division oversees records management, safety communications, crime prevention, crime analysis, property/evidence management and code enforcement.

Calls for Service

The Police Department responded to 26,555 calls for service in 2020, which resulted in 3,531 cases taken and 910 arrests.

Response Times

The Police Department's average response to time to Priority 1, 2, 3, and 4 in 2014 calls are summarized as follows:

- Priority 1 (Immediate threat to persons or property): 3 minutes, 10 seconds
- Priority 2 (No immediate threat; expedited response required): 4 minutes, 29 seconds
- Priority 3 (In-progress incidents which do not pose a threat to people or property); 4 minutes, 40 seconds
- Priority 4 (Late reports of crimes or assistance with general questions): 4 minutes, 7 seconds

3.11.3 - Regulatory Framework

State

California Building Standards Code

Title 24 of the California Code of Regulations, also known as the California Building Standards Code, is a compilation of three types of building standards from three different origins:

- Building standards that have been adopted by state agencies without change from building standards contained in national and international model codes.
- Building standards that have been adopted and adapted from national and international model code standards to meet California conditions.

- Building standards, authorized by the California legislature, constitute extensive additions not covered by the model codes that have been adopted to address particular California concerns.

The California Fire Code is a component of the California Building Standards Code and contains fire-safety-related building standards.

Local

City of Suisun City

General Plan

The City of Suisun City General Plan sets forth the following goals, objectives, and policies relevant to public services:

Goal CFS-1 Provide facilities and services to new and existing residents and businesses at levels that maintain or improve the local quality of life and fiscal sustainability of the community.

Objective CFS-1 Plan, prioritize, program, and fund community facilities and services to accommodate development anticipated at buildout of the 2035 General Plan.

Policy CFS-1.1 New developments will be required to demonstrate, to the satisfaction of the City Engineer, that existing services and utilities can accommodate the increased demand generated by the subject project or that project conditions would adequately mitigate for impacts associated with addition demand.

Goal CFS-2 Maintain public safety facilities and services for new and existing residents and businesses that protect the public health, safety, and welfare.

Objective CFS-2 Provide staffing levels, facilities, and community design required to maintain acceptable emergency response times and effective public safety services.

Policy CFS-2.2 New developments will be required to design, and the City will maintain streets that facilitate acceptable emergency access and response times.

Policy CFS-2.3 New developments shall be designed, constructed, and equipped consistent with requirements of the California Fire Code to reduce fire risk.

Policy CFS-2.5 The Police Department should review development proposals and provide recommendations that would ensure adequate access and community surveillance.

Policy CFS-2.6 The Fire Department should review development proposals and provide recommendations that would ensure adequate emergency access, fire suppression equipment, and other features that reduce fire risk.

3.11.4 - Methodology

FirstCarbon Solutions (FCS) reviewed information about the Suisun City Fire Department and Police Department including agency websites, annual reports, and call volume data. Fire Department and Police Department staff peer reviewed descriptions of their services for accuracy and completeness.

3.11.5 - Thresholds of Significance

CEQA Guidelines Appendix G is a sample Initial Study checklist that includes a number of factual inquiries related to the subject of public services, as it does on a whole series of additional environmental topics. Notably, lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance on these subjects, or indeed on any subject addressed in the checklist. (*Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1068.) Rather, with few exceptions, "CEQA grants agencies discretion to develop their own thresholds of significance." (*Ibid.*) Even so, it is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G and to use that language in fashioning thresholds. The City has done so here. Thus, for purposes of this EIR, a significant impact would occur if implementation of the proposed project would:

> . . . result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
>
> a) Fire protection;
> b) Police protection;
> c) Schools (refer to Section 7, Effects Found not to be Significant);
> d) Parks (refer to Section 7, Effects Found not to be Significant); or
> e) Other public facilities? (refer to Section 7, Effects Found not to be Significant).

Importantly, CEQA does not treat impacts on service ratios or responses times to be adverse effects on "the environment." (*City of Hayward v. Board of Trustees of the California State University* (2015) 242 Cal.App.4th 833, 843.) Rather, what matters under CEQA is whether, in order to maintain adequate service ratios or response times, a city, county, or other service provider would have to build new or expanded physical facilities, which themselves could result in environmental effects. (*Id*. at pp. 843-844; see also *Goleta Union School Dist. v. Regents of University of California* (1995) 37 Cal.App.4th 1025, 1032-1033 [CEQA is not concerned with school overcrowding, which is a socioeconomic effect, but is concerned with the impacts of school construction needed to alleviate overcrowding]). Under CEQA, then, the environmental analysis relating to the provision of the above-mentioned services should be limited to possible construction-related impacts, if any, associated with the services.

3.11.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Fire Protection

Impact PS-1:	**The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire facilities.**

Impact Analysis

The Suisun City Fire Department would provide fire protection and emergency medical services to the proposed project. The project site is located 1.6 miles from the fire station located at 621 Pintail Drive.

The Fire Department indicated that its primary concern with the proposed project would be responding to a large fire. The Fire Department advised that having a detection and fire sprinkler system would afford the ability to contain the fire until crews and resources arrive on scene. The proposed project would be subject to the latest adopted edition of the California Fire Code at the time building permits are sought, including provision of detection and fire sprinkler systems. Under the current Fire Code, the proposed project would be required to provide 2,000 gallons per minute of fire flow for 2 hours.

The Fire Department indicated that it would be able to easily respond to medical calls, which represented approximately two-thirds of the 2021 call volume.

The Fire Department noted that it would need to request county resources for hazard materials, technical rescue, and confined space rescue, as it does not have the personnel, equipment, or training for these operations. The Fire Department is a member of the Solano County Mutual Aid Agreement and the California Mutual Aid Agreement and, thus, has the existing ability to request assistance from other fire agencies with these events.

The Fire Department indicated that areas east of Walters Road are outside of the adopted 5-minute response time, 90 percent of calls objective. To address this deficiency, the City of Suisun City General Plan contemplates the development of two new fire stations at either end of the City to replace the existing one at 621 Pintail Drive.

The development of a new fire station on the east side of Suisun City would serve to improve response times to the proposed project. The proposed project would pay fire development fees to the City of Suisun City at the time building permits are sought and thus would further the development of this facility. However, this facility is not required to serve the proposed project and its physical impacts on the environment would be evaluated as part of a separate environmental review process. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Police Protection

Impact PS-2:	**The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities.**

Impact Analysis

The Suisun City Police Department would provide police protection to the proposed project.

The proposed project would not be expected to place significant demands on police protection because (1) the end uses would be primarily warehouse and light industrial; (2) the site would be secured with fencing and gates and employ video surveillance; and (3) the site is geographically located at the outer edge of the city limits near Travis Air Force Base, making unauthorized entry more difficult and detectable. Moreover, the Police Department would have the opportunity to review project plans at the time the applicant seeks permits and would be able to make safety and security recommendations. For these reasons, the proposed project would not increase demands on the Suisun City Police Department such that new or expanded police facilities would be required. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

3.12 - Transportation

3.12.1 - Introduction

This section provides an evaluation of traffic and transportation issues associated with implementation of the proposed Suisun Logistics Center to be located in the City of Suisun City. Potential impacts on intersections, local roadway segments, highways, and transit, bicycle, and pedestrian facilities were evaluated following applicable standards, methodologies, and significance criteria. Particular attention was given to the effects on vehicular operation on transportation facilities located within the Cities of Suisun City and Fairfield and surrounding jurisdictions. Supporting Information is provided in Appendix I. This section was prepared by W-Trans with input from Fehr and Peers on the subject of employee vehicle miles traveled (VMT).

3.12.2 - Environmental Setting

Roadway Network

The following are descriptions of the roadway facilities serving the project site.

State Route 12 (Rio Vista Road)

State Route (SR) 12 is designated by the Solano Transit Authority (STA) as a Route of Regional Significance and is the major east-west corridor through Suisun City. It functions as a four-lane expressway from its junction with Interstate 80 (I-80) west of Suisun City to Walters Road at the eastern city limits. East of this segment it narrows to a two-lane rural major arterial. Access to Suisun City is provided at the Civic Center Drive interchange, at SR-12 signalized intersections with Marina Boulevard, Sunset Avenue/Grizzly Island Road, Emperor Drive/Lawler Ranch Parkway, and Walters Road/Lawler Ranch Parkway. The California Department of Transportation (Caltrans) operates SR-12 as a State highway.

Interstate 80

I-80 primarily has four travel lanes in each direction in the Vacaville area. It extends southwest through Fairfield and Vallejo, crosses the Carquinez and Oakland Bay Bridges, and terminates at United States Highway 101 (US-101) in San Francisco. It also extends northeast through Dixon and Davis, over the Sacramento River to Sacramento and beyond, all the way to the East Coast.

Walters Road

Walters Road is a four-lane north-south arterial linking SR-12 with Air Base Parkway in Fairfield. It is designated by the STA as a Route of Regional Significance in Solano County. Walters Road forms the southern portion of the planned Jepson Parkway, a future travel corridor that is currently in the planning and environmental review stage. The Jepson Parkway Concept Plan defines a four-lane parkway connecting Walters Road at SR-12 to the Leisure Town interchange on I-80 in Vacaville. The purpose of the corridor is to provide improved intra-county mobility for residents of Solano County. It has a posted speed of 45 miles per hour (mph).

Air Base Parkway

Air Base Parkway is a four-lane east–west expressway in the City of Fairfield, providing access from I-80 to the northern terminus of Walters Road. It has a posted speed limit of 50 mph. Air Base Parkway provides access to residential, commercial, and retail land uses as well as some schools. It is also the main access point to Travis Air Force Base. Class II bike lanes in both directions currently exist along Air Base Parkway from Heath Drive to Travis Air Force Base.

Sunset Avenue

Sunset Avenue is a four-lane north–south arterial with a posted speed limit of 35 mph. Sunset Avenue intersects with SR-12 at its southern terminus and becomes Grizzly Island Road. Class II bike lanes are provided on Sunset Avenue between East Tabor Avenue and SR-12.

Petersen Road

Petersen Road is a three-lane arterial that borders the northern edge of the project site, intersecting Walters Road at the northwest corner of the project site. Petersen Road, which has a 45-mph speed limit, is primarily bordered by vacant land and provides secondary access to the Travis Air Force Base. There is a dedicated eastbound truck only lane for Travis Air Force Base. Petersen Road would also provide access points to the project site.

East Tabor Avenue

East Tabor Avenue is designated as an arterial street, with two lanes and a posted speed limit of 35 mph. East Tabor Avenue intersects Walters Avenue just south of Air Base Parkway. This roadway primarily provides access to residential neighborhoods in the City of Fairfield as well as some retail establishments and schools.

Pintail Drive

Pintail Drive has two lanes, is identified as a Collector Street, and runs in the east–west direction. The road provides a connection between Village Drive and Walters Road. West of Village Drive, the roadway is named Buena Vista Avenue and intersects with Marina Boulevard. It primarily serves residential neighborhoods and Dan O. Root and Suisun Elementary Schools. Pintail Drive has a posted speed limit of 20 mph near the two schools.

Alternative Modes of Transportation

The pedestrian and bicycle facilities currently providing access to the project site and nearby transit resources are described below.

Pedestrian Facilities

Sidewalks are currently provided along both sides of Walters Road bordering the project site and extending north. There are no sidewalks along the project frontage on Petersen Road, which borders the northern edge of the project site. The Central County Bikeway, a Class I multiuse path, runs parallel to SR-12 from Main Street to Petersen Road, connecting to the existing sidewalks on Walters Road, providing additional pedestrian access to the project site.

Bicycle Facilities

Within the project vicinity there are a variety of bicycle facilities. The various bikeway facility types are defined as follows.

- Class I: A dedicated and paved pathway in a right-of-way separated from vehicle traffic.
- Class II: A lane that shares the street and is separated from traffic by pavement markings.
- Class III: Shared use of the street indicated with signs only.
- Class IV Bikeway: Also known as a separated bikeway, a facility for the exclusive use of bicycles that includes a separation between the bikeway and the motor vehicle traffic lane. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

In the project area, the Central County Bikeway, a Class I multiuse path, generally runs east–west on the northerly side of SR-12 from the Suisun Amtrak Station to the intersection of Peterson Road/Walter Road then continues as a Class IV bikeway on the northerly side of Peterson Road adjacent to the project site. Grizzly Island Trail, a Class I multiuse path, generally runs east–west on the south side of SR-12 from Marina Boulevard to Sunset Avenue. On Walters Road, a Class II bike lane exists from SR-12 to East Tabor Avenue and would be connected to a planned Class III Bicycle Route along Lawler Ranch Parkway in the south. There is a planned Class I multiuse path predominantly on Lawler Ranch Parkway and Anderson Drive between the Lawler Ranch Parkway/Whitby Way intersection and the McCoy Creek.

Transit Facilities

Suisun Microtransit provides door-to-door public transit with Suisun City. Riders call Suisun Microtransit to schedule a pick up. A transit vehicle arrives and transports the rider to any destination in Suisun City or to one of nine locations in Fairfield.

3.12.3 - Existing Conditions

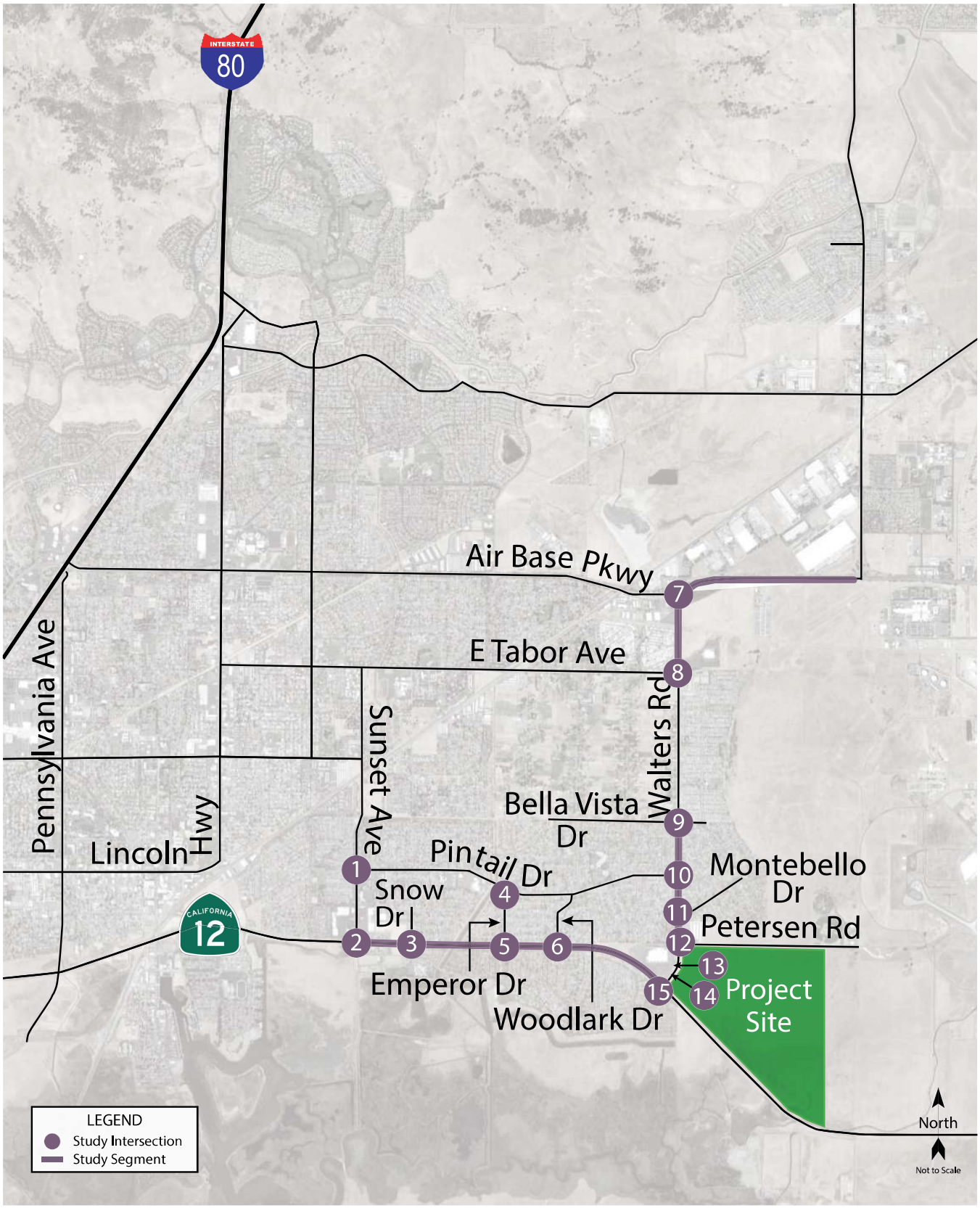
Study Facilities

Intersections

In consultation with staff of Suisun City as well as other nearby cities and Caltrans, the following 15 intersections were selected for analysis as potentially being operationally deteriorated by project traffic. These intersections, which represent locations in the City and nearby jurisdictions that would serve the majority of the project traffic, are listed below and shown in Exhibit 3.12-1. The existing geometries are shown in Exhibit 3.12-2. The controlling jurisdiction (if not the City of Suisun City) is indicated in brackets.

1. Pintail Drive/Sunset Avenue
2. Rio Vista Road (SR-12)/Sunset Avenue [Caltrans]
3. Rio Vista Road (SR-12)/Snow Drive [Caltrans]
4. Pintail Drive/Emperor Drive

5. Rio Vista Road (SR-12)/Emperor Drive–Lawler Ranch Parkway [Caltrans]
6. Rio Vista Road (SR-12)/Woodlark Drive [Caltrans]
7. Air Base Parkway/Walters Road [City of Fairfield]
8. Tabor Avenue/Walters Road [Fairfield]
9. Bella Vista Drive/Walters Road
10. Pintail Drive/Walters Road
11. Montebello Drive-Mammoth Way/Walters Road
12. Petersen Road/Walters Road
13. Main Driveway/Walters Road
14. South Driveway/Walters Road
15. Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway [Caltrans]



Source: W-Trans, 05/2021.

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Exhibit 3.12-1
Study Area

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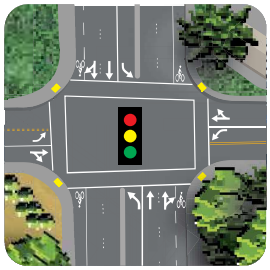
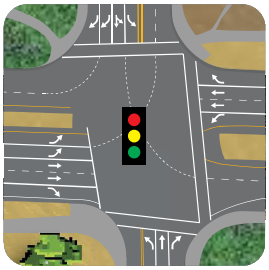
1 Pintail Dr & Sunset Ave



2 SR-12 & Sunset Ave

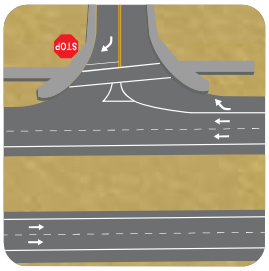


3 SR-12 & Snow Dr

4 Pintail Dr & Emperor Dr

5 SR-12 & Emperor Dr

6 SR-12 & Woodlark Dr

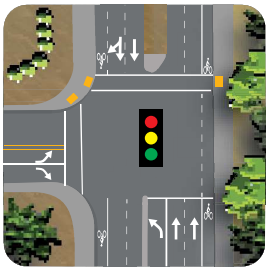


7 Air Base Pkwy & Walters Rd

8 Tabor Ave & Walters Rd

9 Bella Vista Dr & Walters Rd

10 Pintail Dr & Walters Rd

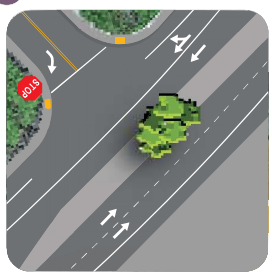


11 Montebellow Dr & Walters Rd

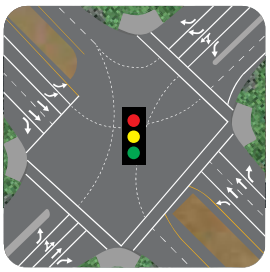
12 Petersen Rd & Walters Rd

13 Main Dvwy & Walters Rd

14 South Dvwy & Walters Rd



15 SR-12 & Walters Rd



LEGEND
● Study Intersection

Source: W-Trans, 05/2021.

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Exhibit 3.12-2
Existing Lane Configurations

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Congestion Management Plan Road Segments

The following three roadway segments in the project vicinity were selected for analysis as potentially being impacted by project traffic and included in the Congestion Management Plan (CMP). These roads serve not only local traffic but also regionally serve as trucking routes.

1. Air Base Parkway between Walter Road and Peabody Road
2. Walters Road between Air Base Parkway and Suisun city limits
3. Walters Road between Suisun city limits and SR-12

Traffic Volumes

As noted in the Draft Environmental Impact Report (Draft EIR) Notice of Preparation, the COVID-19 pandemic was affecting traffic volumes throughout the region and traffic counts were lower than what was previously considered typical volumes. As such, in order to be conservative (i.e., to avoid understating project impacts), historical traffic count data was applied in the Draft EIR analysis. The vehicle turning movement counts were collected at the study intersections in early November 2016 while area schools were still in session and not during holidays. Conditions during the AM and PM peak periods were evaluated to capture the highest potential impacts of the proposed project as well as the highest volumes on the local transportation network. The morning peak-hour typically occurs between 7:00 a.m. and 9:00 a.m. and reflects conditions during the home to work or school commute, while the PM peak-hour occurs between 4:00 p.m. and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute. To project the expected traffic volume change between 2016 and 2021, the 2035 Fairfield travel forecast model was reviewed to establish annual traffic growth rates. Along corridors where traffic increases were expected for certain movements, a straight-line growth rate was applied to create year 2021 traffic volumes.

Exhibit 3.12-3 and Exhibit 3.12-4 depict the applied existing 2021 traffic volumes.

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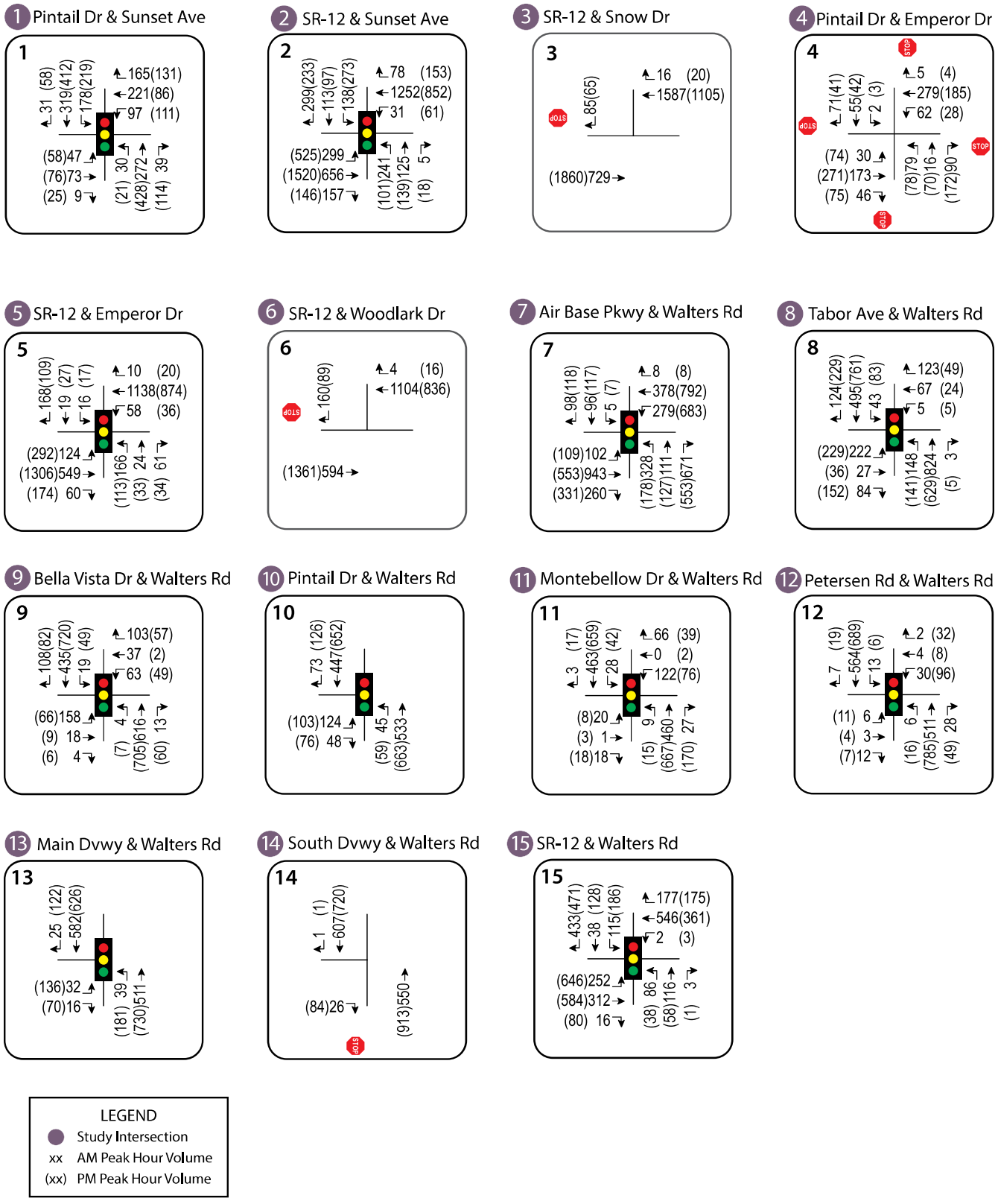

Source: W-Trans, 05/2021.

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Exhibit 3.12-3
Existing Intersection Traffic Volumes

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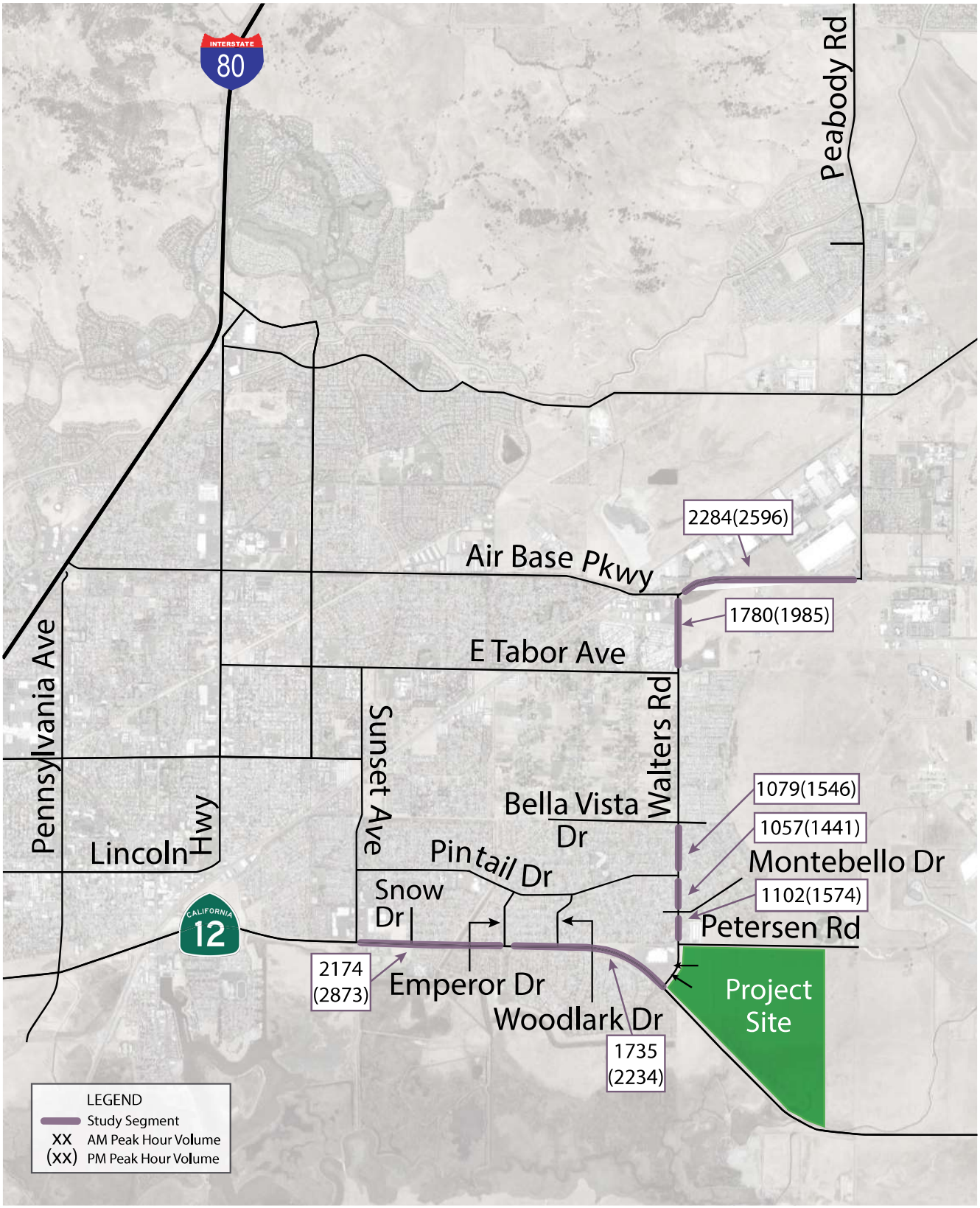

Source: W-Trans, 05/2021.

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Exhibit 3.12-4
Existing Segment Traffic Volumes

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Heavy Vehicle Counts

Congestion Management Plan

Daily counts on Walters Road were collected for seven days in 2016 to determine the type and quantity of trucks and heavy vehicles on this roadway with specific attention to the percentage of heavy vehicles. The percentage of heavy trucks on Walters Road prior to the pandemic was applied to the year 2021 analysis.

The 2016 counts indicate that, on average, Walters Road north of SR-12 experiences daily volumes of 2,827 heavy vehicles on weekdays and 1,706 heavy vehicles on weekends. On weekdays, heavy vehicle traffic peaks at 5:00 p.m. with 221 vehicles per hour and at 1:00 p.m. on weekends with 153 vehicles over the course of an hour. Truck traffic accounts for approximately 27 percent of the total volumes experienced on this study segment on weekdays and 20 percent on weekends. Overall, the majority of truck traffic that occurs on this segment of Walters Road is during the midday and steadily decreases after it peaks in the early evening. From the peak-hour counts collected at the intersection of Petersen Road/Walters Road, heavy vehicles account for about 8 percent of the Walters Road morning peak-hour volumes and 4 percent of the evening peak-hour volumes. The majority of heavy vehicles that travel this roadway are two-axle, four-tire single units and two-axle, six-tire single units.

Figure 3.12-1 shows the average truck traffic experienced on weekdays and weekends.

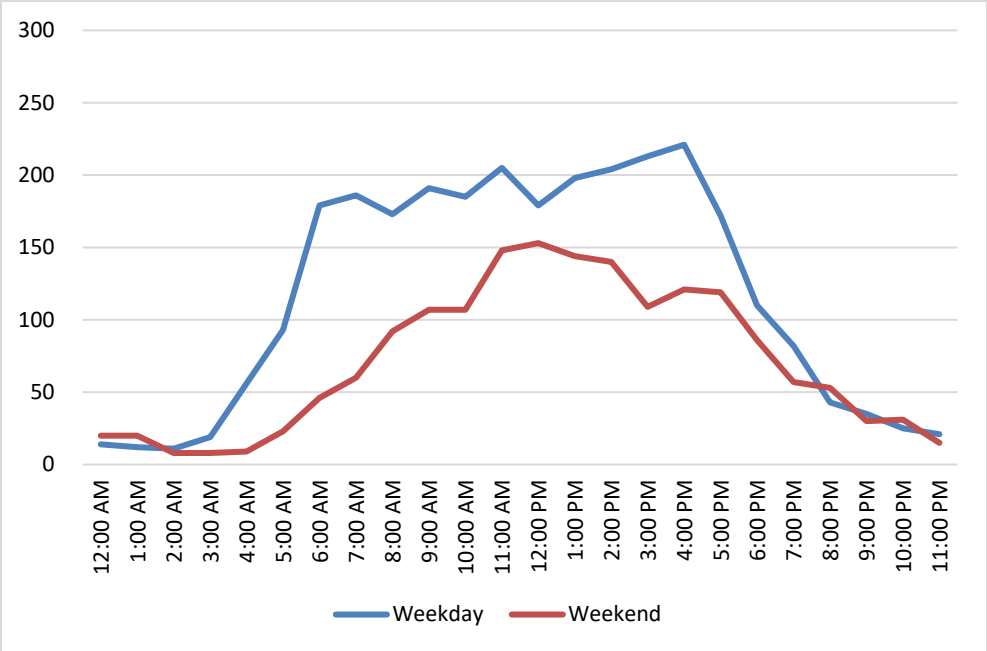

Figure 3.12-1: Average Weekday and Weekend Truck Traffic Walters Road North of SR-12

Walters Road, south of Air Base Parkway, experiences an average daily truck volume of 3,104 heavy vehicles on weekdays and 1,661 heavy vehicles on weekends. Heavy vehicle traffic peaks at 5:00 p.m. with 250 trucks on weekdays and at 1:00 p.m. on weekends with 158 trucks. Truck traffic experienced on this study segment accounts for approximately 23 percent of weekday daily volumes and 17 percent of weekend volumes. The majority of heavy vehicles experienced on this roadway are two-axle, four-tire single units and two-axle, six-tire single units. Figure 3.12-2 provides a summary of the average truck traffic experienced on Walters Road, south of Air Base Parkway.

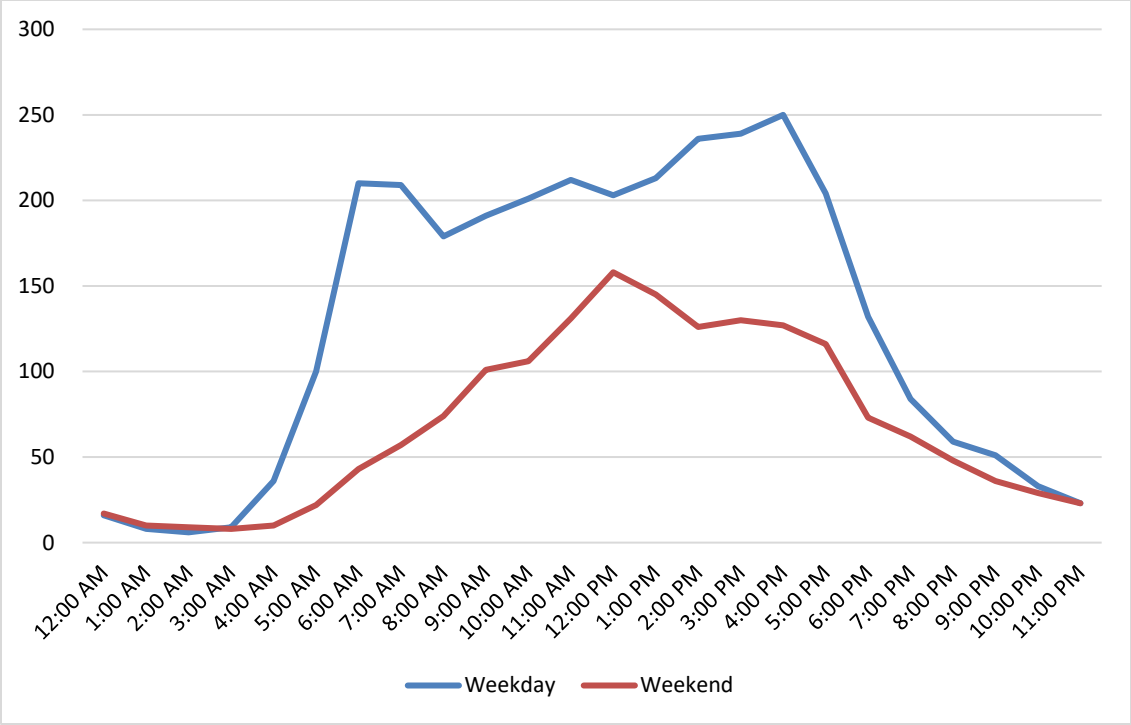

Figure 3.12-2: Average Weekday and Weekend Truck Traffic on Walters Road South of Air Base Parkway

Local Roads

Daily counts were collected on Sunset Avenue, north of SR-12, to determine the type and quantity of heavy vehicles experienced on this roadway.

On average, Sunset Avenue north of SR-12 experiences daily volumes of 1,574 trucks on weekdays and 1,204 trucks on weekends. On weekdays, truck traffic peaks at 12:00 p.m. with 122 trucks and on weekends at 12:00 p.m. with 95 trucks. Truck traffic accounts for approximately 36 percent of the total daily volume on this segment on weekdays and 26 percent on weekends. The majority of heavy vehicles that travel this roadway are two-axle, four-tire, and six-tire single units. Figure 3.12-3 summarizes the average truck traffic experienced on Sunset Avenue north of SR-12 on weekdays and weekends.

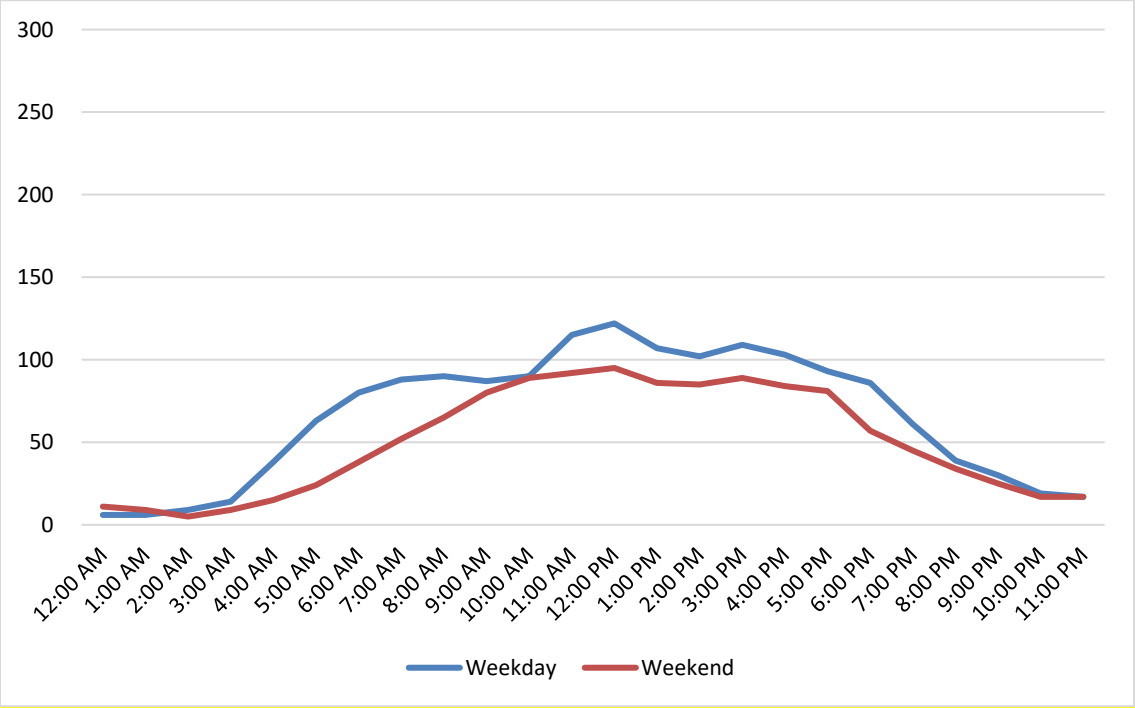

Figure 3.12-3: Average Weekday and Weekend Truck Traffic on Sunset Avenue North of SR-12

Petersen Road

The 2016 weekday morning and evening peak period counts included vehicle type classification. Based on the counts at the Walters Road/Petersen Road intersection, the heavy vehicle volumes on Petersen Road east of Walters Road were determined. Of the occupied parcels on Petersen Road east of the Walter Road intersection, the trucks on Petersen Road were either headed to or from the gas station, self-storage center, sports field, City Public Works Service Center, or Travis Air Force Base.

During the morning 2-hour peak period between 7:00 a.m. and 9:00 a.m., there were 11 trucks westbound and 39 eastbound. During a single hour within that period, there were nine westbound and 23 eastbound trucks. During the evening peak period between 4:00 p.m. and 6:00 p.m., there was a total of eight westbound truck trips and seven eastbound. During a single hour, there were, at most, four westbound trucks and six eastbound trucks on Petersen Road. During the morning and evening peak-hours, trucks represented 33 percent and 4 percent of the Petersen Road volumes, respectively.

Level of Service

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, LOS A represents free flow conditions and LOS F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

As explained in detail below in Subsection 3.12.4, Regulatory Framework, transportation analyses under the California Environmental Quality Act (CEQA) formerly focused on reductions in LOS (dropping from one category [e.g., D] to another [e.g., E or F]), but no longer do. As of early 2019, CEQA expressly forbids lead agencies from measuring adverse transportation effects in terms of "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion" (with an exception not relevant here) (Public Resources Code [PRC] § 21099(b)(2)). Even so, many public agencies still require analyses of proposed projects' potential effects on LOS, but do so under their general police power or General Plan policies, wholly independent of, and separate from, CEQA.

This section addresses LOS issues independent of CEQA, for use by the City in assessing whether and how to impose conditions of approval needed to maintain the reasonable free flow of traffic. In particular, this section addresses LOS in order to ensure that the proposed project complies with City General Plan Policy T-1.1, which provides that "[t]he City will review and condition developments to maintain Level of Service E or better during peak travel periods, as feasible" (discussed further in Subsection 3.12.4, Regulatory Framework).

Intersections

The study intersections were analyzed using methodologies published in the Highway Capacity Manual (HCM), Transportation Research Board, 2018. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle.

The ranges of delay associated with the various intersection LOS are indicated in Table 3.12-1.

Table 3.12-1: Intersection Level of Service Criteria

LOS	Two-Way Stop-Controlled	All-Way Stop-Controlled	Signalized
A	Delay of 0 to 10 seconds. Gaps in traffic are readily available for drivers exiting the minor street.	Delay of 0 to 10 seconds. Upon stopping, drivers are immediately able to proceed.	Delay of 0 to 10 seconds. Most vehicles arrive during the green phase, so do not stop at all.
B	Delay of 10 to 15 seconds. Gaps in traffic are somewhat less readily available than with LOS A, but no queueing occurs on the minor street.	Delay of 10 to 15 seconds. Drivers may wait for one or two vehicles to clear the intersection before proceeding from a stop.	Delay of 10 to 20 seconds. More vehicles stop than with LOS A, but many drivers still do not have to stop.
C	Delay of 15 to 25 seconds. Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street.	Delay of 15 to 25 seconds. Drivers will enter a queue of one or two vehicles on the same approach and wait for vehicle to clear from one or more approaches prior to entering the intersection.	Delay of 20 to 35 seconds. The number of vehicles stopping is significant, although many still pass through without stopping.
D	Delay of 25 to 35 seconds. There are fewer acceptable gaps in traffic, and drivers may enter a	Delay of 25 to 35 seconds. Queues of more than two	Delay of 35 to 55 seconds. The influence of congestion is

LOS	Two-Way Stop-Controlled	All-Way Stop-Controlled	Signalized
	queue of one or two vehicles on the side street.	vehicles are encountered on one or more approaches.	noticeable, and most vehicles have to stop.
E	Delay of 35 to 50 seconds. Few acceptable gaps in traffic are available, and longer queues may form on the side street.	Delay of 35 to 50 seconds. Longer queues are encountered on more than one approach to the intersection.	Delay of 55 to 80 seconds. Most, if not all, vehicles must stop, and drivers consider the delay excessive.
F	Delay of more than 50 seconds. Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues.	Delay of more than 50 seconds. Drivers enter long queues on all approaches.	Delay of more than 80 seconds. Vehicles may wait through more than one cycle to clear the intersection.
Source: Highway Capacity Manual (HCM) 2018.			

Analysis of Two-Way Stop-Controlled Unsignalized Intersections

The LOS for the intersections with side street stop controls, or those which are unsignalized and have one or two approaches stop-controlled, were analyzed using the "Two-Way Stop-Controlled" intersection capacity method from the HCM. This methodology determines an LOS for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection.

Analysis of All-way Stop-Controlled Unsignalized Intersections

The study intersections with stop signs on all approaches were analyzed using the "All-Way Stop-Controlled" Intersection methodology from the HCM. This methodology evaluates delay for each approach based on turning movements, opposing and conflicting traffic volumes, and the number of lanes. Average vehicle delay is computed for the intersection as a whole and is then related to a LOS.

Analysis of Signalized Intersections

The study intersections that are currently controlled by a traffic signal, or may be in the future, were evaluated using the signalized methodology from the HCM. This methodology is based on factors including traffic volumes, green time for each movement, phasing, whether or not the signals are coordinated, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology. Delays were calculated using the signal timing provided by the cities and Caltrans, as appropriate.

Road Segment Level of Service Methodology

The roadway segments analyzed as part of the study are included in the CMP. According to the Solano County CMP (2019), the LOS of segments should be reviewed by using the HCM on various segments, although the CMP also shows analysis based on volume to capacity (V/C) ratios. Through preliminary analysis, it was determined that the resulting service levels based on the HCM methodology were not matching levels previously identified in the monitoring program, and therefore a V/C ratio analysis was applied. The V/C ratio analysis is also used in several other CMP

monitoring programs in the Bay Area. The peak-hour capacities (vehicles per hour) for each segment were taken from the STA travel demand model and are summarized below:

- SR-12—5,600
- Walters Road—3,600
- Air Base Parkway—3,600

Traffic Signal Warrants

The point at which signalization should be considered as a mitigation measure was evaluated based on information contained in the *California Manual on Uniform Traffic Control Devices for Streets and Highways* (Caltrans 2018), which has been adopted by the State of California as a replacement for the Caltrans *Traffic Manual*. For the purposes of this study, Warrant 3, the peak-hour volume warrant, which determines the need for traffic control based on the highest volume hour of the day, was used as an initial indication of traffic control needs. The use of this signal warrant is common practice for planning studies since the peak-hour volumes are readily available. Other warrants, which are more generally applicable to existing traffic issues, require collection of traffic volumes for the highest four or eight hours of the day, review of the collision history, and evaluation of the system surrounding the location.

Intersection Operation

Based on the 2021 existing traffic volumes applied, the intersection LOS were calculated. The intersection LOS table includes the overall LOS for each study intersection as well as the LOS for minor approaches where the side street is stop-controlled. In these cases, the "Intersection" LOS appears first with the "Minor Approach" LOS shown below it in *italics*. All of the study intersections are operating acceptably at LOS D or better. Existing intersection LOS is summarized in Table 3.12-2 and calculation sheets are provided in Appendix I.

Table 3.12-2: Existing Peak-hour Intersection Levels of Service

Study Intersection Approach	AM Peak-hour		PM Peak-hour	
	Delay	LOS	Delay	LOS
1. Pintail Drive/Sunset Drive	27.4	C	30.6	C
2. Rio Vista Road (SR-12)/Sunset Avenue	48.0	D	50.8	D
3. Rio Vista Road (SR-12)/Snow Drive	0.8	A	0.3	A
Southbound (Snow Drive) Approach	*23.2*	*C*	*14.2*	*B*
4. Pintail Drive/Emperor Drive	13.9	B	18.2	C
5. Rio Vista Road (SR-12)/Emperor Drive–Lawler Ranch Parkway	31.2	C	28.3	C
6. Rio Vista Road (SR-12)/Woodlark Drive	1.5	A	0.5	A
Southbound (Woodlark Drive) Approach	*17.3*	*C*	*12.7*	*B*
7. Air Base Parkway/Walters Road	39.3	D	37.1	D

Study Intersection Approach	AM Peak-hour		PM Peak-hour	
	Delay	LOS	Delay	LOS
8. East Tabor Avenue/Walters Road	19.2	B	16.6	B
9. Bella Vista Drive/Walters Road	20.3	C	15.8	B
10. Pintail Drive/Walters Road	9.8	A	8.9	A
11. Mammoth Way–Montebello Drive/Walters Road	13.2	B	10.4	B
12. Petersen Road/Walters Road	5.8	A	8.0	A
13. Main Driveway/Walters Road	6.4	A	15.9	B
14. Southern Driveway/Walters Road	0.2	A	0.6	A
Eastbound (Southern Driveway) Approach	*10.9*	*B*	*11.9*	*B*
15. Rio Vista Road (SR-12)/Walters Road–Lawler Ranch	25.1	C	28.1	C

Notes:
LOS = Level of Service
- Delay is measured in average seconds per vehicle.
- Results for minor approaches to two-way stop-controlled intersections are indicated in italics.
- AM and PM peak periods are between 7:00 a.m.-9:00 a.m. and 4:00-6:00 p.m., respectively.

Source: W-Trans 2021.

Intersection Queueing

The 95th percentile queueing was reviewed for dedicated turn lane at each study intersection. The 95th percentile queue represents the maximum queue length that would be experienced 95 percent of the time. These lengths were determined using methodologies from the HCM. At several intersections, the available storage is currently at capacity or exceeded for some movements. These existing queues are summarized in Table 3.12-3 and are included in Appendix I as part of the intersection service level output.

Table 3.12-3: Peak-hour 95th Percentile Queues

Intersection	Storage Length (ft)/ Number of Lanes	Existing Queue (ft)	
		AM	PM
1. Pintail Drive/Sunset Avenue			
NB Left-Turn Lane	105/1	46	36
SB Left-Turn Lane	105/1	**177**	**233**
EB Left-Turn Lane	105/1	53	61
WB Left-Turn Lane	75/1	**77**	**96**
2. Rio Vista Road (SR-12)/Sunset Avenue			
NB Left-Turn Lane	125/1	**297**	**133**
SB Left-Turn Lane	150/2	**198**	**350**
SB Right-Turn Lane	150/2	47	44

Intersection	Storage Length (ft)/ Number of Lanes	Existing Queue (ft)	
		AM	PM
EB Left-Turn Lane	500/2	162	335
EB Right-Turn Lane	275/1	54	90
WB Left-Turn Lane	250/1	67	109
WB Right-Turn Lane	400/1	42	56
3. Rio Vista Road (SR-12)/Snow Drive			
WB Right-Turn Lane	250/1	0	0
4. Pintail Drive/Emperor Drive			
5. Rio Vista Road (SR-12)/Emperor Drive–Lawler Ranch Parkway			
NB Left-Turn Lane	215/1	167	142
NB Right-Turn Lane	215/1	0	0
SB Left-Turn Lane	125/1	40	45
EB Left-Turn Lane	425/1	254	613
EB Right-Turn Lane	255/1	0	74
WB Left-Turn Lane	200/1	134	96
WB Right-Turn Lane	230/1	0	0
6. Rio Vista Road (SR-12)/Woodlark Drive			
WB Right-Turn Lane	260/1	0	0
7. Air Base Parkway/Walters Road			
NB Right-Turn Lane	325/1	**478**	**210**
SB Left-Turn Lane	150/1	18	22
SB Right-Turn Lane	140/1	**0**	**0**
EB Left-Turn Lane	275/1	143	143
EB Right-Turn Lane	315/1	61	78
WB Left-Turn Lane	400/2	181	334
WB Right-Turn Lane	180/1	0	0
8. East Tabor Avenue/Walters Road			
NB Left-Turn Lane	180/1	**223**	138
SB Left-Turn Lane	270/1	62	91
EB Left-Turn Lane	95/2	**157**	**103**
EB Shared Through-Right-Turn Lane	95/1	46	70
WB Left-Turn Lane	125/1	16	14
9. Bella Vista Drive/Walters Road			
NB Left-Turn Lane	135/1	11	15

Intersection	Storage Length (ft)/ Number of Lanes	Existing Queue (ft)	
		AM	PM
SB Left-Turn Lane	105/1	33	65
WB Right-Turn Lane	90/1	26	0
10. Pintail Drive/Walters Road			
NB Left-Turn Lane	130/1	67	56
EB Right-Turn Lane	150/1	21	26
11. Mammoth Way–Montebello Drive/Walters Road			
NB Left-Turn Lane	100/1	22	32
SB Left-Turn Lane	120/1	48	63
EB Right-Turn Lane	50/1	0	0
WB Right-Turn Lane	125/1	23	7
12. Petersen Road/Walters Road			
NB Left-Turn Lane	85/1	18	29
NB Right-Turn Lane	185/1	24	30
SB Left-Turn Lane	100/1	29	14
SB Right-Turn Lane	75/1	3	0
EB Right-Turn Lane	180/1	0	0
WB Left-Turn Lane	115/1	34	80
WB Right-Turn Lane	200/1	0	1
13. Main Driveway/Walters Road			
NB Left-Turn Lane	200/1	55	169
14. Minor Driveway/Walters Road			
15. Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway			
NB Left-Turn Lane	175/1.5	94	60
NB Right-Turn Lane	90/1	0	0
SB Left-Turn Lane	105/1.5	**134**	**253**
SB Right-Turn Lane	190/1.5	55	55
EB Left-Turn Lane	390/2	173	**546**
EB Right-Turn Lane	275/1	0	40
WB Left-Turn Lane	215/1	11	15
WB Right-Turn Lane	300/1	62	67

Notes:
All distances are measured in feet; NB = northbound; SB = southbound; EB = eastbound
WB = westbound; **Bold text** = deficient operation
Source: W-Trans 2021.

CMP Road Segment Level of Service

Under Existing conditions, all of the study road segments are operating acceptably during both peak periods. The segment LOS results are summarized in Table 3.12-4 and copies of the calculations are provided in Appendix I.

Table 3.12-4: Existing Peak-hour Road Segment Levels of Service

Road Segment Limits *Direction*	AM Peak-hour		PM Peak-hour	
	V/C	LOS	V/C	LOS
Rio Vista Road (SR-12)				
1. Sunset Avenue to Emperor Drive–Lawler Ranch Parkway				
Eastbound	*0.27*	*A*	*0.64*	*C*
Westbound	*0.50*	*C*	*0.39*	*B*
2. Emperor Drive–Lawler Ranch Parkway to Walters Road–Lawler Ranch Parkway				
Eastbound	*0.21*	*A*	*0.48*	*C*
Westbound	*0.41*	*B*	*0.32*	*B*
Walters Road—Suisun City				
3. Petersen Road to Montebello Drive				
Northbound	*0.28*	*A*	*0.47*	*A*
Southbound	*0.33*	*A*	*0.41*	*A*
4. Montebello Drive to Pintail Drive				
Northbound	*0.31*	*A*	*0.40*	*A*
Southbound	*0.28*	*A*	*0.40*	*A*
5. Pintail Drive to Bella Vista Drive				
Northbound	*0.32*	*A*	*0.43*	*A*
Southbound	*0.28*	*A*	*0.43*	*A*
Walters Road—Fairfield				
6. East Tabor Avenue to Air Base Parkway				
Northbound	*0.63*	*B*	*0.49*	*A*
Southbound	*0.36*	*A*	*0.61*	*B*
Air Base Parkway				
7. Iters Road to Peabody Road				
Eastbound	*0.58*	*A*	*0.40*	*A*
Westbound	*0.24*	*A*	*0.53*	*A*

Notes:
V/C = volume to capacity ratio; LOS = Level of Service
Source: W-Trans 2021.

3.12.4 - Regulatory Framework

State

Senate Bill 743

On September 27, 2013, Senate Bill (SB) 743 was signed into law, supporting previous climate-focused and transportation legislation, including the Sustainable Communities and Climate Protection Act of 2008 (SB 375) and the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32). SB 743 also supports implementation of the Complete Streets Act (AB 1358), which requires local governments to plan for a balanced, multimodal transportation network that meets the needs of all users. To further the State's commitment to the goals of SB 375, AB 32 and AB 1358, SB 743 added Chapter 2.7, Modernization of Transportation Analysis for Transit-Oriented Infill Projects, to Division 13 (Section 21099) of the Public Resources Code.

SB 743 introduced fundamental changes in the assessment of transportation impacts through the CEQA process. These changes include the elimination of auto delay (measured as LOS) as a basis for determining significant transportation impacts. SB 743 included amendments that revised the definition of "infill opportunity zones" to allow cities and counties to opt out of traditional LOS standards established by CMPs and required the California Governor's Office of Planning and Research (OPR) to update the CEQA Guidelines and establish "criteria for determining the significance of transportation impacts of projects within transit priority areas." As part of the new CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses."

SB 743 led to the promulgation of CEQA Guidelines Section 15064.3, which came into effect in early 2019. Subdivision (a) of that section provides that "[g]enerally, vehicle miles traveled [VMT] is the most appropriate measure of transportation impacts. For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision (b)(2) . . . (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact."[1]

CEQA Guidelines Section 15064.4, subdivision (c), stated that the new section applied prospectively only, and required all lead agencies to begin to comply on July 1, 2020.

In December 2018, OPR released a final advisory to guide lead agencies in implementing SB 743, the "Technical Advisory on Evaluating Transportation Impacts in CEQA." Key guidance includes:

- VMT is the most appropriate metric to evaluate a project's transportation impact under CEQA.

[1] Subdivision (b)(2) of CEQA Guidelines Section 15064.3 ("transportation projects") provides that "[t]ransportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in [CEQA Guidelines] Section 15152."

- Tour- and trip-based travel models are recommended for estimating VMT, but local agencies have the authority to select the tools they use.
- The recommended threshold of significance for residential and office projects is VMT per capita or per employee that is 15 percent below the city or regional average (whichever is applied). In other words, a project that generates VMT per employee that is more than 85 percent of the regional VMT per employee could result in a significant impact. This threshold is in line with statewide GHG emission reduction targets.
- Lead agencies have the discretion to set or apply their own significance thresholds in lieu of those recommended in the advisory, provided they are based on substantial evidence.
- Cities and counties still have the ability to use metrics such as LOS for other plans, studies, or network monitoring. However, LOS and similar metrics cannot constitute the sole basis for CEQA impacts.

Consistent with SB 743 and CEQA Guidelines Section 15064.3, subdivision (b), Suisun City General Plan Policy Objective T-3 states that "[v]ehicle miles traveled (VMT) by Suisun City residents and to Suisun City destinations should increase at a lower rate than that of population and employment growth." Through Resolution 20-122, adopted on September 15, 2020, the Suisun City Council adopted VMT thresholds. These thresholds are based on a July 10, 2020 Technical Memorandum entitled "City of Suisun City SB 743 Implementation Summary of Findings and Recommendations for VMT-Based CEQA Thresholds."

The following threshold was adopted for industrial projects that "do not qualify for any of the screening opportunities presented in the Technical Advisory":

1. The project would cause a significant transportation impact if it would generate an average home-based work VMT per employee that is greater than 85 percent of the citywide average.
2. If the above threshold is exceeded, the project's VMT impact could still be found to be less than significant if it did not cause the total Citywide VMT to increase.

The above calculations will be performed using the City of Fairfield's travel demand model for both base year and cumulative conditions.

California Department of Transportation (Caltrans)

The Caltrans *Vehicle Miles Traveled-Focused Transportation Impact Study Guide* (TISG), published in May 2020, replaced the *Guide for the Preparation of Traffic Impact Studies*, 2002. As indicated in the TISG, Caltrans is transitioning away from requesting LOS or other vehicle operations analyses of land use projects and will instead focus on VMT. Adequacy of operation was therefore evaluated using Suisun City's standards.

Regional Regulations

Solano County Congestion Management Program

The CMP is a mobility monitoring and planning tool for California counties that contain an urbanized area with a population of 200,000 or more. The most recently adopted 2019 program contains general goals to maintain mobility on Solano County's streets and highways and ensure that the Solano County transportation system operates effectively as part of the larger Bay Area and Northern California transportation systems.

Local Regulations

City of Suisun City

General Plan

The Suisun City General Plan sets forth the following goals, objectives, and policies relevant to transportation:

Goal T-1 Provide an efficient, safe transportation system that is free of barriers to travel by all segments of Suisun City's population.

Objective T-1 Develop, maintain, and enforce transportation performance standards and public improvement standards that implement the 2035 General Plan.

Policies

Policy T-1.1 The City will review and condition developments to maintain Level of Service E or better during peak travel periods, as feasible.

Policy T-1.3 The City's Level of Service policy will be implemented in consideration of the need for pedestrian and bicycle access, the need for emergency vehicle access, and policies designed to reduce Vehicle Miles Traveled.

Policy T-1.4 The City will not require analysis of direct impacts to vehicular Level of Service for the purpose of California Environmental Quality Act compliance. The City acknowledges that Caltrans and other transportation agencies may require such analysis.

Policy T-1.5 The City recognizes the transportation network as an integrated component of Suisun City's urban fabric and not only as a system for moving people and goods.

Policy T-1.6 The City will design and operate streets and intersections to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities.

Policy T-1.7 The City will maintain a traffic impact fee program designed to collect fair share contributions from new developments to construct off-site vehicular, bicycle, and pedestrian improvements.

Policy T-1.8 The City will consult with other agencies, such as the Solano Transportation Authority, Solano County, Caltrans, and the Metropolitan Transportation Commission on assessing travel demand impacts to facilities managed by other agencies. The City will collaborate as a part of a coordinated regional program on collection of impact fees for regional transportation improvements.

Policy T-1.9 The City will require new roads, intersections, and access points to be designed in accordance with City standards and avoid introducing any hazardous conditions.

Goal T-2 Provide a well-connected transportation system that offers residents and visitors a choice of routes to reach their destinations.

Policies

Policy T-2.3 New developments shall be highly connected internally and connected with adjacent developed areas.

Policy T-2.5 The City prefers direct connections that allow cars, bikes, and pedestrian through traffic over "doglegs" or "T" intersections.

Policy T-2.7 The City will support improvements to regional connectivity, including connections to Fairfield, SR-12, Jepson Parkway, and I-80 that reduce trip lengths and provide redundant routes for emergency responders.

Policy T-2.9 New commercial developments on parcels of greater than 20 acres in land area should divide larger blocks with small private through streets.

Goal T-3 Manage travel demand in order to reduce up-front and ongoing cost of transportation infrastructure, enhance local mobility, improve air quality, and improve the local quality of life.

Objective T-3 Vehicle Miles Traveled (VMT) by Suisun City residents and to Suisun City destinations should increase at a lower rate than that of population and employment growth.

Policies

Policy T-3.1 The City will collaborate with other local, regional, and State agencies, as well as employers to encourage carpooling, carpool parking, flexible work schedules, ride sharing, and other strategies to reduce commute period travel demand.

Policy T-3.2 The City will encourage new developments and public facility investments designed to minimize vehicle trips and Vehicle Miles Traveled.

Policy T-3.6 New developments that would accommodate 100 full- or part-time employees or more are required to incorporate feasible travel demand management strategies, such as contributions to transit/bike/pedestrian improvements; flex time and telecommuting; a carpool program; parking management, cash out, and pricing; or other measures, as appropriate, to reduce travel demand.

Policy T-3.7 The City will support regional goals to reduce per capita GHG [greenhouse gas] emissions reductions from automobiles and light-duty trucks in a way that also promotes 2035 General Plan objectives.

Goal T-4 Provide for movement of raw materials and shipment of goods throughout the City and surrounding region.

Objective T-4 Increase goods movement and economic activity based on Suisun City's road, rail, and water connections, while also minimizing the negative effects of this transportation on the City's residents and businesses.

Policies

Policy T-4.1 The City will support goods movement and collaborate with regional agencies and private parties to maintain and enhance goods movement corridors serving the City.

Policy T-4.2 The City will manage truck traffic, freight rail, and hazardous materials movements in a way that is protective of the public and environmental health, in collaboration with Caltrans, Solano County, the California Highway Patrol, the California Public Utilities Commission, and the Union Pacific Railroad.

Policy T-4.3 The City will restrict truck traffic to designated routes, which include SR-12, Main Street, Cordelia Street, Railroad Avenue, Lotz Way, Walters Road, Petersen Road, and Civic Center Boulevard. Trucks may go by direct route to and from restricted streets, where required for the purpose of making pickups and deliveries of goods, but are otherwise restricted to designated routes.

Goal T-6 Maintain a multimodal transportation system for the safe and efficient movement of automobiles and trucks, pedestrians, bicyclists, and public transit users.

Objective T-6 Increase the share of work and non-work trips by Suisun City residents and to Suisun City destinations for walking (by 1 percent), bicycling (by 0.3 percent), and public transit (by 2.6 percent) compared to that documented by the 2000 U.S. Census and ABAG.

Policies

Policy T-6.1 The City will facilitate construction and maintenance of an accessible, safe, pleasant, convenient, and integrated bicycle and pedestrian system that connects local destinations and surrounding communities. The City will support development of a safe and accessible trail network connected to the on-street bicycle and transportation system that provides transportation and recreational opportunities for Suisun City residents and employees.

Policy T-6.2 The City will require design, construction, operation, and maintenance of "complete streets" that provide safe and convenient access and travel for pedestrians, bicyclists, motorists, and transit users of all ages and abilities.

Policy T-6.6 Bicycle parking shall be provided near destination land uses, such as retail, commercial and public services, parks, schools, and transit stops.

Policy T-6.9 The City will encourage construction of transit amenities, such as benches, information systems, shelters, and bike racks near transit stops.

Policy T-6.12 New building frontages shall be oriented to pedestrians. Primary pedestrian entries to nonresidential buildings should be from the sidewalk, not from parking areas.

Policy T-6.13 New developments shall provide pathways that link to sidewalks, trails, streets, and adjacent transit stops.

Goal T-7 Maintain an adequate supply of parking and avoid oversupply of parking that would unnecessarily increase urban water runoff, require expensive construction and maintenance, and discourage alternatives to vehicular travel.

Objective T-7 Reduce the proportion of parking spaces that are unused during the daytime, evenings, or weekends.

Policies

Policy T-7.1 Parking shall be located and designed to facilitate convenient pedestrian access to and from buildings, trails, sidewalks, and transit stops.

Policy T-7.11 New developments that require loading areas shall provide these facilities in a way that does not conflict with pedestrian, bicycle, transit, or automobile circulation.

City of Fairfield

General Plan

The project study area includes intersections and roadways in the City of Fairfield. The Suisun City General Plan sets forth the following goals, objectives, and policies relevant to transportation:

Objective CI 1 Establish a circulation system that is consistent with the land use patterns of the City.

Policy CI 1.2 The City's mix of land uses, development patterns, and densities shall be conducive to alternative modes of transportation, such as walking, transit, paratransit and bicycles. Pedestrian travel shall be encouraged through the location of employment centers and commercial development within close proximity of residential areas. In particular, new development in infill areas, such as Priority Development Areas, should support alternative transportation.

Policies

Policy CI 1.3 Acquire the ultimate right-of-way for streets during early stages of development. Include adequate right-of-way for sidewalks, bicycle lanes, and/or multiuse paths identified in the Circulation Element and/or master plans.

Policy CI 1.6 Public Works staff shall incorporate appropriate traffic calming and Complete Streets considerations during design of City capital and maintenance projects.

Objective CI 2 Achieve a coordinated regional and local transportation system that minimizes traffic congestion and efficiently serves users.

Policies

Policy CI 2.1 Local circulation system improvements shall be generally consistent with the goals and objectives stated in the Metropolitan Transportation Commission (MTC) Regional Transportation Plan.

Policy CI 2.4 Work with Caltrans and adjacent jurisdictions to improve the operational performance of I-80, I-680 and State Route 12 as regional facilities.

Policy CI 2.6 Cooperate with adjacent jurisdictions to plan and construct a loop system of arterial streets and roads so that traffic can flow around the periphery of the city and not cause congestion in central Fairfield.

Policy CI 2.7 Cooperate with adjacent jurisdictions to improve the principal arterial gateways to Fairfield to facilitate the movement of traffic flowing into and out of the City. Improvements shall be consistent with adopted design plans, including the Urban Design Element, the Urban Design Plan, the Fairfield Gateways Implementation Plan, and the West Texas Street Master Plan.

Policy CI 2.8 Continue to support and participate in efforts led by the Solano Transportation Authority and Caltrans to evaluate and mitigate traffic flowing between cities in Solano County.

Objective CI 3 Street and highway improvements shall provide adequate and appropriate Levels of Service for all streets in Fairfield.

Policies

Policy CI 3.1 PM peak-hour Levels of Service (LOS) shall generally meet the following standards:

- Arterial Streets: LOS D or better
- Collector Streets: LOS C or better
- Local Streets: LOS B or better

These standards may be modified where public health, safety, and welfare requirements warrant. Intersections may be permitted to maintain lower Levels of Service if urban design, community character, pedestrian circulation, access for bicyclists, or other goals limit necessary road or street improvements. Select arterial intersections may be permitted to maintain a Level of Service of "E" where the estimated construction cost of required improvements is significant relative to the expected reduction in congestion.

Policy CI 3.2 Prioritize street improvements based on current and forecasted service levels. Roadways experiencing or forecast to experience worse than applicable Level of Service conditions (unstable or forced traffic flows) shall require improvements, unless other public health, safety, or welfare factors determine otherwise.

Policy CI 3.3 Reduce traffic congestion at key intersections throughout the City.

Program CI 3.3 A

Make improvements to intersections experiencing conditions worse than the applicable Level of Service standard by adding appropriate turning lanes to congested approaches, widening intersection approaches, or modifying signal timing at intersections and coordinating with other signals, as appropriate, unless other public health, safety, or welfare factors determine otherwise. Such factors shall include impacts on pedestrian and bicycling circulation and safety, including access to major activity centers and community facilities.

3.12.5 - Methodology

Traffic operational effects from the proposed project were evaluated for the near-term year 2023 and cumulative year 2035. The resulting change in delay as a result of the proposed project was identified on the basis of each jurisdiction's operational service level goal and thresholds of significance for each jurisdiction.

Trip Generation

The trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 10th Edition, 2017. After a review of several land use categories and their respective trip rates, it was determined that the trip generation rates for "High-Cube Fulfillment Center Warehouse" (ITE LU No. 155) most closely forecasts the anticipated number of trips for the proposed project. For the High-Cube Fulfillment Center Warehouse Land Use, ITE has distinct trip generation rates for "Sort," "Non-Sort," and a combination of the two. The "Sort" facility handles smaller items and requires extensive sorting, often by manual means. For a "Non-Sort" facility, the items are often larger and primarily processed via machinery. Based on the description of the proposed project and the projected number of employees, the "Non-Sort" trip rate was deemed most applicable and therefore applied.

The proposed project is expected to generate an average of 3,726 trips per day, including 309 trips during the AM peak-hour and 329 during the PM peak-hour. Of these trips, the proposed project is expected to generate an average of 473 daily truck trips, including 41 during the morning peak-hour and 21 during the evening peak-hour. These new trips represent the increase in traffic associated with the proposed project compared to existing volumes. The expected trip generation potential for the proposed project is indicated in Table 3.12-5 and the site plan is shown in Exhibit 3.12-5.

Table 3.12-5: Trip Generation Summary

Land Use	ITE LU Code	Size (ksf)	Weekday		AM Peak-hour				PM Peak-hour			
			Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
High-cube Warehouse (Non-Sort)	155	2058.7	1.81	3,726	0.15	309	250	59	0.16	329	128	201
Trips by Vehicle Type												
Trucks	*–*	*–*	*0.23*	*473*	*0.02*	*41*	*20*	*21*	*0.01*	*21*	*9*	*12*
Passenger Car	*–*	*–*	*-*	*3,253*	*–*	*268*	*230*	*38*	*–*	*308*	*119*	*189*
		Total		**3,726**	**–**	**309**	**250**	**59**	**–**	**329**	**128**	**201**

Notes:
ITE = Institute of Transportation Engineers
LU = Land Use
Source: Institute of Transportation Engineers (ITE). Trip Generation Manual, 10th Edition. 2017.

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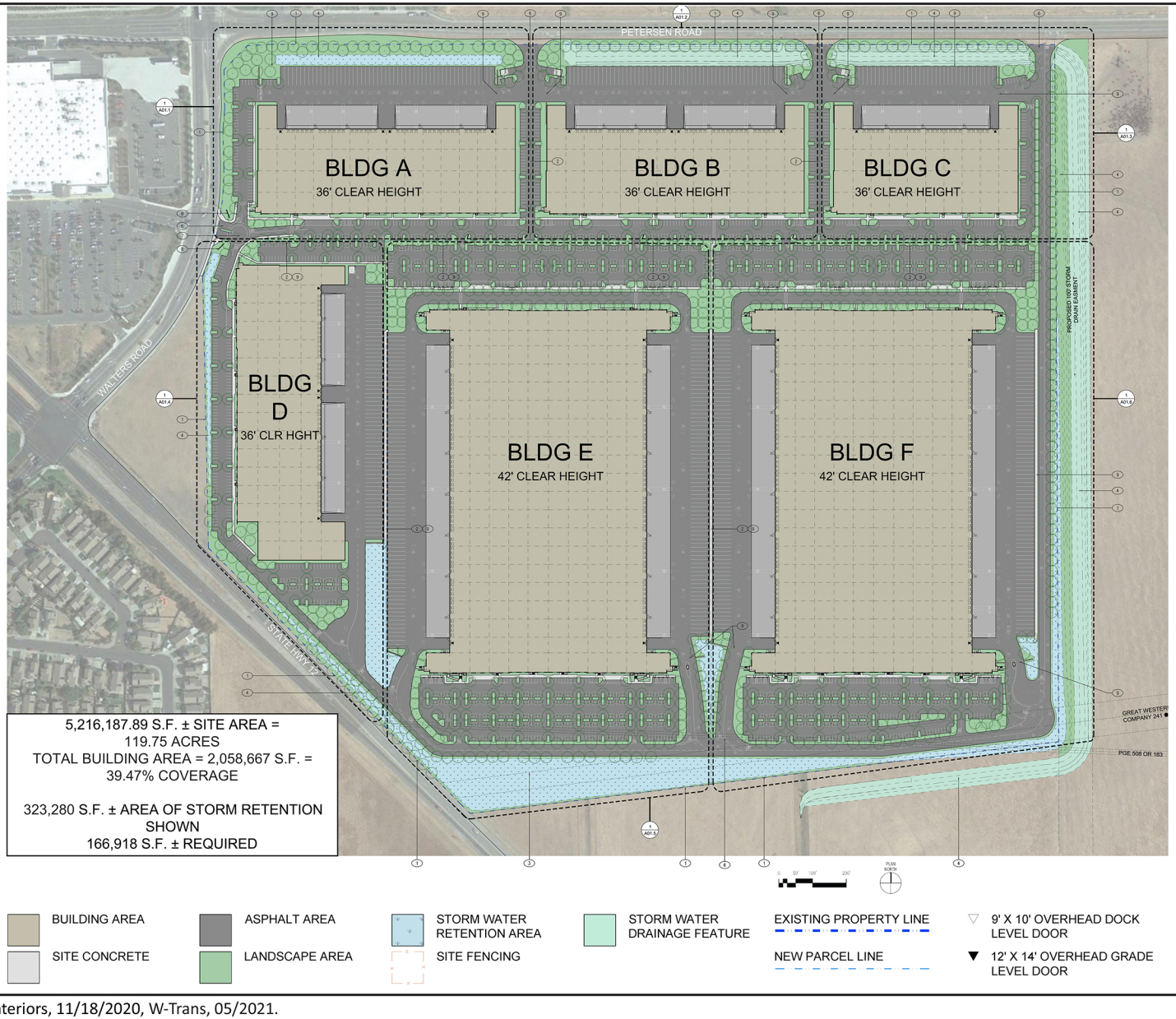

Source: RMW Architecture Interiors, 11/18/2020, W-Trans, 05/2021.

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Exhibit 3.12-5
Site Plan

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The estimated average trip generation for a weekday was compared to the anticipated 2,059 employees for the proposed project. For industrial land uses the operation can be 24 hours, 7 days a week, across multiple shifts, and not all employees would be on-site Monday through Friday. Considering this, the anticipated number of daily trips for the site appears realistic for the proposed project as described. Since industrial land uses often have several shifts throughout the day, and the shift turnover is often off-peak, the morning and evening peak-hour trips also appear to be a realistic projection for the proposed project.

To incorporate the truck trips into the analysis, two methods were applied: one for the roadway segment analysis and one for the intersection analysis. For the roadway segment analysis truck trips were converted to Passenger Car Equivalents (PCEs) using a factor that takes grade and terrain into consideration. These PCEs were added to the total roadway volume. For the intersection analysis the truck trips were added to the network similar to other vehicle trips, but the percentage of heavy vehicles on the road was also factored into the analysis to reflect the additional effects of truck trips.

Truck Trips

To account for the effects of new truck trips to the network, the projected truck volumes were converted to PCE assuming two automobiles are equivalent to one large truck. This is consistent with the HCM methodology for signalized intersections and was included in the analysis.

Modeling Shift Changes

To model the potential increase in demand on the adjacent street network during shift changes, an approximate worst-case scenario shift change was modeled for Walters Road between Petersen Road and SR-12 under the near-term analysis year. For the purpose of the analysis, it was assumed that all operations at the project site would occur over the same 24/7 schedule with primarily full-time employment. For the 2,059 employees this resulted in slightly more than four work shifts, or 515 employees per shift. For the purpose of modeling the shift change, there would be 515 inbound and 515 outbound trips during the same hour. While it is possible that shift changes would occur outside of the typical traffic AM and PM peak-hours, to be conservative the peak-hour roadway volumes were used in the analysis. Since it is understood that this is a conservative approach, the operational analysis represents a potential, but not anticipated, “worst-case” scenario.

Project Trip Distribution

The assumed trip distribution was differentiated as either truck or passenger vehicle trip. The trip distribution assumption for truck trips is based on the applicant’s understanding of the designated truck routes. The trip distribution of the employee trips is based on census data for the City of Suisun City. The proposed percentages are summarized in Table 3.12-6.

Table 3.12-6: Trip Distribution Assumptions

Route	Trucks	Employment
East on SR-12	30%	5%
West on SR-12 to I-80 West	50%	28%
West on SR-12 to I-80 East	–	12%
Fairfield	–	25%
Vacaville	–	11%
North on Jepson Parkway or Peabody Road	20%	–
Suisun City–Pintail Drive	–	8%
Suisun City–Lawler Ranch Parkway	–	4%
Suisun City–Bell Vista Drive/Montebello Drive	–	4%
Suisun City/Fairfield–Tabor Avenue	–	1%
Suisun City–Marina Boulevard	–	2%
Total	**100%**	**100%**
Source: W-Trans 2021.		

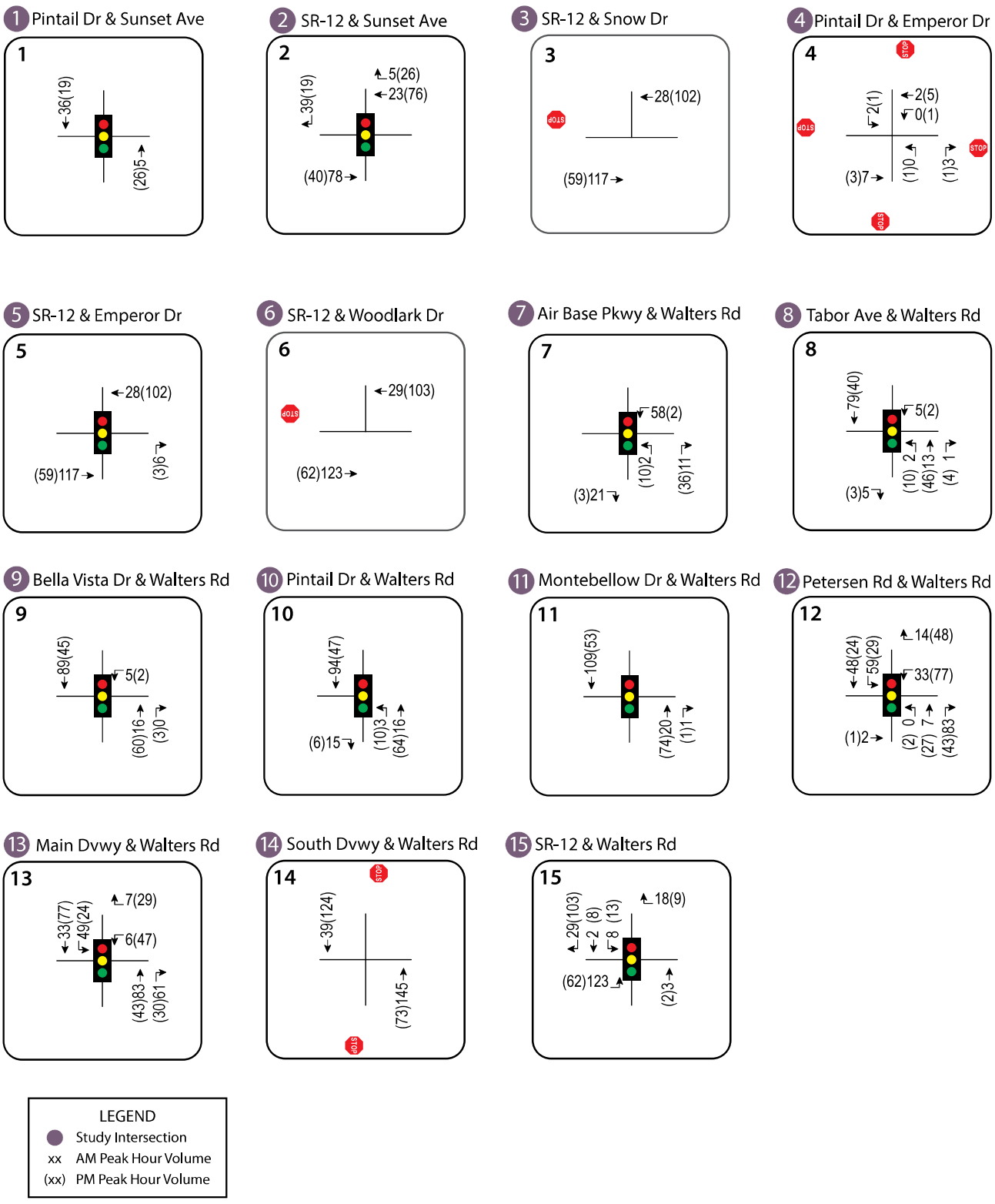
Truck Trips

Truck trips were assigned only to trucking routes (i.e., SR-12, Walters Road, Air Base Parkway, Peabody Road, Vanden Road, etc.). Under the near-term analysis year, the truck trips were routed to the north on the completed portion of the Jepson Parkway. Under the cumulative analysis year, it was assumed that the Jepson Parkway was extended to the Air Base Parkway intersection.

Employee Trips

Based on the trip distribution assumptions, 45 percent of the employees are assumed to commute to the site via SR-12 and I-80. It is assumed that 19 percent of the employee trips would be from the various areas of Suisun City and the remaining would be from Vacaville or Fairfield. These local trips would be routed on the local streets as well as SR-12 depending on the shortest trip length by distance and time.

Using the anticipated project trips generated from the site with the projected origin/destinations, the trips were routed through the study area. The resulting project volumes at the study intersections and roadways are shown in Exhibit 3.12-6 and Exhibit 3.12-7.



Source: W-Trans, 05/2021.

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Exhibit 3.12-6
Project Intersection Traffic Volumes

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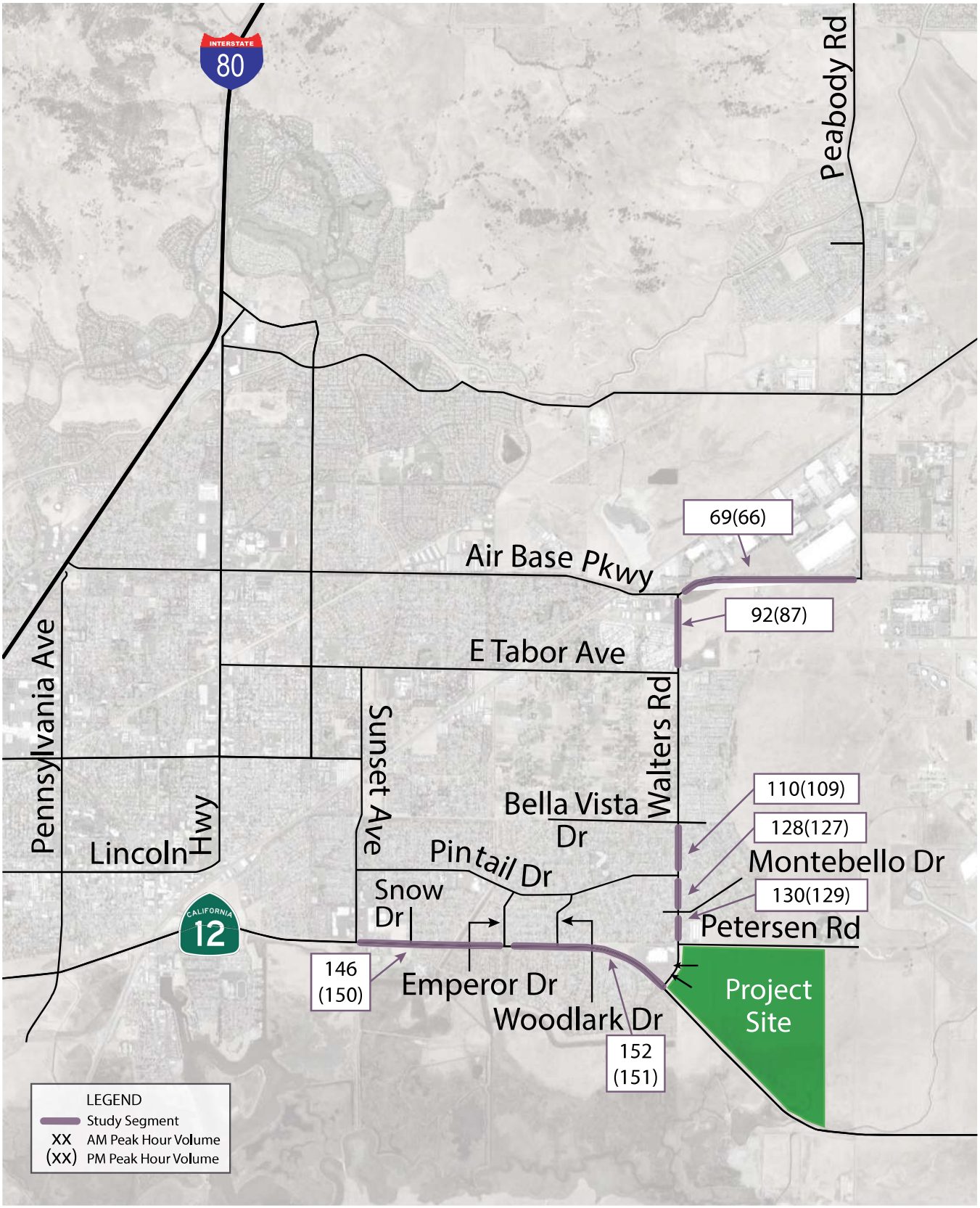

Source: W-Trans, 05/2021.

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Exhibit 3.12-7
Project Segment Traffic Volumes

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3.12.6 - Thresholds of Significance

Appendix G to the CEQA Guidelines is a sample Initial Study Checklist that includes questions for determining whether impacts related to transportation are significant. These questions reflect the input of planning and environmental professionals at the OPR and the California Natural Resources Agency, based on input from stakeholder groups and experts in various other governmental agencies, nonprofits, and leading environmental consulting firms. As a result, many lead agencies derive their significance criteria from the questions posed in Appendix G. The City has chosen to do so for this proposed project. Thus, the proposed project would have a significant effect related to transportation if it would:

a) Conflict with a program plan, ordinance or policy of the circulation system, including transit, roadway, bicycle and pedestrian facilities;

b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b);

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or

d) Result in inadequate emergency access.

Based on these questions as well as professional judgment, Caltrans' policies, and policies found in the Solano County CMP and the City's General Plan, the City has concluded that the proposed project would create a significant impact if it triggers any of the more specific thresholds described below.

Vehicle Miles Traveled

The City of Suisun City's standards for VMT were adopted by the City Council on September 15, 2020, in Resolution 20-122 based on the July 10, 2020 Technical Memorandum entitled "Suisun City SB 743 Implementation Summary of Findings and Recommendations for VMT-Based CEQA Thresholds." These documents set the threshold for a new employment project as 15 percent below the existing citywide baselines. As published in that memo, the average 2020 VMT per employee for home-based work trips is 14.8 miles. For 2035, the average VMT was projected to be 14.1 miles. The citywide average VMT has since been recalculated using the latest Cumulative model which includes new projects added after the SB 743 VMT Guidelines were developed. The updated citywide average VMT per employee projected for 2035 is 13.7 miles. Since the established threshold is 15 percent less than the base average, the proposed project would have a VMT impact if the 2020 VMT per employee is more than 12.6 miles and the 2035 VMT per employee is more than 11.7 miles.

Operational Analysis

Each jurisdiction has established Level of Service thresholds; however, with the shift from LOS to VMT for purposes of determining CEQA impact significance, operational goals are now addressed in such a way so as not to increase VMT. Types of improvements that would be expected to increase VMT would be those that increase capacity and induce travel, like installation of traffic lanes for through movements. Improvements that would not be expected to induce travel but would operationally improve service at an intersection would include improved signal timing or adding a

turn lane. Therefore, where the proposed project is expected to result in operation below a jurisdiction's established goal or policy, mitigation measures that would increase VMT would not be recommended. Where the operational deficiency could only be mitigated with increased capacity, to the extent feasible, mitigation measures are presented to improve LOS, although these measures are not required by CEQA (see Subsection 3.12.4, Regulatory Framework).

Congestion Management Program

The most recent CMP acknowledges that there is a shift from LOS to VMT as the metric for determining transportation impacts under CEQA. Since the updated program incorporating VMT thresholds has yet to be published, the VMT threshold for the City of Suisun City was applied; however, operationally, the goals set forth in 2019 were applied.

Within the project study area there are three roadways, one intersection, and one State Route in the CMP system. For the purpose of this operational assessment, a deficiency is established if the proposed project causes the facility to exceed CMP standards, as follows:

- Walters Road/Air Base Parkway: LOS E
- SR-12 in Suisun City: LOS F
- Walters Road between Petersen Road and Bella Vista Drive: LOS E
- Walters Road between Air Base Parkway and the Suisun City and Fairfield city limits: LOS E
- Air Base Parkway between Walters Road and Peabody Road: LOS E

For the purpose of this analysis, the proposed project would result in an operational deficiency, although not a CEQA impact (see Subsection 3.12.4, Regulatory Framework) if the project causes the CMP facility to fall below the acceptable service level, or, if the facility is already operating at an unacceptable LOS, or at LOS F, if the project would result in an increase in the V/C of 0.1.

California Department of Transportation

As indicated in Caltrans' May 2020 TISG, Caltrans is transitioning away from requesting LOS or other vehicle operations analyses of land use projects and will instead focus on VMT. Adequacy of SR-12 operation was therefore evaluated using the City of Suisun's standards.

City of Suisun City

The City of Suisun City strives to maintain LOS E facilities in the City during peak travel periods but allows a greater level of congestion where maintaining LOS E is not feasible.

City of Fairfield

Objective C1.3 of the City of Fairfield's General Plan Circulation Element requires intersections to maintain a peak-hour LOS of D or better for arterial intersections, C or better for collector intersections, and B or better for local intersections unless other public health, safety, or welfare factors determine otherwise. LOS E may be permitted where the estimated construction cost of required improvements is significant relative to the expected reduction in congestion. The study intersections located in the City of Fairfield are on arterials, and, therefore, the acceptable service level standard is LOS D.

Summary of Operational Goals

For the operational analysis of LOS, the LOS goal for intersections is summarized in Table 3.12-7.

Table 3.12-7: Existing Peak-hour Intersection Levels of Service

Study Intersection	Agency	LOS Goal
1. Pintail Drive/Sunset Drive	Suisun City	E
2. Rio Vista Road (SR-12)/Sunset Avenue	Caltrans	E*
3. Rio Vista Road (SR-12)/Snow Drive	Caltrans	E*
4. Pintail Drive/Emperor Drive	Suisun City	E
5. Rio Vista Road (SR-12)/Emperor Drive–Lawler Ranch Parkway	Caltrans	E*
6. Rio Vista Road (SR-12)/Woodlark Drive	Caltrans	E*
7. Air Base Parkway/Walters Road	Fairfield	D
8. East Tabor Avenue/Walters Road	Fairfield	D
9. Bella Vista Drive/Walters Road	Suisun City	E
10. Pintail Drive/Walters Road	Suisun City	E
11. Mammoth Way–Montebello Drive/Walters Road	Suisun City	E
12. Petersen Road/Walters Road	Suisun City	E
13. Main Driveway/Walters Road	Suisun City	E
14. Southern Driveway/Walters Road	Suisun City	E
15. Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway	Caltrans*	E*

Notes:
CMP = Congestion Management Plan
LOS = Level of Service
* Caltrans no longer has an established operational Level of Service goal; therefore, the goal for the operational analysis applied was that from the local agency, Suisun City.
Source: W-Trans 2021.

Queueing

For the purpose of the analysis and as applied in other EIR analyses for other nearby projects, the proposed project would have an operational deficiency if an already exceeded queue length increases by one or more vehicles (assuming a vehicle length of 25 feet) or vehicle queues exceed the turn pocket length as a result of the proposed project.

3.12.7 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Effect on Circulation System

Impact TRANS-1a: The proposed project may conflict with a program plan, ordinance or policy of the circulation system, with regard to intersection operations, roadway segment operations, and queueing.

Impact Analysis for Impact TRANS-1a

This impact addresses intersection operations, roadway segment operations, and queueing, as they relate to program plans, ordinances, or policies.

Near-Term Operational Analysis

The Near-Term Plus Project Scenario reflects conditions during the year 2023 with the completion of the proposed project as compared to baseline traffic volumes.

Traffic Modeling

Near-Term volumes were projected by first determining the 2035 volumes using the Fairfield 2035 Travel Forecast Model. The model's 2035 segment volumes were translated to turning movement volumes at each of the study intersections using the "Furness" method: an iterative process that employs existing turn movement data, existing link volumes, and future link volumes to project likely turning future movement volumes at intersections. Once the 2035 volumes were projected, and the approved projects that were already included in the model forecasts subtracted from the volumes, a straight-line growth was applied to get the near-term year 2023 volumes.

Near-Term Traffic Scenario

Suisun City staff as well as the adjacent cities were consulted to determine whether any projects have been approved that would generate traffic prior to the horizon year of 2023 that could influence the operation of local and regional roadways. The list of projects provided by the City is shown in Table 3.12-8.

Table 3.12-8: Near-Term Projects List

Near-Term Projects	Project Components and Size
7-Eleven	12 pump fueling station; 3,060 square feet with convenience market
Monte Verde Project	124 single-family residences
Taco Bell Project	2,530-square-foot restaurant
Blossom Apartment	180-unit multi-family housing
Marina Village	160 multi-family housing
Lawler Mixed-Use Development	75-residential units; 7,200 square feet of retail
Zip-Thru Car Wash	6,100-square-foot car wash
Crystal School Residential	71 single-family residential units
Holiday Inn Express Hotel	83-unit hotel

Near-Term Projects	Project Components and Size
Self-storage and Retail	138,900-square-foot self-storage; 24,500-square-foot recreational and boat storage; 14,435 square feet of showroom space; 1,200 square feet of office space

The vehicle trip generation was estimated for each project and these trips were distributed to the surrounding circulation system based on the anticipated direction of travel. The trips generated by approved projects within the study area were included in the Near-Term Scenario analysis.

Near-Term (No Project) Traffic Volumes

Traffic projections for the approved near-term projects within the study area were added to the projected near-term year 2023 volumes. No development is assumed on the project parcel for this scenario. The Near-Term traffic volumes are shown in Exhibit 3.12-8 and Exhibit 3.12-9. The "With Project" volumes are shown in Exhibit 3.12-10 and Exhibit 3.12-11.

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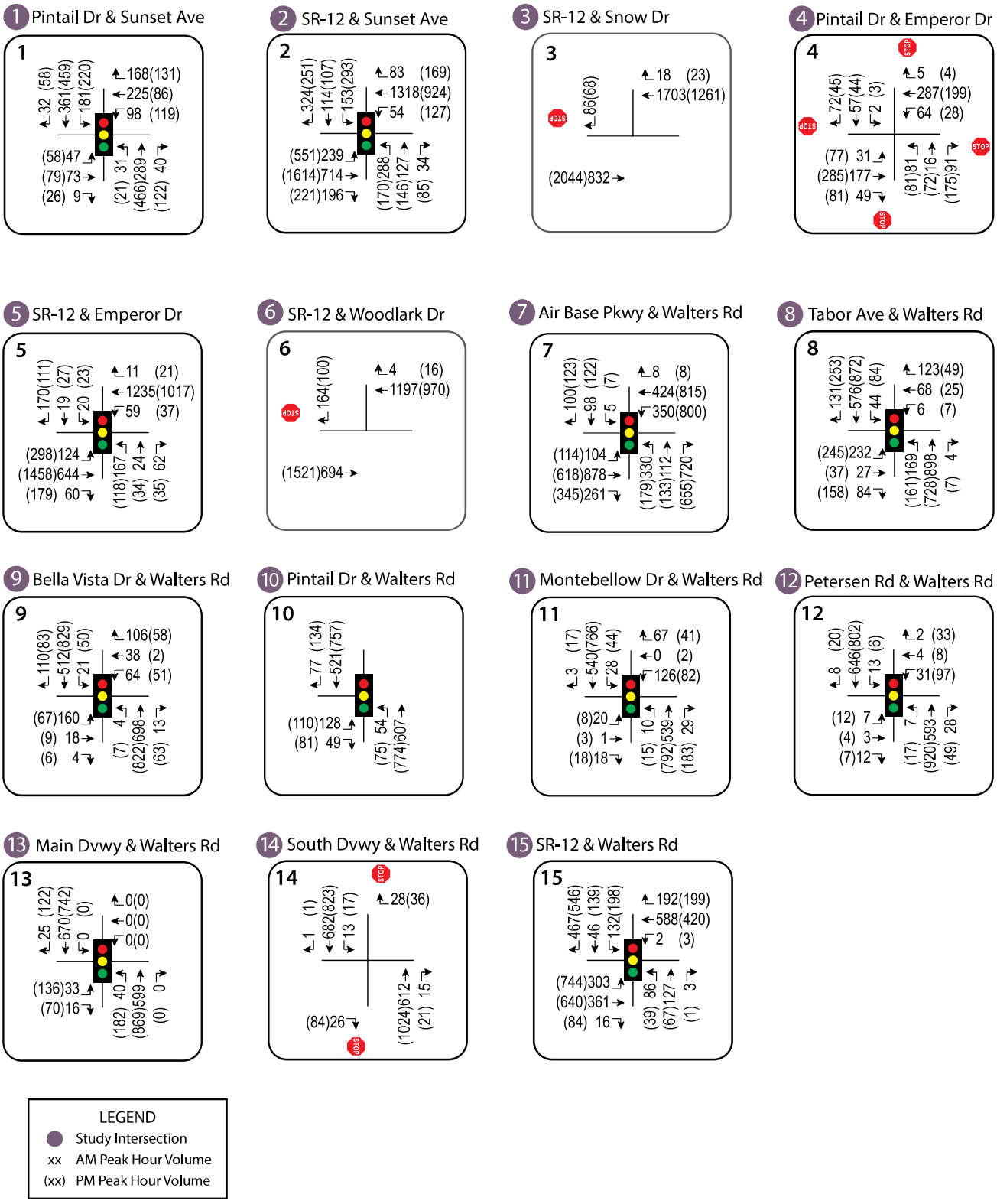

Source: W-Trans, 05/2021.

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Exhibit 3.12-8
Near-Term Intersection Traffic Volumes

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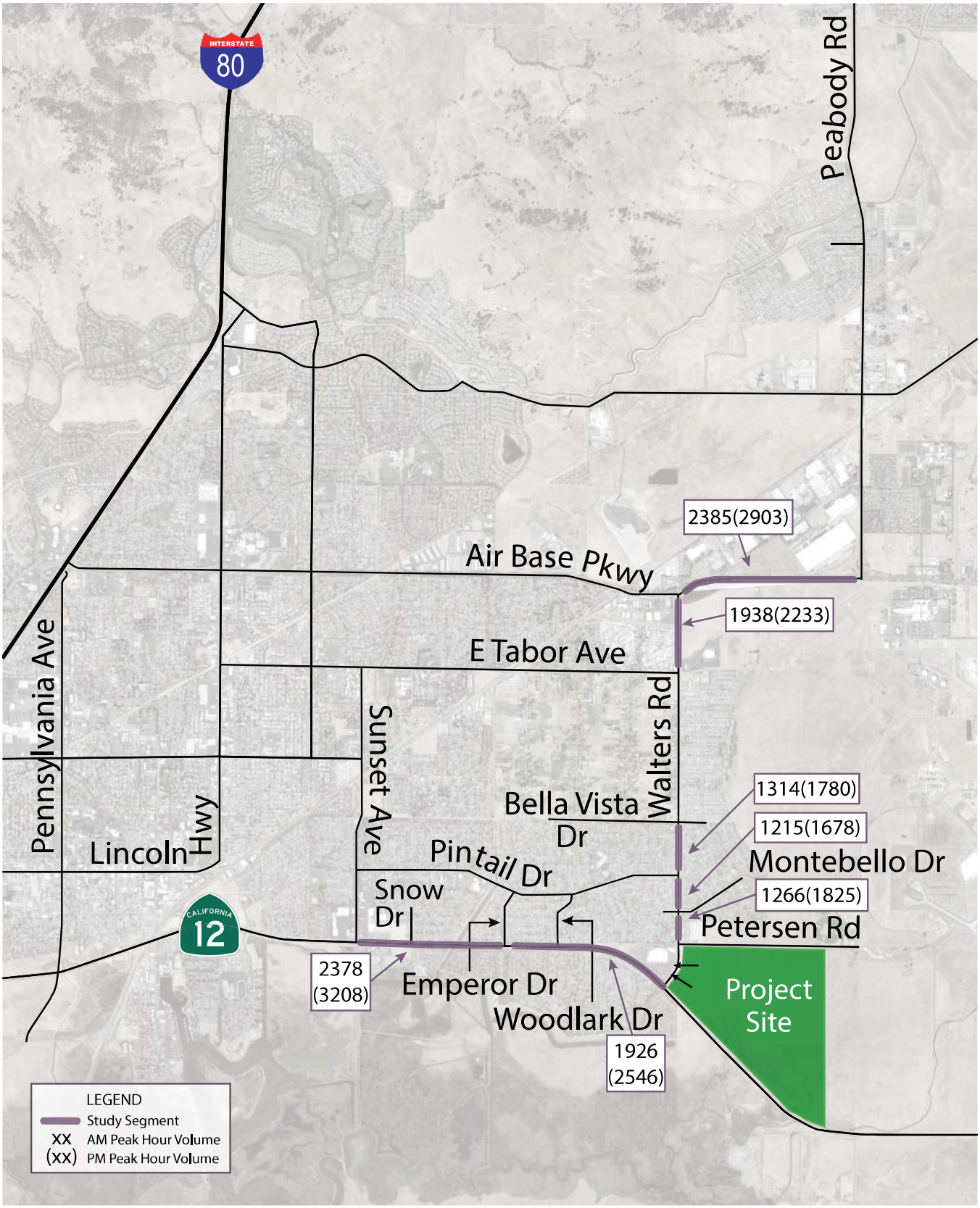

Source: W-Trans, 05/2021.

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Exhibit 3.12-9
Near-Term Segment Traffic Volumes

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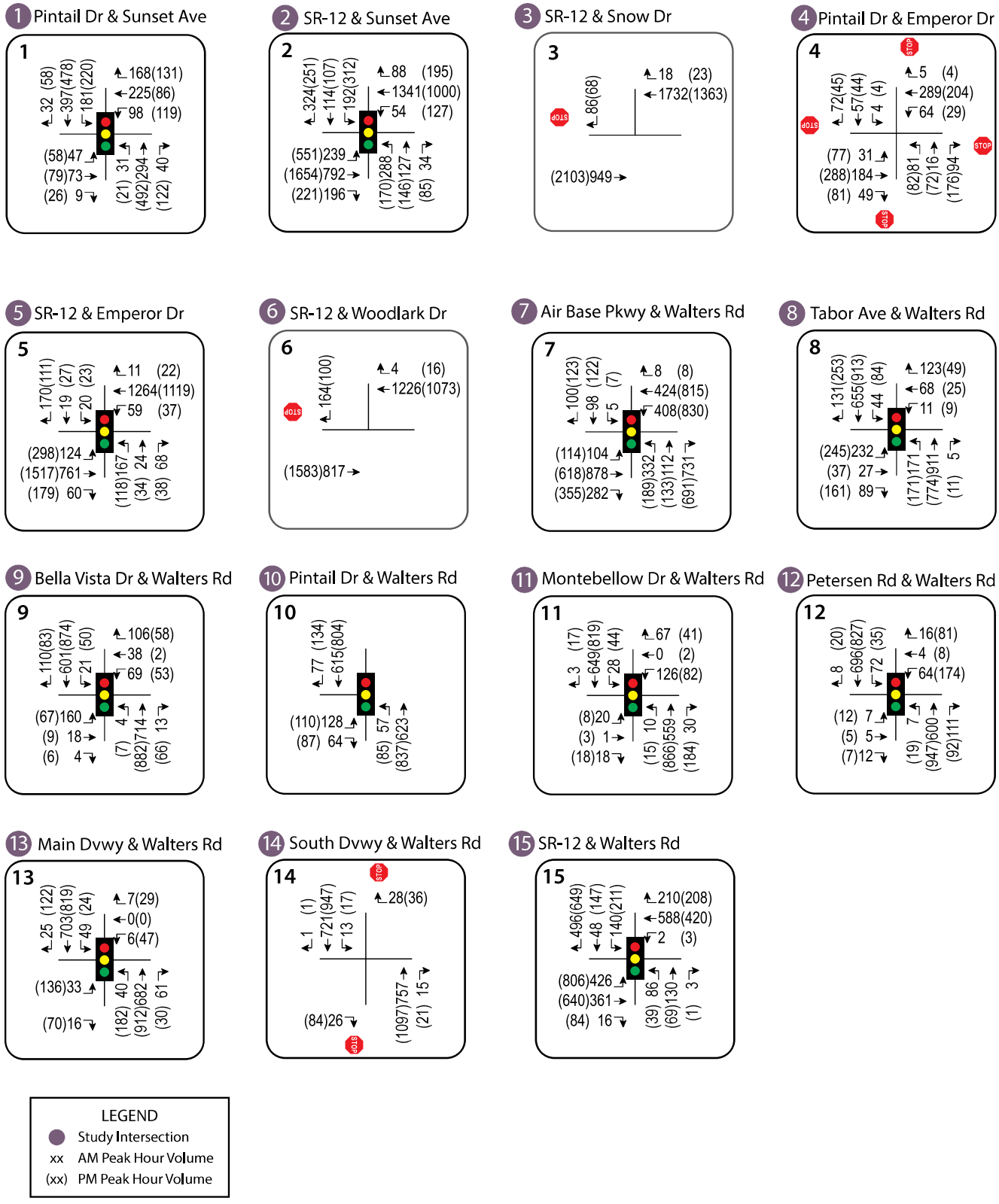

Source: W-Trans, 05/2021.

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Exhibit 3.12-10
Near-Term with Project Intersection Traffic Volumes

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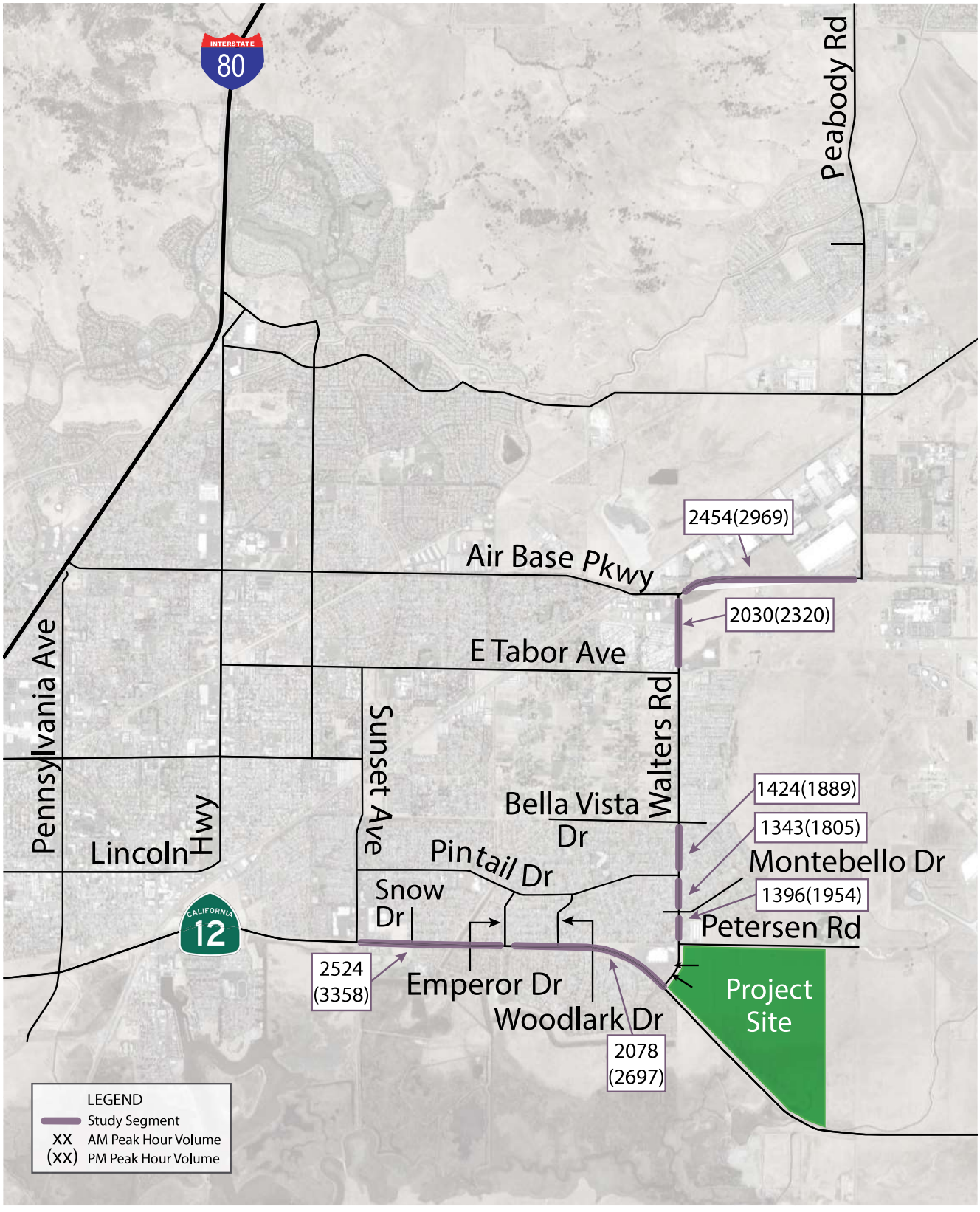

Source: W-Trans, 05/2021.

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Exhibit 3.12-11
Near-Term with Project Segment Traffic Volumes

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Assumed Geometry

At the Walters Road intersection shared with Walmart, the assumed westbound lane configuration for the project driveway was a left-turn lane and a shared through/right-turn lane. This configuration was assumed for the existing Walmart lanes with the signal modification requiring the existing eastbound right-turn lane to be converted to a shared through/right-turn lane. The signal phasing was assumed to provide protected left-turn phasing.

Intersection Operation

Under the Near-Term conditions all the intersections are expected to operate acceptably based on each's respective agency's operational goals. A summary of the Near-Term Plus Project intersection LOS is shown in Table 3.12-9.

Table 3.12-9: Near-Term Intersection Levels of Service

Study Intersection *Approach*	Near-Term		Near-Term Plus Project	
	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour
1. Pintail Drive/Sunset Drive	27.3/C	30.7/C	27.0/C	30.8/C
2. Rio Vista Road (SR-12)/Sunset Avenue	55.7/E	58.7/E	58.2/E	61.9/E
3. Rio Vista Road (SR-12)/Snow Drive	0.9/A	0.3/A	0.8/A	0.3/A
Southbound (Snow Drive) Approach	*26.2/D*	*15.7/C*	*27.1/D*	*16.8/C*
4. Pintail Drive/Emperor Drive	14.6/B	20.6/C	15.0/B	21.2/C
5. Rio Vista Road (SR-12)/Emperor Drive–Lawler Ranch Parkway	34.8/C	30.8/C	35.3/C	32.0/C
6. Rio Vista Road (SR-12)/Woodlark Drive	1.5/A	0.5/A	1.5/A	0.5/A
Southbound (Woodlark Drive) Approach	*19.2/C*	*14.0/B*	*19.7/C*	*15.0/B*
7. Air Base Parkway/Walters Road	41.4/D	39.8/D	47.7/D	41.7/D
8. East Tabor Avenue/Walters Road	21.7/C	18.5/B	22.8/C	19.4/B
9. Bella Vista Drive/Walters Road	20.8/C	16.1/B	20.8/C	16.4/B
10. Pintail Drive/Walters Road	9.8/A	9.0/A	9.9/A	9.3/A
11. Mammoth Way–Montebello Drive/Walters Road	12.9/B	10.4/B	12.5/B	10.4/B
12. Petersen Road/Walters Road	8.8/A	7.8/A	12.7/B	15.0/B
13. Main Driveway/Walters Road	6.3/A	15.0/B	11.9/B	22.8/C
14. Southern Driveway/Walters Road	0.5/A	0.8/A	0.5/A	0.8/A
Eastbound (Driveway) Approach	*11.2/B*	*12.5/B*	*11.4/B*	*13.4/B*
Westbound (Driveway) Approach	*10.9/B*	*13.1/B*	*11.7/B*	*13.6/B*
15. Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway	27.9/C	32.6/C	31.4/C	38.3/D

Study Intersection *Approach*	Near-Term		Near-Term Plus Project	
	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour
Notes: Results are presented as Delay/LOS; delay is measured in average seconds per vehicle; LOS = Level of Service results for minor approaches to two-way stop-controlled intersections are indicated in italics Source: W-Trans 2021.				

Intersection Queueing

Based on the queueing policy standard, the proposed project would have an operational queueing deficiency if the addition of project-generated trips would result in an increase of 25 feet in queue length where the queue already exceeds the available storage or if it causes the queue to exceed available storage. The following study intersections and turn lanes are expected to experience a significant increase in queueing.

- Rio Vista Road (SR-12)/Sunset Avenue—southbound left-turn lane during AM peak-hour.
- Air Base Parkway/Walters Road—westbound left-turn lane during the PM peak-hour and northbound right-turn lane during the morning peak-hour.
- Petersen Road/Walters Road—southbound left-turn lane during the AM peak-hour, and the westbound left-turn lane during the PM peak-hour.
- Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Road—southbound left-turn lane during both peak-hours and eastbound left-turn lane during the PM peak-hour.

Table 3.12-10 summarizes the queue at each intersection without and with the proposed project.

Table 3.12-10: Near-Term Peak-hour 95th Percentile Queues

Intersection	Storage Length/Number of Lanes	Near-Term		Near-Term Plus Project	
		AM	PM	AM	PM
1. Pintail Drive/Sunset Avenue					
NB Left-Turn Lane	105/1	47	36	47	36
SB Left-Turn Lane	105/1	**179**	**234**	**179**	**234**
EB Left-Turn Lane	105/1	53	61	53	61
WB Left-Turn Lane	75/1	**78**	**103**	**78**	**103**
2. Rio Vista Road (SR-12)/Sunset Avenue					
NB Left-Turn Lane	125/1	**365**	**211**	**370**	**211**
SB Left-Turn Lane	150/2	**206**	**384**	**232**	**408**
SB Right-Turn Lane	150/2	48	46	48	46
EB Left-Turn Lane	500/2	170	370	170	370

Intersection	Storage Length/Number of Lanes	Near-Term		Near-Term Plus Project	
		AM	PM	AM	PM
EB Right-Turn Lane	275/1	59	137	67	141
WB Left-Turn Lane	250/1	102	238	102	238
WB Right-Turn Lane	400/1	47	58	53	62
3. Rio Vista Road (SR-12)/Snow Drive					
WB Right-Turn Lane	250/1	0	0	0	0
4. Pintail Drive/Emperor Drive					
5. Rio Vista Road (SR-12)/Emperor Drive–Lawler Ranch Parkway					
NB Left-Turn Lane	215/1	168	147	168	147
NB Right-Turn Lane	215/1	0	0	0	0
SB Left-Turn Lane	125/1	48	55	48	55
EB Left-Turn Lane	425/1	256	**630**	256	**630**
EB Right-Turn Lane	255/1	0	95	0	103
WB Left-Turn Lane	200/1	135	97	135	97
WB Right-Turn Lane	230/1	0	0	0	0
6. Rio Vista Road (SR-12)/Woodlark Drive					
WB Right-Turn Lane	260/1	0	0	0	0
7. Air Base Parkway/Walters Road					
NB Right-Turn Lane	325/1	**591**	189	**616**	223
SB Left-Turn Lane	150/1	18	22	18	22
SB Right-Turn Lane	140/1	0	0	0	0
EB Left-Turn Lane	275/1	142	150	142	150
EB Right-Turn Lane	315/1	61	81	63	82
WB Left-Turn Lane	400/2	229	**438**	289	**471**
WB Right-Turn Lane	180/1	0	0	0	0
8. East Tabor Avenue/Walters Road					
NB Left-Turn Lane	180/1	**261**	174	**264**	**189**
SB Left-Turn Lane	270/1	64	93	64	93
EB Left-Turn Lane	95/2	**165**	**110**	**165**	**110**
EB Shared Through-Right-Turn Lane	95/1	46	71	47	72
WB Left-Turn Lane	125/1	18	17	24	20
9. Bella Vista Drive/Walters Road					
NB Left-Turn Lane	135/1	8	13	8	12
SB Left-Turn Lane	105/1	35	66	35	66

Intersection	Storage Length/Number of Lanes	Near-Term		Near-Term Plus Project	
		AM	PM	AM	PM
WB Right-Turn Lane	90/1	28	0	28	0
10. Pintail Drive/Walters Road					
NB Left-Turn Lane	130/1	77	73	80	99
EB Right-Turn Lane	150/1	22	27	24	27
11. Mammoth Way–Montebello Drive/Walters Road					
NB Left-Turn Lane	100/1	25	24	22	19
SB Left-Turn Lane	120/1	48	61	48	56
EB Right-Turn Lane	50/1	0	0	0	0
WB Right-Turn Lane	125/1	24	8	24	8
12. Petersen Road/Walters Road					
NB Left-Turn Lane	85/1	17	25	12	25
NB Right-Turn Lane	185/1	25	23	98	56
SB Left-Turn Lane	100/1	29	11	**129**	48
SB Right-Turn Lane	75/1	2	0	1	0
EB Right-Turn Lane	180/1	0	0	0	0
WB Left-Turn Lane	115/1	35	81	92	**154**
WB Right-Turn Lane	200/1	0	2	0	32
13. Main Driveway/Walters Road					
NB Left-Turn Lane	200/1	56	170	55	176
SB Left-Turn Lane	275/1	-	-	53	30
14. Southern Driveway/Walters Road					
15. Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway					
NB Left-Turn Lane	175/1.5	118	63	124	63
NB Right-Turn Lane	90/1	0	0	0	0
SB Left-Turn Lane	125/1.5	**168**	**268**	**190**	**290**
SB Right-Turn Lane	190/1.5	58	57	59	59
EB Left-Turn Lane	390/2	230	**659**	368	**743**
EB Right-Turn Lane	275/1	0	41	0	41
WB Left-Turn Lane	215/1	13	15	14	15
WB Right-Turn Lane	300/1	66	71	74	74

Notes:
All distances are measured in feet; NB = northbound; SB = southbound; EB = eastbound; WB = westbound;
bold text = deficient operation; shaded cell = increase in exceeded queue length more than 25 feet
Source: W-Trans 2021.

Congestion Management Plan Roadway Segment Level of Service

Under Near-Term and Near-Term Plus Project conditions, all study roadway segments are projected to operate acceptably during all peak periods. The segment LOS results are summarized in Table 3.12-11, and copies of the calculations are provided in Appendix I.

Table 3.12-11: Near-Term Plus Project Peak-hour Road Segment Levels of Service

Road Segment Limits *Direction*	Near-Term		Near-Term Plus Project	
	AM	PM	AM	PM
Rio Vista Road (SR-12)				
1. Sunset Avenue to Emperor Drive–Lawler Ranch Parkway				
Eastbound	0.31/B	0.70/C	0.35/B	0.72/D
Westbound	0.54/B	0.44/B	0.55/C	0.48/C
2. Emperor Drive–Lawler Ranch Parkway to Walters Road–Lawler Ranch Parkway				
Eastbound	0.25/A	0.54/C	0.30/B	0.56/C
Westbound	0.44/B	0.37/B	0.45/C	0.41/B
Walters Road—Suisun City				
3. Petersen Road to Montebello Drive				
Northbound	0.30/A	0.54/A	0.31/A	0.59/A
Southbound	0.34/A	0.47/A	0.37/A	0.50/A
4. Montebello Drive to Pintail Drive				
Northbound	0.33/A	0.47/A	0.34/A	0.51/A
Southbound	0.29/A	0.46/A	0.32/A	0.49/A
5. Pintail Drive to Bella Vista Drive				
Northbound	0.37/A	0.50/A	0.38/A	0.53/A
Southbound	0.30/A	0.49/A	0.33/A	0.52/A
Walters Road—Fairfield				
6. East Tabor Avenue to Air Base Parkway				
Northbound	0.67/B	0.55/A	0.68/B	0.58/A
Southbound	0.41/A	0.69/B	0.45/A	0.71/C
Air Base Parkway				
7. Walters Road to Peabody Road				
Eastbound	0.57/A	0.46/A	0.58/A	0.47/A
Westbound	0.28/A	0.58/A	0.30/A	0.59/A

Notes:
Speed is in mph; V/C = volume to capacity ratio; LOS = Level of Service
Source: W-Trans 2021.

Modeled Shift Change

To determine the potential need for operational improvements associated with shift changes, it was conservatively assumed that that the entire project site operated on the same 24/7 shift schedule and the shift change would overlap with the AM and PM peak-hours. It is noted that shift changes are often scheduled to occur outside of peak periods and since the site could potentially have more than one tenant, their schedules would likely not overlap. Thus, the analysis is conservative based on the assumptions applied. Under the Near-Term conditions, the three signalized intersections primarily affected by a shift change are expected to operate acceptably at LOS E or better based on each respective agency's operational goals. The summary of the Near-Term Plus Project Shift Change Intersection LOS is shown in Table 3.12-12.

Table 3.12-12: Near-Term Shift Change Intersection Levels of Service

Study Intersection *Approach*	Near-Term		Near-Term Plus Project Shift Change	
	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour
12. Petersen Road/Walters Road	8.8/A	7.8/A	35.7/D	25.8/C
13. Main Driveway/Walters Road	6.3/A	15.0/B	19.6/B	33.9/C
15. Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway	27.9/C	32.6/C	49.8/D	66.7/E

Notes:
Results are presented as Delay/LOS; delay is measured in average seconds per vehicle
Source: W-Trans 2021.

Table 3.12-13 summarizes the expected queueing during the shift change at each of the three intersections primarily affected by the shift change without and with the proposed project.

Table 3.12-13: Near-Term Shift Change Peak-hour 95th Percentile Queues

Intersection	Storage Length/Number of Lanes	Near-Term		Near-Term Plus Project Shift Change	
		AM	PM	AM	PM
12. Petersen Road/Walters Road					
NB Left-Turn Lane	85/1	17	25	8	19
NB Right-Turn Lane	185/1	25	23	133	79
SB Left-Turn Lane	100/1	29	11	**229**	**159**
SB Right-Turn Lane	75/1	2	0	0	0
EB Right-Turn Lane	180/1	0	0	0	0
WB Left-Turn Lane	115/1	35	81	**327**	**245**
WB Right-Turn Lane	200/1	0	2	40	41

Intersection	Storage Length/Number of Lanes	Near-Term		Near-Term Plus Project Shift Change	
		AM	PM	AM	PM
13. Main Driveway/Walters Road					
NB Left-Turn Lane	200/1	56	170	55	170
SB Left-Turn Lane	275/1	-	-	112	163
15. Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway					
NB Left-Turn Lane	175/1.5	118	63	129	63
NB Right-Turn Lane	90/1	0	0	0	0
SB Left-Turn Lane	125/1.5	**168**	**268**	**221**	**310**
SB Right-Turn Lane	190/1.5	58	57	65	62
EB Left-Turn Lane	390/2	230	**659**	**485**	**964**
EB Right-Turn Lane	275/1	0	41	0	41
WB Left-Turn Lane	215/1	13	15	14	15
WB Right-Turn Lane	300/1	66	71	76	76

Notes:
All distances are measured in feet; NB = northbound; SB = southbound; EB = eastbound; WB = westbound;
bold text = deficient operation; shaded cell = increase in queue length more than 25 feet.
Source: W-Trans 2021.

Conclusions

Based on the operational goals established, no near-term intersection or segment deficiency is expected; however, several potentially significant queueing deficiencies were identified.

Rio Vista Road (SR-12)/Sunset Avenue

The southbound left-turn lane is expected to exceed its available storage length with the addition of project-generated traffic under the AM peak-hour. The queue length would increase by more than one car length, from 206 to 232 feet. As there is a shared through/left-turn lane and the queue from both left-turn lanes is not expected to extend to the adjacent upstream intersection, which would result in a hazardous condition, the impact is considered less than significant.

Air Base Parkway/Walters Road

Impact TRANS-1a: With the addition project-generated traffic, the northbound right-turn lane would extend beyond an already exceeded storage lane by more than one vehicle length during the morning peak-hour. During the evening peak-hour, the westbound left-turn lane would extend beyond an already exceeded storage lane by more than one vehicle length.

Optimized green time allocated to each movement would reduce the expected queue length with the proposed project to less than one vehicle length. This recommendation is reflected in Mitigation Measure (MM) TRANS-1a. The resulting service level changes at the intersection are summarized in Table 3.12-14.

Table 3.12-14: Air Base Parkway/Walters Road Near-Term Plus Project with Mitigation Intersection Levels of Service

Study Intersection *Approach*	Near-Term		Near-Term Plus Project		Near-Term Plus Project with Mitigation	
	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour
7. Air Base Parkway/Walters Road	41.4/D	39.8/D	47.7/D	41.7/D	42.9/C	41.7/D

Notes:
Results are presented as Delay/LOS; delay is measured in average seconds per vehicle
Source: W-Trans 2021.

The movements with queueing deficiencies are summarized in Table 3.12-15, along with the resultant queue after mitigation measure are implemented.

Table 3.12-15: Air Base Parkway/Walters Road Near-Term Plus Project with Mitigation Intersection Queues

Study Intersection *Approach*	Storage Length/ Number of Lanes	Near-Term		Near-Term Plus Project		Near-Term Plus Project with Mitigation	
		AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour
7. Air Base Parkway/Walters Road							
NB Right-Turn Lane	325/1	**591**	189	**616**	223	**609**	223

Notes:
All distances are measured in feet; NB = northbound; SB = southbound; EB = eastbound; WB = westbound; *= mitigated storage length; **bold text** = deficient operation; shaded cell = increase in exceeded queue length more than 25 feet
Source: W-Trans 2021.

Petersen Road/Walters Road

Impact TRANS-1b: At the Petersen Road/Walters Road intersection, the following operational deficiencies were identified:

- Southbound left-turn storage lane is striped as 100 feet but is contiguous with a two-way left-turn lane that ends about 400 feet north of the intersection at a private driveway. With the project, the anticipated southbound left-turn queue would be 129 feet.
- Patrons of the existing gas station on the northeast corner of the Walters Road/Petersen Road intersection who exit the site using the Walters Road driveway via a westbound left-turning movement would conflict with the drivers on Walters Road moving into the southbound left-turn queue.
- With the proposed project, the westbound left-turn queue is projected to be 154 feet compared with the 115 feet of available storage.

To address the southbound left-turn queueing deficiency at the Petersen Road/Walters Road, it is recommended that the southbound left-turn lane be restriped from 100 feet to 150 feet in length. To prevent conflicts between southbound left-turning drivers on Walters Road and patrons exiting the Walters Road gas station driveway via a westbound left-turn movement, the City shall work with the existing gas station driveway to egress by right-turn only. This would be indicated with signage and striping.

To address the westbound left-turn queue, it is recommended the storage lane be extended from 115 feet to 200 feet. Consideration was also given to the type of left-turn phasing east–west at the intersection. Since the proposed project would be expected to result in primarily westbound left- and right-turning vehicles and the eastbound opposing through-volumes are expected to be low, protected left-turn phasing would be most appropriate considering operations and intersection safety. The east–west signal phasing would be modified to add protected left-turn phasing.

These recommendations are reflected in MM TRANS-1b. The resulting service level changes at the intersections are summarized in Table 3.12-16.

Table 3.12-16: Petersen Road/Walters Road Near-Term Plus Project with Mitigation Intersection Levels of Service

Study Intersection *Approach*	Near-Term		Near-Term Plus Project		Near-Term Plus Project with Mitigation	
	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour
12. Petersen Road/Walters Road	8.8/A	7.8/A	12.7/B	15.0/B	9.9/A	10.1/B

Notes:
Results are presented as Delay/LOS; delay is measured in average seconds per vehicle.
Source: W-Trans 2021.

The movements with queueing deficiencies are summarized in Table 3.12-17, along with the resultant queue after mitigation measure are implemented.

Table 3.12-17: Petersen Road/Walters Road Near-Term Plus Project with Mitigation Intersection Queues

Study Intersection *Approach*	Storage Length/ Number of Lanes	Near-Term		Near-Term Plus Project		Near-Term Plus Project with Mitigation	
		AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour
12. Petersen Road/Walters Road							
SB Left-Turn Lane	150*/1	29	11	**129**	48	76	40
WB Left-Turn Lane	200*/1	35	81	92	**154**	76	157

Study Intersection *Approach*	Storage Length/ Number of Lanes	Near-Term		Near-Term Plus Project		Near-Term Plus Project with Mitigation	
		AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour

Notes:
All distances are measured in feet; NB = northbound; SB = southbound; EB = eastbound; WB = westbound; *= mitigated storage length; **bold text** = deficient operation; shaded cell = increase in exceeded queue length more than 25 feet
Source: W-Trans 2021.

Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway

Impact TRANS-1c: At the Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway intersection, queueing deficiencies were identified for:

- The southbound left-turn storage lane has queues exceeding storage during both peak-hours and would increase by more than one car length with the proposed project.
- The eastbound left-turn lane operates beyond the available storage capacity during the PM peak-hour. With the addition of project-generated traffic, the queue is expected to increase by more than 25 feet.

As there is a shared southbound through/left-turn lane and the queue in both left-turn lanes is not expected to overflow into the adjacent upstream signalized intersection, the deficiency is considered less than significant. While the southbound queue approaching the intersection would extend north of the southbound left-turn storage lane for the 7-Eleven project on the southeast corner of the Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway intersection, patrons of the gas station and convenience store would still be expected to clear the storage lane during the green phase for the southbound movement. For the eastbound left-turn lane, optimizing the green time allocated to each movement would reduce the expected queue length to less than one vehicle length. Because the proposed improvements are subject to implementation by another agency (Caltrans), this mitigation will be feasible only with the active cooperation of that agency.

This recommendation is reflected in MM TRANS-1c. The resulting service level changes at the intersections are summarized in Table 3.12-18.

Table 3.12-18: SR-12/Walters Road Near-Term Plus Project with Mitigation Intersection Levels of Service

Study Intersection *Approach*	Near-Term		Near-Term Plus Project		Near-Term Plus Project with Mitigation	
	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour
15. Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway	27.9/C	32.6/C	31.4/C	38.3/D	31.5/C	36.8/D

Notes:
Results are presented as Delay/LOS; delay is measured in average seconds per vehicle
Source: W-Trans 2021.

The movements with queueing deficiencies are summarized in Table 3.12-19, along with the resultant queue after mitigation measure are implemented.

Table 3.12-19: SR-12/Walters Road Near-Term Plus Project with Mitigation Intersection Queues

Study Intersection *Approach*	Storage Length/Number of Lanes	Near-Term		Near-Term Plus Project		Near-Term Plus Project with Mitigation	
		AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour
15. Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway							
EB Left-Turn Lane	390/2	230	**659**	368	**743**	323	**594**

Notes:
All distances are measured in feet; NB = northbound; SB = southbound; EB = eastbound; WB = westbound; *= mitigated storage length; **bold text** = deficient operation
Source: W-Trans 2021.

Shift Change Operations–Walters Road Fronting the Project Site

Impact TRANS-1d: During the Shift Change Operations, queueing deficiencies were identified as follows:

- At Petersen Road/Walters Road, the southbound left-turn storage lane of 100 feet would be exceeded by projected queues of at most 229 feet during the morning peak-hour. The westbound 115-foot left-turn lane would be exceeded with an expected queue length of at most 301 feet during the morning peak-hour.
- At Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway, the eastbound left-turn 390-foot storage lanes would be further exceeded to a length of 964 feet during the evening peak-hour. During the morning peak-hour, the proposed project would cause the storage lanes to be exceeded.

To address the queueing deficiency during projected shift change times at the signalized Walters Road/Petersen Road and Walters Road/Rio Vista Road (SR-12)–Lawler Ranch Parkway intersections, the applicant would work with the City and Caltrans to coordinate the traffic signal timings on Walters Road at the intersections with Petersen Road, the shared project driveway with Walmart, and Rio Vista Road (SR-12). In addition to the traffic signal timing coordination plan, the following items discussed below are also recommended for each intersection.

Petersen Road/Walters Road

With the coordinated traffic signal timing and the extended storage lane as part of MM TRANS-1b, the expected southbound left-turn queue would be reduced to at most 170 feet and fully contained in the left-turn lane and two-way left-turn lane. For the westbound left-turn lane, in addition to coordinated signal timing, the left-turn storage lane shall be restriped to 305 feet.

Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway

In addition to the recommendation to coordinate the traffic signal timing at this intersection with the two other nearby Walters Road intersections, a traffic signal modification to include a southbound right-turn overlap phase to coincide with the eastbound left-turn maneuver is recommended to achieve acceptable queueing conditions. With the recommended improvements, the expected eastbound left-turn queue length would be reduced to pre-project conditions. As there is a shared southbound through/left-turn lane and the queue from both left-turn lanes is not expected to extend to the adjacent upstream intersection, the deficiency is considered less than significant. While the southbound queue approaching the intersection would extend north of the southbound left-turn storage lane for the 7-Eleven project on the southeast corner of the Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway intersection, patrons of the gas station and convenience store would still be expected to clear the storage lane during the green phase for the southbound movement.

As included in MM TRANS 1-d, the optimized traffic signal timing on Walters Road between Petersen Road and Rio Vista Road (SR-12) would result in acceptable LOS operations. The resulting service level changes at the intersections are summarized in Table 3.12-20.

Table 3.12-20: Near-Term Plus Project Shift Change with Mitigation Intersection Levels of Service

Study Intersection *Approach*	Near-Term		Near-Term Plus Project Shift Change		Near-Term Plus Project Shift Change with Mitigation	
	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour
12. Petersen Road/Walters Road	8.8/A	7.8/A	35.7/D	25.8/C	40.2/D	39.6/D
13. Main Driveway/Walters Road	6.3/A	15.0/B	19.6/B	33.9/C	24.0/C	44.0/D
15. Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway	27.9/C	32.6/C	49.8/D	66.7/E	29.4/C	60.8/E

Notes:
Results are presented as Delay/LOS; delay is measured in average seconds per vehicle
Source: W-Trans 2021.

The impacted movement queues before and after mitigation are summarized in Table 3.12-21.

Table 3.12-21: Near-Term Plus Project Shift Change with Mitigation Intersection Queues

Study Intersection *Approach*	Storage Length/ Number of Lanes	Near-Term		Near-Term Plus Project Shift Change		Near-Term Plus Project Shift Change with Mitigation	
		AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour
12. Petersen Road/Walters Road							
SB Left-Turn Lane	150*/1	29	11	**229**	**159**	**170**	**153**
WB Left-Turn Lane	305*/1	35	81	**327**	**245**	**301**	**291**
13. Main Driveway/Walters Rd							
NB Left-Turn Lane	200/1	56	170	55	170	42	198
SB Left-Turn Lane	275/1	-	-	112	163	65	143
15. Rio Vista Rd (SR-12)/Walters Rd-Lawler Ranch Pkwy							
SB Left-Turn Lane	125/1.5	**168**	**268**	**221**	**310**	**168**	**310**
EB Left-Turn Lane	390/2	230	**659**	**485**	**964**	343	**561**

Notes:
All distances are measured in feet; NB = northbound; SB = southbound; EB = eastbound; WB = westbound; *= mitigated storage length
bold text = deficient operation; shaded cell = increase in exceeded queue length more than 25 feet
Source: W-Trans 2021.

Cumulative Operational Analysis

For this scenario, the project-generated trips were added to the 2035 future volumes and then used to evaluate operation of the study intersections, arterials, and segments of SR-12. For the analysis, completion of the regional north–south Jepson Parkway project was assumed.

Traffic Modeling

Cumulative volumes were based on the 2035 volumes from the City of Fairfield 2035 Travel Forecast Model. The model's 2035 segment volumes were translated to turning movement volumes at each of the study intersections using the "Furness" method: an iterative process that employs existing turn movement data, existing link volumes, and future link volumes to project likely turning future movement volumes at intersections. So as not to double-count the nearby projects which are programmed in the model, the expected trips generated from those projects were subtracted from the base 2035 volumes.

Cumulative Traffic Scenario

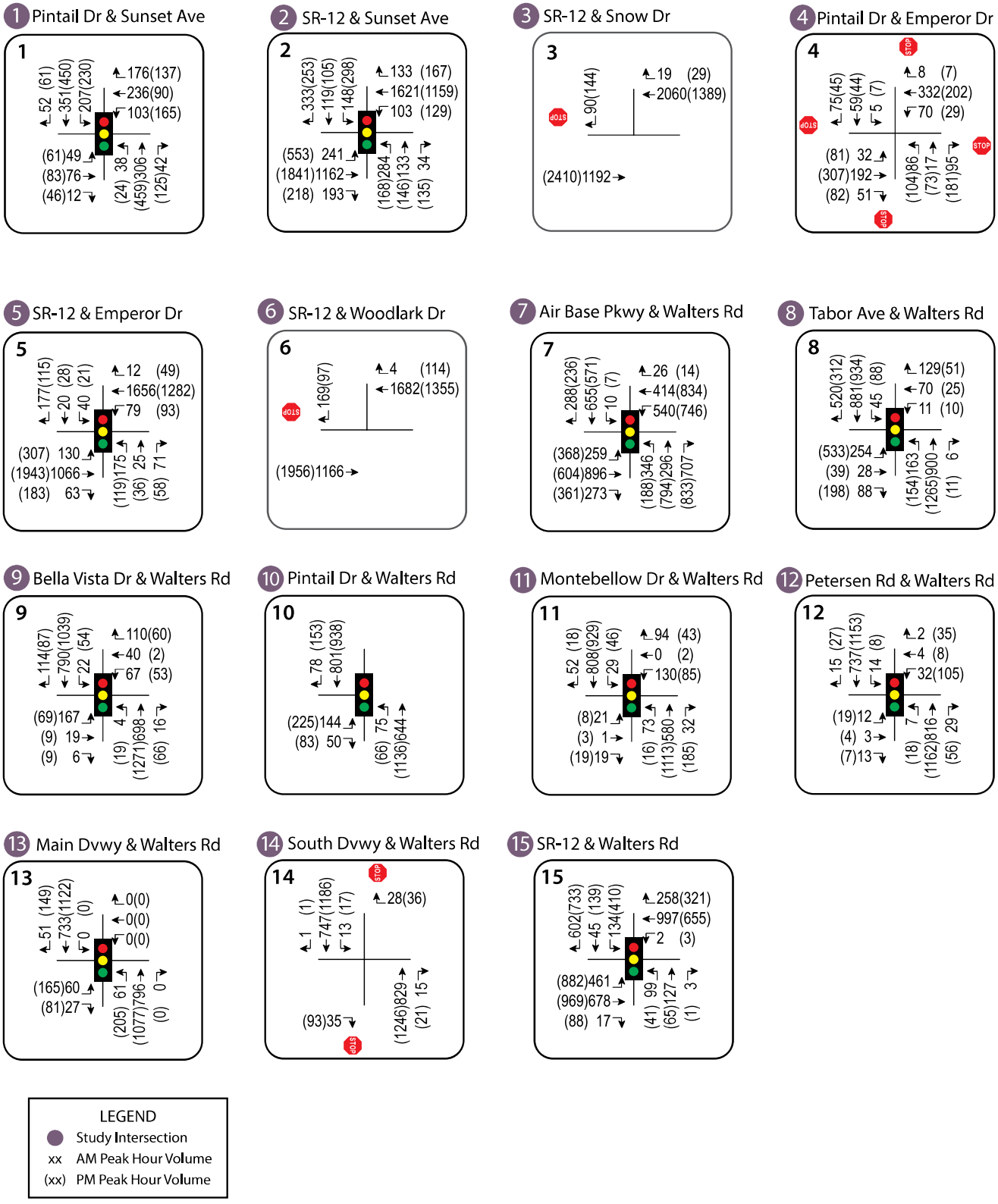
In addition to the approved projects included as part of the Near-Term Scenario, City staff was consulted for any other proposed projects that would be completed by the year 2035 and could influence the operation of local and regional roadways. The two proposed projects in the study area that were identified and included in the analysis are listed in Table 3.12-22.

Table 3.12-22: Near-Term and Cumulative Projects List

Project	Project Components and Size
Near-Term Project	
7-Eleven	12 pump fueling station; 3,060-square-foot with convenience market
Monte Verde Project	124 single-family residences
Taco Bell Project	2,530-square-foot restaurant
Blossom Apartment	180-unit multi-family housing
Marina Village	160 multi-family housing
Lawler Mixed-Use Development	75-residential units; 7,200 square feet of retail
Zip-Thru Car Wash	6,100-square-foot car wash
Crystal School Residential	71 single-family residential units
Holiday Inn Express Hotel	83-unit hotel
Self-Storage and Retail	138,900-square-foot self-storage; 24,500-square-foot recreational and boat storage; 14,435 square feet of showroom space; 1,200 square feet of office space
Pending Cumulative Project	
Highway 12 Logistics Project	1.28 million square feet high-cube warehouse
Industrial Project	481,000 square feet of industrial land use

Cumulative Traffic Volumes

The applied 2035 Cumulative volumes (without the proposed project) are included in Exhibit 3.12-12 and Exhibit 3.12-13. The “With Project” volumes are shown in Exhibit 3.12-14 and Exhibit 3.12-15.



Source: W-Trans, 05/2021.

FIRSTCARBON SOLUTIONS™

Exhibit 3.12-12
Cumulative Intersection Traffic Volumes

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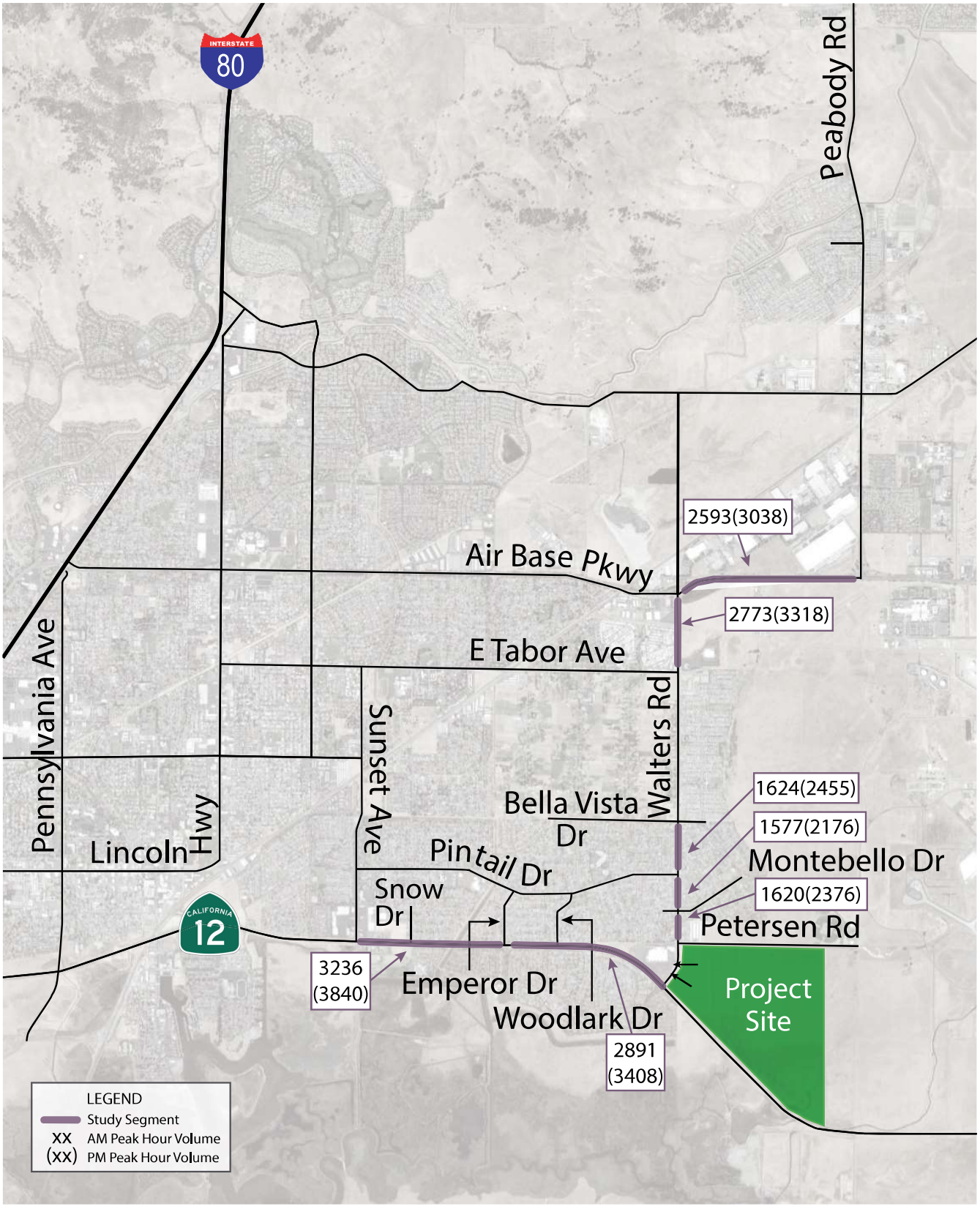

Source: W-Trans, 05/2021.

FIRSTCARBON SOLUTIONS™

Exhibit 3.12-13
Cumulative Segment Traffic Volumes

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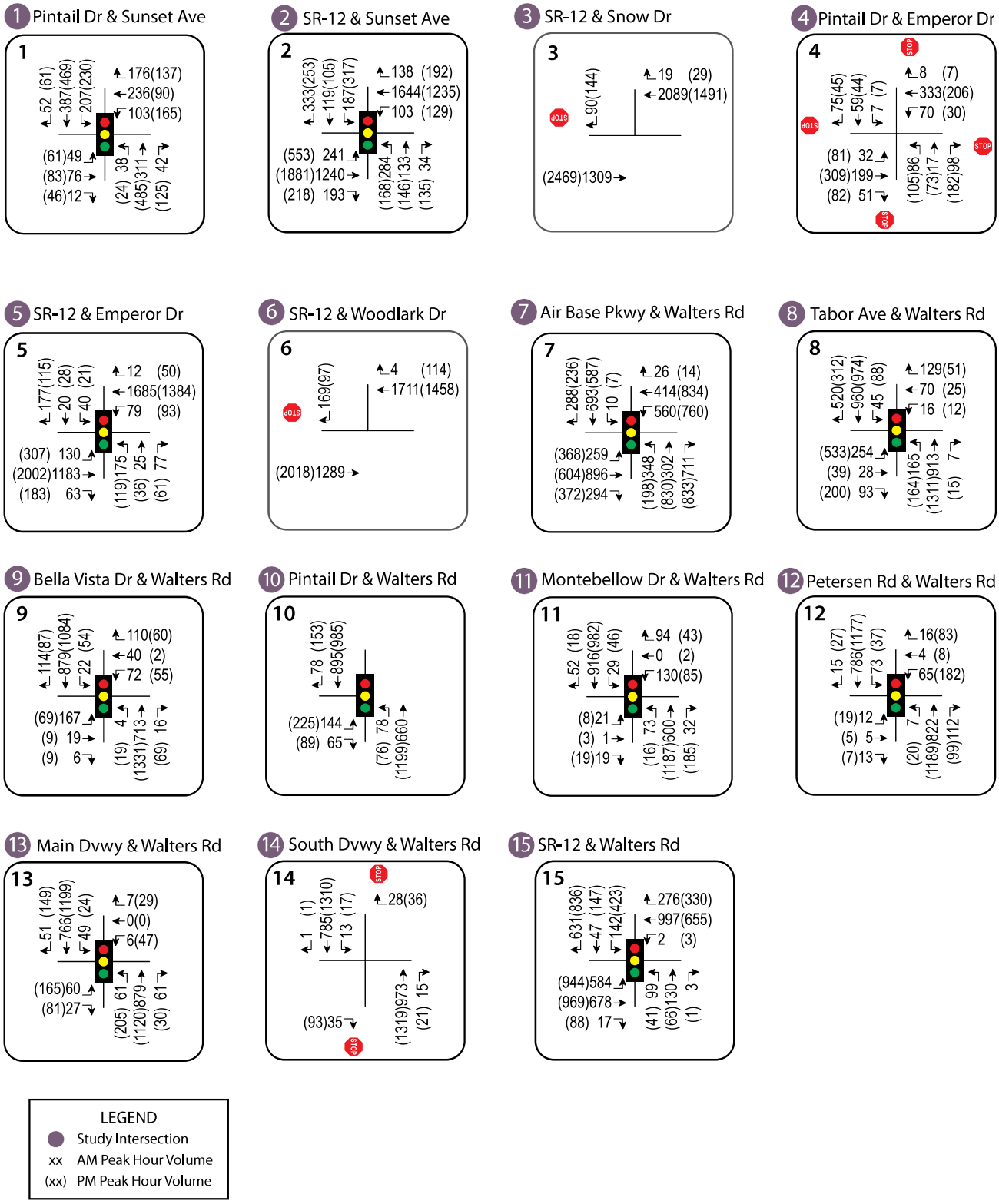

Source: W-Trans, 05/2021.

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Exhibit 3.12-14
Cumulative with Project Intersection Traffic Volumes

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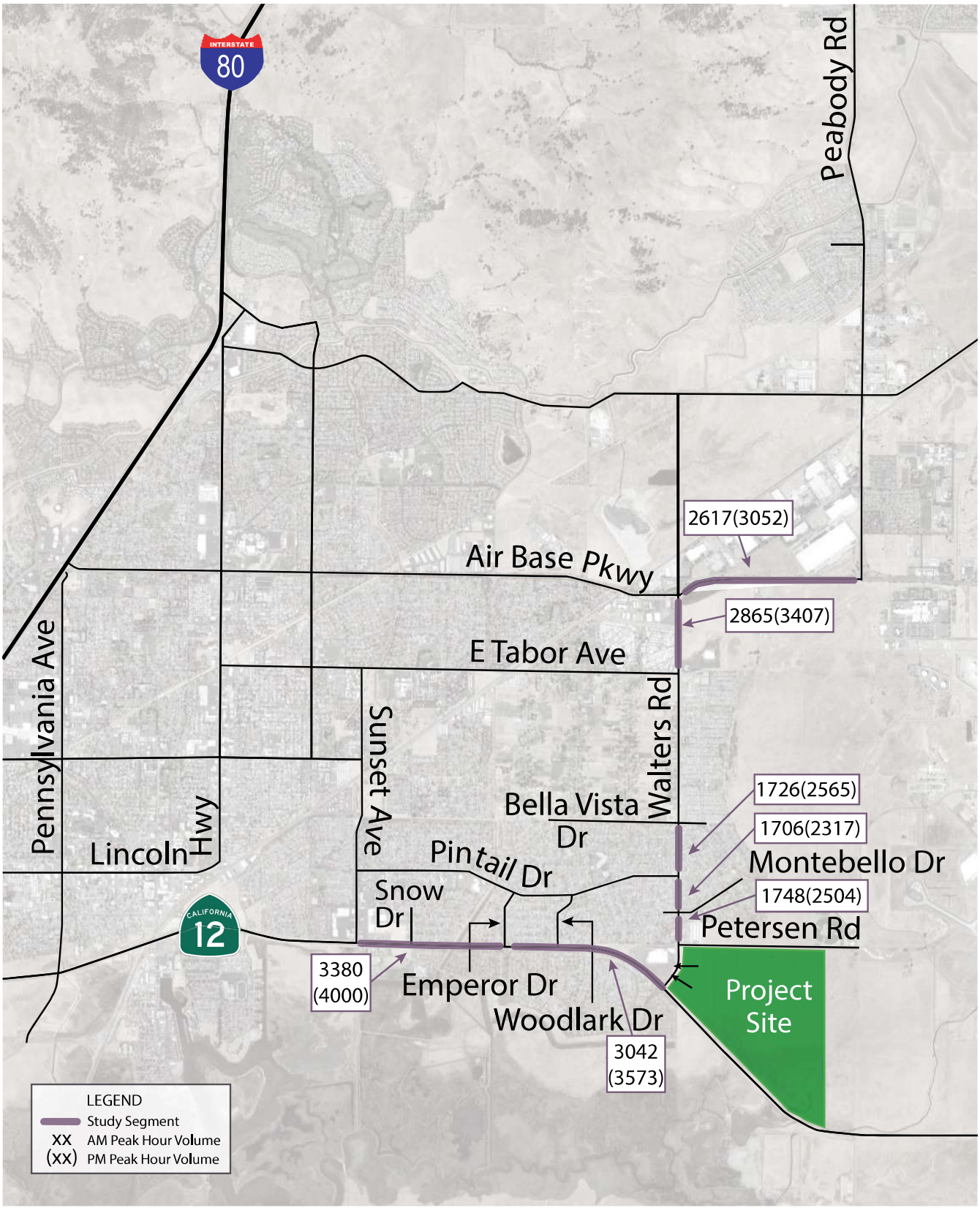

Source: W-Trans, 05/2021.

FIRSTCARBON SOLUTIONS™

Exhibit 3.12-15
Cumulative with Project Segment Traffic Volumes

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Future Roadway Improvements

For the analysis, all phases of the Solano County Transportation Authority's Jepson Parkway Project were assumed to be completed. Within the study area, this included the Walters Road Extension between Air Base Parkway and Cement Hill Road (Manuel Campos Parkway) and Cement Hill Road (Manuel Campos Parkway) between the Walters Road Extension and Peabody Road. Trips that were previously routed to the north via Air Base Parkway were instead routed north on Walters Road to Cement Hill Road.

Intersection Operations

Under the Cumulative conditions, all study intersections are expected to operate at LOS E or better during both peak periods. Based on the City's operational standard, with the addition of the proposed project, the intersections are expected to operate at an acceptable service level. A summary of the Cumulative Plus Project intersection LOS is shown in Table 3.12-23.

Table 3.12-23: Cumulative Plus Project Intersection Levels of Service

Study Intersection *Approach*	Cumulative		Cumulative Plus Project	
	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour
1. Pintail Drive/Sunset Drive	27.5/C	30.2/C	27.2/C	30.2/C
2. Rio Vista Road (SR-12)/Sunset Avenue	50.1/D	57.3/E	54.4/D	60.0/E
3. Rio Vista Road (SR-12)/Snow Drive	0.8/A	0.7/A	0.8/A	0.8/A
Southbound Approach	*30.7/E*	*20.2/C*	*31.7/D*	*22.2/C*
4. Pintail Drive/Emperor Drive	13.8/D	19.0/C	14.0/B	19.3/C
5. Rio Vista Road (SR-12)/Emperor Drive–Lawler Ranch Parkway	49.9/D	61.2/E	53.3/D	63.3/E
6. Rio Vista Road (SR-12)/Woodlark Drive	1.7/A	0.5/A	1.7/A	0.5/A
Southbound Approach	*30.7/D*	*17.2/C*	*32.1/D*	*18.5/C*
7. Air Base Parkway/Walters Road	62.8/E	56.3/E	66.1/E	57.5/E
8. East Tabor Avenue/Walters Road	31.5/C	28.8/C	34.8/C	30.8/C
9. Bella Vista Drive/Walters Road	20.6/C	18.3/B	20.8/C	18.8/B
10. Pintail Drive/Walters Road	10.1/B	9.9/A	10.3/B	10.0/B
11. Mammoth Way–Montebello Drive/ Walters Road	15.0/B	10.5/B	14.7/B	10.6/B
12. Petersen Road/Walters Road	12.2/B	11.2/B	19.4/B	12.2/B
13. Main Driveway/Walters Rd	7.7/A	17.7/B	13.6/B	35.4/D
14. Southern Driveway/Walters Road	0.5/A	0.8/A	0.5/A	0.8/A
Eastbound Approach	*11.1/B*	*15.1/B*	*11.3/B*	*16.4/C*
Westbound Approach	*11.5/B*	*14.2/B*	*12.2/B*	*14.8/B*

Study Intersection *Approach*	Cumulative		Cumulative Plus Project	
	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour
15. Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway	42.6/D	54.7/D	50.4/D	70.0/E

Notes:
Results are presented as Delay/LOS; delay is measured in average seconds per vehicle; LOS = Level of Service; results for minor approaches to two-way stop-controlled intersections are indicated in *italics*
Source: W-Trans 2021.

Intersection Queueing

Based on the significance standard, the proposed project would result in deficient operation if the addition of project-generated trips results in an increase of 25 feet in queue length and the queue exceeds the available storage or a queue that can be contained within the available stacking space without the project is made to exceed it. The following intersections and turn lanes are expected to have a project-generated queue deficiency.

- Rio Vista Road (SR-12)/Sunset Avenue–southbound left-turn lane during AM peak-hour
- Petersen Road/Walters Road–southbound left-turn lane during the AM peak-hour, and the westbound left-turn lane during the PM peak-hour
- Main Driveway/Walters Road–northbound left-turn lane during the PM peak-hour
- Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Road–southbound left-turn lane during the evening peak-hours and eastbound left-turn lane during both peak-hours

A summary of the queueing projections is provided in Table 3.12-24 and copies of the calculations are provided in Appendix I.

Table 3.12-24: Cumulative Peak-hour 95th Percentile Queues

Intersection	Storage Length/Number of Lanes	Cumulative		Cumulative Plus Project	
		AM	PM	AM	PM
1. Pintail Drive/Sunset Avenue					
NB Left-Turn Lane	105/1	50	37	50	37
SB Left-Turn Lane	105/1	**185**	**208**	**185**	**208**
EB Left-Turn Lane	105/1	50	57	50	57
WB Left-Turn Lane	75/1	74	**128**	75	**128**
2. Rio Vista Road (SR-12)/Sunset Avenue					
NB Left-Turn Lane	125/1	**472**	**305**	**472**	**305**
SB Left-Turn Lane	150/2	**274**	**384**	**326**	**384**
SB Right-Turn Lane	150/2	93	46	93	46

Intersection	Storage Length/Number of Lanes	Cumulative		Cumulative Plus Project	
		AM	PM	AM	PM
EB Left-Turn Lane	500/2	204	355	204	355
EB Right-Turn Lane	275/1	39	74	45	76
WB Left-Turn Lane	250/1	186	**265**	186	**265**
WB Right-Turn Lane	400/1	32	44	33	47
3. Rio Vista Road (SR-12)/Snow Drive					
WB Right-Turn Lane	250/1	45	43	45	48
4. Pintail Drive/Emperor Drive					
5. Rio Vista Road (SR-12)/Emperor Drive–Lawler Ranch Parkway					
NB Left-Turn Lane	215/1				
NB Right-Turn Lane	175/1	0	0	0	0
SB Left-Turn Lane	115/1	76	52	76	52
EB Left-Turn Lane	425/1	259	**648**	259	**648**
EB Right-Turn Lane	255/1	0	137	0	141
WB Left-Turn Lane	200/1	192	**262**	192	**262**
WB Right-Turn Lane	230/1	0	0	0	0
6. Rio Vista Road (SR-12)/Woodlark Drive					
WB Right-Turn Lane	260/1	80	25	83	28
7. Air Base Parkway/Walters Road					
NB Right-Turn Lane	325/1	315	**592**	321	**592**
SB Left-Turn Lane	150/1	26	24	26	24
SB Right-Turn Lane	140/1	0	0	0	0
EB Left-Turn Lane	275/1	**310**	**524**	**310**	**524**
EB Right-Turn Lane	315/1	68	249	69	268
WB Left-Turn Lane	400/2	345	**413**	364	**430**
WB Right-Turn Lane	180/1	0	0	0	0
8. East Tabor Avenue/Walters Road					
NB Left-Turn Lane	180/1	**261**	157	**264**	171
SB Left-Turn Lane	270/1	76	93	76	93
EB Left-Turn Lane	95/2	**190**	**304**	**190**	**304**
EB Shared Through-Right-Turn Lane	95/1	62	77	63	77
WB Left-Turn Lane	125/1	29	21	37	24
9. Bella Vista Drive/Walters Road					

Intersection	Storage Length/Number of Lanes	Cumulative		Cumulative Plus Project	
		AM	PM	AM	PM
NB Left-Turn Lane	135/1	9	23	9	22
SB Left-Turn Lane	105/1	35	67	35	67
WB Right-Turn Lane	90/1	26	0	26	0
10. Pintail Drive/Walters Road					
NB Left-Turn Lane	130/1	95	54	100	60
EB Right-Turn Lane	150/1	21	27	24	27
11. Mammoth Way–Montebello Drive/Walters Road					
NB Left-Turn Lane	100/1	91	20	91	16
SB Left-Turn Lane	120/1	42	46	38	43
EB Right-Turn Lane	50/1	0	0	0	0
WB Right-Turn Lane	125/1	30	8	30	8
12. Petersen Road/Walters Road					
NB Left-Turn Lane	85/1	11	22	8	22
NB Right-Turn Lane	185/1	19	27	86	58
SB Left-Turn Lane	100/1	22	13	**128**	46
SB Right-Turn Lane	75/1	1	0	0	0
EB Right-Turn Lane	180/1	0	0	0	0
WB Left-Turn Lane	115/1	34	85	57	**141**
WB Right-Turn Lane	200/1	0	2	0	31
13. Main Driveway/Walters Road					
NB Left-Turn Lane	200/1	72	190	71	**286**
SB Left-Turn Lane	100/1	-	-	51	24
14. Southern Driveway/Walters Road					
SB Left-Turn Lane	50/1	0	3	3	3
15. Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway					
NB Left-Turn Lane	175/1.5	119	68	121	68
NB Right-Turn Lane	90/1	0	0	0	0
SB Left-Turn Lane	125/1.5	**163**	**566**	**171**	**596**
SB Right-Turn Lane	190/1.5	61	62	61	63
EB Left-Turn Lane	390/2	347	**889**	**511**	**968**
EB Right-Turn Lane	275/1	0	44	0	44
WB Left-Turn Lane	215/1	13	16	13	16
WB Right-Turn Lane	300/1	132	85	140	87

Intersection	Storage Length/Number of Lanes	Cumulative		Cumulative Plus Project	
		AM	PM	AM	PM
Notes: All distances are measured in feet; NB = northbound; SB = southbound; EB = eastbound; WB = westbound; **bold text** = deficient operation; shaded cell = increase in exceeded queue length more than 25 feet Queues for NB Left-Turn Lane at Air Base Parkway/Walters Road and EB Left-Turn Lane at Petersen Road/Walters Road are omitted because these facilities are trap lanes (i.e., a through lane that converts into a turn lane). Trap lanes do not have turn pockets and, therefore, do not have the potential for queues to spill out into adjoining lanes. Source: W-Trans 2021.					

CMP Roadway Segment Level of Service

Under the Cumulative and Cumulative Plus Project scenarios, all study roadway segments are projected to operate acceptably during both peak periods without and with the proposed project, except for northbound Walters Road between Air Base Parkway and East Tabor Avenue. With and without the project, this roadway segment is expected to operate at LOS F. The segment LOS results are summarized in Table 3.12-25 and copies of the calculations are provided in Appendix I.

Table 3.12-25: Cumulative and Cumulative Plus Project Peak-hour Road Segment Levels of Service

Road Segment Limits *Direction*	Cumulative		Cumulative Plus Project	
	AM	PM	AM	PM
Rio Vista Road (SR-12)				
1. Sunset Avenue to Emperor Drive–Lawler Ranch Parkway				
Eastbound	0.47/B	0.84/D	0.51/C	0.86/D
Westbound	0.69/C	0.53/C	0.70/C	0.57/C
2. Emperor Drive–Lawler Ranch Parkway to Walters Road–Lawler Ranch Parkway				
Eastbound	0.42/B	0.71/D	0.46/B	0.73/D
Westbound	0.62/C	0.51/C	0.63/C	0.55/C
Walters Road—Suisun City				
3. Petersen Road to Montebello Drive				
Northbound	0.42/A	0.70/C	0.43/A	0.74/C
Southbound	0.48/A	0.62/B	0.54/A	0.65/B
4. Montebello Drive to Pintail Drive				
Northbound	0.39/A	0.66/B	0.40/A	0.70/B
Southbound	0.48/A	0.55/A	0.54/A	0.59/A
5. Pintail Drive to Bella Vista Drive				
Northbound	0.42/A	0.76/C	0.42/A	0.79/C
Southbound	0.48/A	0.61/B	0.54/A	0.64/B

Road Segment Limits *Direction*	Cumulative		Cumulative Plus Project	
	AM	PM	AM	PM
Walters Road—Fairfield				
6. East Tabor Avenue to Air Base Parkway				
Northbound	0.73/C	**1.01/F**	0.74/C	**1.03/F**
Southbound	0.81/D	0.84/D	0.85/D	0.86/D
Air Base Parkway				
7. Walters Road to Peabody Road				
Eastbound	0.58/A	0.52/A	0.58/A	0.52/A
Westbound	0.35/A	0.57/A	0.36/A	0.57/A

Notes:
Speed is in mph; V/C = volume to capacity ratio; LOS = Level of Service; **bold text** = deficient operation (LOS F); shaded cell = operational deficiency
Source: W-Trans 2021.

Conclusions

Based on the operational goals established, no cumulative intersection deficiencies are expected. However, several potentially significant queueing and roadway segment deficiencies were identified.

Rio Vista Road (SR-12)/Sunset Avenue

The southbound left-turn lane is expected to exceed its available storage length without the proposed project. With the addition of project-generated trips during the AM peak-hour the queue length would increase from 274 to 326 feet. As there is a shared through/left-turn lane and the queue from both left-turn lanes is not expected to back up to the adjacent upstream intersection resulting in a hazardous condition, the deficiency is considered less than significant.

Walters Road Fronting Project Site

Impact TRANS-1e: Under the Cumulative With Project conditions, queueing deficiencies on Walters Road along the project frontage are identified:

- At Petersen Road/Walters Road, the southbound left-turn storage lane of 100 feet would be exceeded by projected queues of 128 feet during the morning peak-hour. The westbound 115-foot left-turn lane would be exceeded with an expected queue length of at most 141 feet during the evening peak-hour.
- At Main Driveway/Walters Road, the northbound left-turn storage lane of 200 feet would be exceeded by projected queues of 286 feet during the evening peak-hour.
- At Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway, the eastbound left-turn 390-foot storage lanes would be further exceeded to a length of 968 feet during the evening peak-hour. During the morning peak-hour, the proposed project would cause the storage lanes to be exceeded.

Petersen Road/Walters Road

With MM TRANS-1b to restripe the southbound left-turn lane to 150 feet in length and westbound left-turn lane to 200 feet, the deficiency to these left-turn lanes would be mitigated.

Main Driveway/Walters Road

With traffic signal timing coordination alone, the queue length would be reduced to 217 feet. However, since the northbound left-turn storage lane cannot be extended as the southbound left-turn storage lane into the 7-Eleven gas station and convenience store abuts directly to the south, the queueing deficiency would be mitigated with the addition of a second northbound left-turn lane. It is noted that the addition of a turning lane would not be expected to result in an VMT impact. To address the queueing deficiency for the northbound left-turn lane at the Main Driveway/Walters Road intersection, it is recommended that in addition to coordinating the traffic signal timing, an additional northbound left-turn lane be included in Mitigation Measure TRANS-1e. Given that the widening of the roadway to accommodate the additional turn lane would require property from the 7-Eleven project site, the mitigation to add an additional northbound left-turn lane may not be feasible due to property ownership.

Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway

In addition to the recommendation to coordinate the traffic signal timing at this intersection, to achieve acceptable operation a traffic signal modification adding a southbound right-turn overlap phase is also recommended. With these improvements the expected queue length would be reduced to pre-project conditions. This recommendation is included in MM TRANS-1e. Because the proposed improvements are subject to control by Caltrans, this mitigation will be feasible only with the active cooperation of that agency.

These improvements are included in MM TRANS-1e. The resulting service level changes at the intersections are summarized in Table 3.12-26.

Table 3.12-26: Cumulative and Cumulative Plus Project with Mitigation Intersection Levels of Service

Study Intersection *Approach*	Cumulative		Cumulative Plus Project		Cumulative Plus Project with Mitigation	
	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour
12. Petersen Road/Walters Road	12.2/B	11.2/B	19.4/B	12.2/B	9.2/A	30.1/C
13. Main Driveway/Walters Road	7.7/A	17.7/B	13.6/B	35.4/D	40.0/D	29.1/C
15. Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway	42.6/D	54.7/D	50.4/D	70.0/E	32.7/C	50.7/D

Notes:
Results are presented as Delay/LOS; delay is measured in average seconds per vehicle
Source: W-Trans 2021.

The deficient movement queues with mitigation are summarized in Table 3.12-27.

Table 3.12-27: Cumulative Plus Project with Mitigation Intersection Queues

Study Intersection *Approach*	Storage Length/ Number of Lanes	Cumulative		Cumulative Plus Project		Cumulative Plus Project with Mitigation	
		AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour	AM Peak-hour	PM Peak-hour
12. Petersen Road/Walters Road							
SB Left-Turn Lane	150*/1	22	13	**128**	46	86	32
WB Left-Turn Lane	200*/1	34	85	57	**141**	78	196
13. Main Driveway/Walters Road							
NB Left-Turn Lane	200/2*	72	190	71	**286**	31	118
15. Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway							
SB Left-Turn Lane	125/1.5	**163**	**566**	**171**	**596**	**133**	**303**
EB Left-Turn Lane	390/2	347	**889**	**511**	**968**	322	**434**

Notes:
All distances are measured in feet; NB = northbound; SB = southbound; EB = eastbound; WB = westbound; *= mitigated storage length or number of lanes; **bold text** = deficient operation; shaded cell = operational deficiency
Source: W-Trans 2021.

Walters Road–East Tabor Avenue to Air Base Parkway (Fairfield)

With and without the project, the northbound segment of Walters Road between East Tabor Avenue to Air Base Parkway would operate at LOS F. The proposed project would increase the V/C ratio by 0.02 for a cumulatively considered operational deficiency.

While the deficiency could be mitigated by widening the roadway and adding vehicle capacity, this would likely induce VMT in the area, resulting in a VMT impact. The widening may also not be feasible due to property ownership and utility locations. With MM TRANS-2a (see below under Impact TRANS-2), which requires preparation of a Transportation Demand Management (TDM) plan and monitoring program that would reduce trips and encourage travel by alternative modes, the operational deficiency would be mitigated to some extent. However, the amount of trip reduction required to reduce the operational deficiency to a less than significant level would be about 60 percent. As the efficacy of the TDM plan cannot be guaranteed, the roadway segment deficiency would be significant and unavoidable.

Transportation Demand Management

The City requires, as stated in General Plan Policy T-3.6, that any new developments that would accommodate 100 full- or part-time employees or more are required to incorporate feasible TDM strategies. With an anticipated employee count of 2,059 persons, the proposed development would require TDM measures. Mitigation Measure TRANS-1f requires the applicant to develop a TDM plan.

Level of Significance Before Mitigation for Impact TRANS-1a

Not applicable. Although the proposed project may result in LOS at certain locations in excess of that prescribed in the City's General Plan, under CEQA, this exceedance cannot be considered an impact because CEQA expressly forbids lead agencies from measuring adverse transportation effects in terms of LOS (see Subsection 3.12.4, Regulatory Framework).

Mitigation Measures for Impact TRANS-1a[2]

MM TRANS-1a Prior to and as a condition of issuance of certificates of occupancy for the proposed project, the applicant shall work with the City of Fairfield regarding the implementation of traffic signal timing optimization at the Air Base Parkway/Walters Road intersection. The applicant is responsible for the full cost required to implement the new traffic signal timing. This mitigation measure shall not apply if the overseeing agency does not support the proposed timing improvements.

MM TRANS-1b Prior to and as a condition of issuance of certificates of occupancy for the proposed project, the westbound left-turn lane storage at the intersection of Petersen Road/Walters Road intersection shall be restriped from 115 feet to 200 feet, and the traffic signal and signal phasing shall be modified so that the east–west approaches have protected left-turn phasing. In order to prevent conflicts between southbound left-turning drivers and gas station patrons exiting from the Walters Road driveway, the driveway egress shall be restricted to right-turn only, with associated signing and striping indicating this. The southbound left-turn lane at the Petersen Road/Walters Road intersection shall be extended from 100 feet to 150 feet. The applicant is responsible for the full cost of the improvements.

MM TRANS-1c Prior to and as a condition of issuance of certificates of occupancy for the proposed project, the applicant shall work with the City of Suisun City and the California Department of Transportation (Caltrans) to optimize the traffic signal timing splits at the intersection of Rio Vista Road (SR-12)/Walters Road–Lawler Ranch Parkway. The applicant is responsible for the full cost to implement the new signal timing. This mitigation measure shall not apply if Caltrans does not support the proposed changes.

MM TRANS-1d Future monitoring shall be conducted during shift change times to determine whether there is deficient queueing storage at Petersen Road/Walters Road, Walmart Driveway/Walters Road, and/or Rio Vista Road (SR-12)/Walters Road. If deficient queueing is observed, the applicant shall work with the City and the

[2] Although "Mitigation Measures" are being recommended for LOS-related impacts, these measures are not true CEQA Mitigation Measures. Rather, despite the title given to them, they are really staff-recommended conditions of approval that would be imposed on the Project by the City due to its planning authority under its General Plan and its general police power to regulate local affairs in furtherance of the public welfare and public health and safety. Article XI, section 7, of the California Constitution confers on cities the power to "make and enforce within [their] limits all local police, sanitary and other ordinances and regulations not in conflict with general laws." As the California Supreme Court has held, a land use regulation is within a city's police power if the regulation is reasonably related to the public welfare. (*Associated Home Builders v. City of Livermore* (1976) 18 Cal.3d 582, 600-601.) Nothing in Senate Bill 743 (2013) prevents local agencies from continuing to exercise their police power as a means of enforcing General Plan policies involving LOS.

California Department of Transportation (Caltrans) to implement a traffic signal coordination plan for these shift time peak periods. In order to accommodate the projected queue lengths, if monitoring indicates that additional storage length is required, the westbound left-turn lane at Petersen Road/Walters Road shall be extended from 115 feet to 305 feet and the Rio Vista Road (SR-12)/Walters Road traffic signal shall be modified to include a southbound right-turn overlap phase. The applicant is responsible for the full cost of this mitigation measure. This mitigation measure shall not apply if Caltrans does not support the proposed improvements.

MM TRANS-1e Future monitoring shall be conducted to determine whether there is deficient queueing storage at Walmart Driveway/Walters Road, and/or Rio Vista Road (SR-12)/Walters Road. The applicant shall work with the City and the California Department of Transportation (Caltrans) to implement a traffic signal coordination plan. In order to accommodate the projected queue lengths, if monitoring determines that additional storage length is required, the Rio Vista Road (SR-12)/Walters Road signal be modified to include a southbound right-turn overlap phase. To address the northbound left-turn storage lane cumulative queueing deficiency, a second northbound left-turn storage lane shall be added at the intersection of Walmart Driveway/Walters Road; however, given that the improvement would require acquisition of private property, the northbound queueing impact would be significant and unavoidable. The applicant is responsible for the full cost of this mitigation measure. This mitigation measure shall not apply if Caltrans does not support the proposed improvements.

Level of Significance After Mitigation for Impact TRANS-1a

Mitigation measures are recommended here to reduce LOS at certain locations for the benefit of the City, but they are not required by CEQA because LOS exceedances can no longer be considered significant impacts under CEQA (see Subsection 3.12.4, Regulatory Framework).

Impact TRANS-1b: The proposed project may conflict with a program plan, ordinance or policy of the circulation system, in regard to transit, roadway, bicycle and pedestrian facilities.

Impact Analysis for Impact TRANS-1b

This impact addresses transit, bicycles, and pedestrians as they relate to program plans, ordinances, or policies.

Public Transit, Bicycles, and Pedestrians

The proposed project's potential to conflict with adopted policies, plans, or programs that pertain to public transit, bicycles, and pedestrians was evaluated.

Transit Circulation and Facilities

Suisun Microtransit provides door-to-door transit within Suisun City. Because of the nature of the service, no formal facilities are necessary to enable service. Therefore, the proposed project would result in a less than significant impact to transit circulation and facilities.

Bicycle Circulation and Facilities

With the Central County Bikeway along Petersen Road, the proposed project would be expected to generate demand for bicycle parking at the project site. Since some employees may want to access the facility via bicycle, bike parking shall be provided, consistent with General Plan Policy T-6.6. Through the design review process with the City, the bicycle facilities for the project frontage on Walters Road and Petersen Road would be designed in accordance with the City's design guidelines. Therefore, the proposed project would result in a less than significant impact to bicycle circulation and facilities.

Pedestrian Circulation and Facilities

There are currently no sidewalks along the project's roadway frontage on Petersen Road. The proposed project may generate a moderate volume of pedestrian trips along Petersen Road, especially with the Walmart Shopping Center located just west of the project site and the sports fields to the east. The City requires that any new developments provide pathways that link to sidewalks, trails, streets, and adjacent transit stops, consistent with Policy T-6.13 of the City's General Plan. Also, pursuant to General Plan Policy T-2.3, the City requires new developments to be highly connected internally and connected with adjacent developed areas. It is understood that the applicant would work with the City to provide the adequate internal pedestrian circulation and facilities, including but not limited to a ten-foot-wide sidewalk along the project's Petersen Road frontage. Through the design review process with the City, the sidewalks provided along the project frontage on Walters Road and Petersen Road would be designed in accordance with the City's design guidelines. Therefore, the proposed project would result in a less than significant impact to pedestrian circulation and facilities.

Level of Significance Before Mitigation for Impact TRANS-1b

Less than significant impact.

Mitigation Measures for Impact TRANS-1b

None required.

Level of Significance After Mitigation for Impact TRANS-1b

Less than significant impact.

Vehicle Miles Traveled

Impact TRANS-2:	**The proposed project may conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).**

Impact Analysis

SB 743 established a change in the metric to be applied for determining traffic impacts associated with development projects. Rather than the delay-based criteria associated with an LOS analysis, the increase in VMT as a result of a project is now the basis for determining impacts. The SB 743 VMT analysis for this project was conducted in accordance with the recommendations in the "Suisun City SB 743 Implementation Summary of Findings and Recommendations for VMT-Based CEQA

Thresholds" technical memorandum, July 10, 2020 (further referred to as the VMT Guidelines).[3] As recommended by the Guidelines, the City of Fairfield Travel Forecast Model was used to estimate the VMT baseline for the proposed project.

Within the City of Fairfield model, the project site initially had an estimated daily trip generation of 9,110 trips. As such, a Fratar process was implemented to adjust the model-generated daily trips of the project to be more aligned with the projected number of daily trips for the proposed project per the ITE trip rate. With the Fratar adjustments, the VMT per employee was calculated on a consistent number of vehicle trips based on an ITE trip generation projection and the project trip distribution and trip lengths from the City of Fairfield model.

Exclusion of Heavy Truck Trips

According to the City's VMT Guidelines, medium and heavy truck trips should be excluded in CEQA SB 743 VMT analysis. Consequently, only passenger vehicle/light duty truck trips were included in the CEQA Transportation section VMT analysis, as most employees would not be commuting to/from the site in a medium or heavy truck. Medium and heavy truck trips are included in the inputs for the other CEQA sections that use VMT as an input, however.

The average 2020 VMT per employee for home-based work trips is 14.8 miles; 15 percent less than this figure would result in a VMT threshold of 12.6. For 2035, the average VMT per employee is projected to be 13.7, so the threshold of 15 percent less that this figure would be 11.7 VMT per employee. The Big Data-based passenger vehicle and light duty truck one-way trip length for similar sites near the project site is 13.2, so the round-trip value is 26.4. These findings are summarized in **Error! Not a valid bookmark self-reference.**.

Table 3.12-28: Vehicle Miles Traveled Findings

Scenario	Commute VMT Per Employee with Project	City's Threshold
2020 Base Year	26.4	12.6
2035 Year with Project	26.4	11.7
Notes: VMT = Vehicle Miles Traveled		

The proposed project's commute VMT per employee would not be less than the threshold of 15 percent below the citywide average, thus the proposed project has a potentially significant VMT impact based on the City's VMT Guidelines and threshold criteria.

[3] Readers should be aware that the City's use of its VMT threshold and its methods for calculating VMT in this context (ascertaining transportation-related impacts) differs from the VMT threshold and methods used for analysis of the greenhouse gas emissions of the proposed project, as found in Section 3.6 (Greenhouse Gas Emissions and Energy). In that latter context, the City was employing and adapting a multi-element significance threshold formulated by the Bay Area Air Quality Management District (BAAQMD) that required consideration of "regional" VMT. The City understood BAAQMD to consider the relevant "region" to be the entire Bay Area and not just the City of Suisun.

The project VMT would need to be reduced to within the City's threshold of significance. Potential VMT reduction measures were estimated based on information published in the California Air Pollution Officers Association (CAPCOA) report *Quantifying Greenhouse Gas Mitigation Measures*, CAPCOA, 2010. This report details a variety of methods for reducing VMT, most notably project location and destination accessibility, and TDM measures.

Implementation of TDM measures, such as those listed below under MM TRANS-2a, would have the potential to reduce VMT. Per CAPCOA, the inclusion of voluntary commute trip reduction measures with incentives can reduce a project's VMT by approximately 1.0 to 6.2 percent; the median of the range (3.6 percent) was applied. CAPCOA estimates that the anticipated range of effectiveness for implementation of a subsidized transit program is a VMT reduction of anywhere between 0.3 and 20.0 percent. Because of the large headways and limited connections to other destinations for the routes that serve the project site, a VMT reduction of 1 percent was applied. A 1 percent VMT reduction was also applied for the bicycle and pedestrian connections proposed by the project. According to the CAPCOA report, the provision of long-term bicycle storage and changing facilities has a minimal effect on VMT but supports the greater trip reduction program by providing opportunities for non-motorized travel. The estimated VMT reduction calculations are summarized in **Error! Not a valid bookmark self-reference.**.

Table 3.12-29: Estimated Employee VMT Reduction

TDM Measure	VMT Reduction (%)	
	Typical Range	Project Estimate
Voluntary Trip Reduction Measures *Carpool Incentives* *Active Transportation Incentives* *Guaranteed Ride Home Program* *Transportation Coordinator*	1.0–6.2	3.6
Subsidized Transit Program	0.3–20.0	1.0
Pedestrian and Bicycle Network Improvements	0.0–2.0	1.0
Total Potential VMT Reduction	**–**	**5.6**

Notes:
VMT = Vehicle Miles Traveled; TDM = Transportation Demand Management

The TDM strategies listed under MM TRANS-2a would result in a reduction to VMT of 5.6 percent, thereby reducing the project's VMT to 24.9 VMT per employee. These reduced values are still greater than the City's thresholds of 12.6 and 11.7 VMT per employee for 2020 and 2035, respectively. At this stage of project planning, it is impractical and infeasible to require additional specific VMT-reducing strategies in the TDM because it is still unknown who might be the end users of these strategies (i.e., what will be the project's employee makeup and where will these employees reside). Therefore, despite a reduction in VMT resulting from mitigation, this impact cannot be mitigated to below City VMT thresholds.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measure

MM TRANS-2a Prior to issuance of the first certificate of occupancy, the applicant shall prepare a Transportation Demand Management (TDM) and monitoring plan for review and acceptance by the City of Suisun City. TDM strategies shall include at least the following to achieve a 5.6 percent reduction in VMT. Additional TDM strategies that could further reduce VMT may become feasible and implementable later in the project development process. The City shall, at its discretion, require periodic reporting by the applicant to confirm the effectiveness of TDM strategies.

1. Showers and lockers to promote biking and walking as commute options;
2. Vanpool program;
3. Do-it-yourself bicycle repair stations;
4. Guaranteed Ride Home program;
5. Designating a Transportation Coordinator;
6. Preferential carpool and vanpool parking;
7. Web portal for carpooling.

Level of Significance After Mitigation

Significant unavoidable impact.

Roadway Safety

Impact TRANS-3: The proposed project may substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Impact Analysis

This impact addresses roadway safety including the adequacy of Petersen Road, project access, and internal circulation.

Petersen Road Daily Volumes

Near-Term

Based on the projected near-term volumes for Petersen Road with the proposed project, the daily segment volume on Petersen Road would be 4,800 vehicles (including autos and trucks [converted to PCE]). This would be adequately served by a two-lane road.

Cumulative

Based on the projected cumulative volumes for the year 2035, and with the project-generated trips added, Petersen Road would be expected to carry 5,000 trips per day (including autos and trucks [converted to PCE]). This would be adequately served by a two-lane road.

Access Review

The project truck trips would be accessed via three driveways along Petersen Road. The proposed traffic control for each driveway is stop-controlled for the driveway approach. For the analysis, Driveway 1 is the furthest west with Driveway 3 the furthest east. There would also be one signalized driveway on Walters Road that would be used by employees.

It is noted that the shoulder along the southern side of Petersen Road is currently used by Travis Air Force Base as a dedicated truck only lane. For the analysis, the Travis Air Force Base access lane was assumed to remain as is, however, with breaks in the striping at the project's driveways.

Consideration was given to the type of traffic control needed at the Petersen Road driveways and the need for turn lanes to better facilitate the movement of trucks into and out of the site.

Driveway Design Considerations

Curb Return Radius

Each driveway would be designed for the type of vehicles it is intended to serve. All of the proposed project driveways on Petersen Road would be designed to have large curb return radii for trucks, while the Walters Road driveway shall be designed to discourage trucks from entering the site. At the Walters Road driveway, a truck shall be able to navigate the driveway only by mounting the center median on the east leg of the intersection in the project site. MM TRANS-3a requires that Petersen Road project driveways be designed to accommodate vehicles with large turning radii, while the Walters Road driveway would be designed to discourage truck access. This includes, but is not limited to, design elements like mountable curbs, wayfinding signage, and striping indicating the driveway is not for commercial trucks. Through the design review process with the City, sufficient curb return radii for the trucks at the project driveways would be designed for a less than significant impact.

Sight Distance

At unsignalized intersections or driveways a substantially clear line of sight should be maintained between the driver of a vehicle waiting at the crossroad and the driver of an approaching vehicle. Adequate time must be provided for the waiting vehicle to either cross, turn left, or turn right, without requiring the through traffic to radically alter its speed. Sight distance should be measured from a 3.5-foot height at the location of the driver on the minor road to a 4.25-foot object height in the center of the approaching lane of the major road. Setback for the driver on the crossroad shall be a minimum of 15 feet, measured from the edge of the traveled way.

Sight distance along Petersen Road at the unsignalized project driveways was evaluated on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distances for a minor street approach that is a driveway are based on stopping sight distance, which uses the approach travel speeds as the basis for determining the recommended sight distance.

Sight distances at the proposed driveways on Petersen Road were reviewed using the site plan and available aerials. Based on a posted speed of 45 mph, the minimum stopping sight distance needed is 360 feet. The conditions along Petersen Road are flat and straight, so sight lines would be

adequate for distances greater than 360 feet if the Air Force Base dedicated truck access lane is not in use. However, when large vehicles would be parked or stopping along the southern side of Petersen Road in the Air Force Base dedicated truck only lane, these sight lines would be obstructed. As such, ”KEEP CLEAR” markings and “DO NOT BLOCK DRIVEWAY” signage should be installed at the access points on Petersen Road to facilitate circulation into and out of the project site. This recommendation is reflected in MM TRANS-3b.

Traffic Signal Warrants

A signal warrant analysis was performed to determine potential need for a traffic signal on Petersen Road at each of project driveways. Chapter 4C of the *California Manual on Uniform Traffic Control Devices for Streets and Highways* (CA-MUTCD) provides guidance on when a traffic signal should be considered. The signal warrant was evaluated using the Peak-hour Warrant 3.

Warrant 3, which is often the first warrant to be met, has a notice that this signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time. Under the Peak-hour Warrant the need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:

A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:
    1. The total stopped time delay experienced by the traffic on one minor street approach (one direction only) controlled by a stop sign equals or exceeds: four vehicle-hours for a one-lane approach; or five vehicle-hours for a two-lane approach, and
    2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and
    3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.

B. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.

The peak-hour volume signal warrant was evaluated for the project driveways under the Near-Term and Cumulative scenarios with the addition of projects trips. Under all scenarios, a traffic signal would not be warranted at any of the driveways on Petersen Road. Stop signs on the project driveways would therefore be expected to provide adequate traffic control into and out of the project site.

Left-Turn Lanes

Petersen Road Turn Lanes

The need for left-turn lanes on Petersen Road at the project driveways was evaluated on the basis of criteria contained in the *Intersection Channelization Design Guide*, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985, as well as a more recent update of the methodology developed by the Washington State Department of Transportation. The NCHRP report references a methodology developed by M.D. Harmelink that includes equations that can be applied to expected or actual traffic volumes in order to determine the need for a left-turn pocket based on safety issues. Under Near-Term and Cumulative scenarios with project-generated traffic volumes, a left-turn lane would not be warranted on Petersen Road at any of the three project driveways.

Right-Turn Lanes

The need for a right-turn lane or taper was evaluated based on criteria contained in *Intersection Channelization Design Guide*, NCHRP Report No. 279, Transportation Research Board, 1985.

Petersen Road Turn Lanes

The need for a right-turn lane or taper was also evaluated for each of the project driveways along Petersen Road. Using the same criteria contained in the *Intersection Channelization Design Guide*, the warrants were evaluated for Near-Term and Cumulative scenarios with project-generated trips. A right-turn lane was found to be warranted on Petersen Road at Project Driveway 3 under the Near-Term and Cumulative With Project scenarios. A right-turn lane would not be warranted at other two project driveways under either the Near-Term or Cumulative scenario.

The Travis Air Force Base stacking lane would remain along the south side of Petersen Road fronting the proposed project, with breaks in the striping only for driveway access. While the lane is not in use, it can serve as a turn lane for vehicles. While the stacking lane is in use, Airbase vehicles would be queued along Petersen Road, potentially blocking access points to the site. Since the lane is used infrequently, adding a separate striped right-turn lane at Project Driveway 3 in addition to the existing stacking lane would not be necessary. Installing “KEEP CLEAR” striping and “DO NOT BLOCK DRIVEWAY” signage would enable access into and out of the site during Airbase trucking activities and is reflected in MM TRANS-3b. Exhibit 3.12-16 depicts truck turning templates for outbound movements on Petersen Road.

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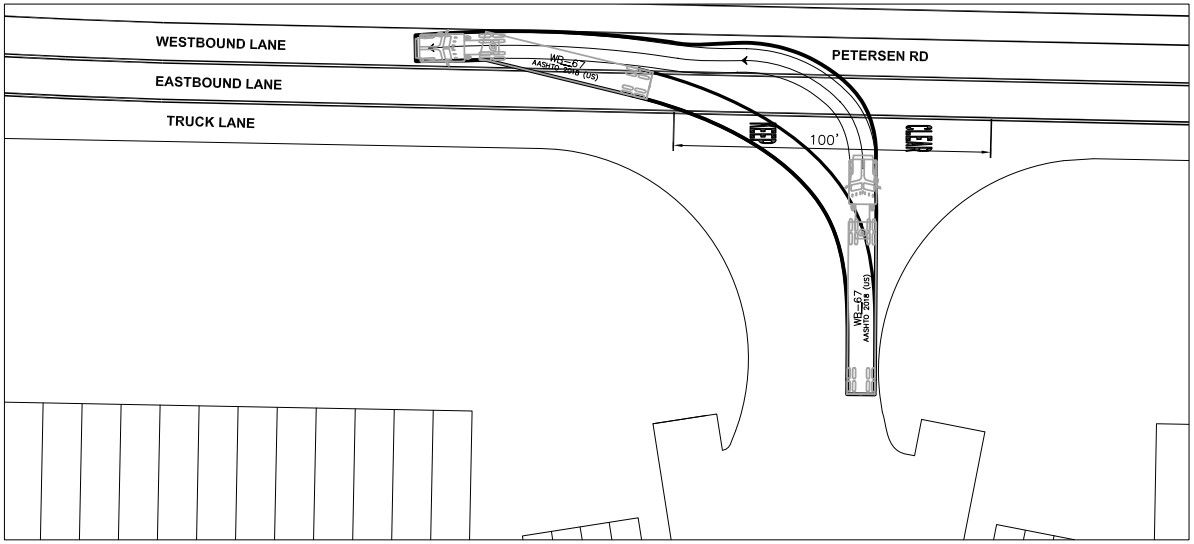
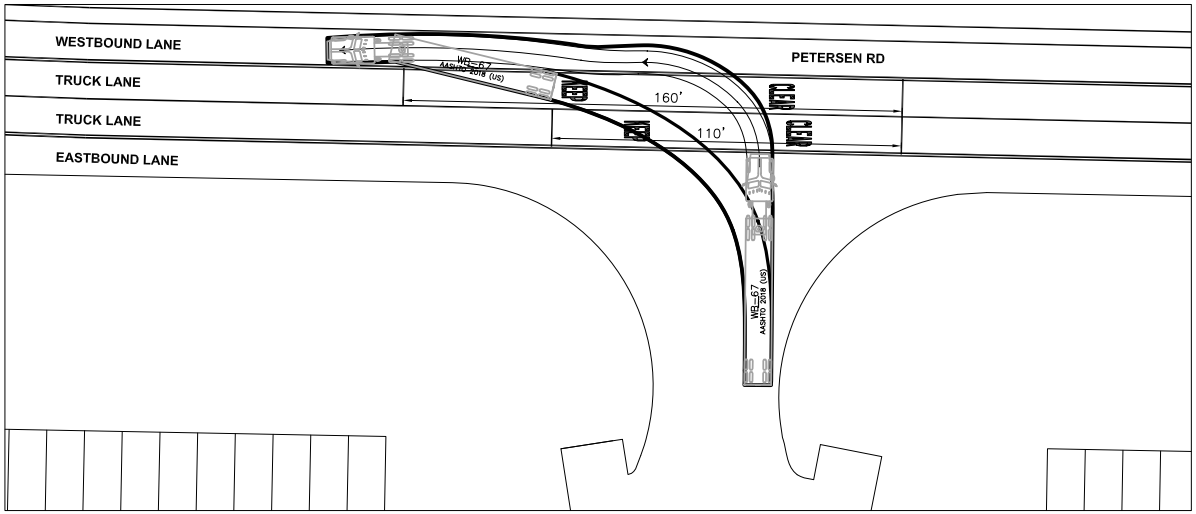
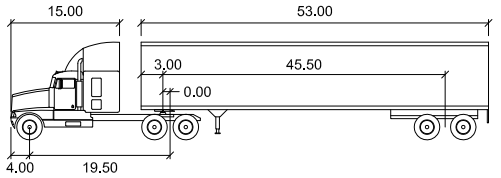


Existing



Two Median Truck Lanes



WB-67

feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

Source: W-Trans, 04/19/2023.

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Exhibit 3.12-16
Truck Turning Templates

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Walters Road Right-Turn

The need for a right-turn lane or taper was also evaluated for the Walters Road project driveway under Near-Term and Cumulative scenarios with project-generated trips. A right-turn taper was found to be warranted on northbound Walters Road under the Near-Term Plus Project scenarios and evening Cumulative With Project scenarios. A right-turn lane was also warranted under the morning Cumulative scenario. The recommendation to include a northbound right-turn lane is reflected in MM TRANS-3c.

Queueing

The projected 95th percentile queues were determined for each of the proposed driveways during the AM and PM peak-hours under the Cumulative Plus Project scenario. The projected on-site queues are expected to be one to two vehicles, with the highest projected queue at Driveway 3 during the evening peak-hour. The queueing results are summarized in Table 3.12-30.

It is recommended that the available space to queue on-site be sufficient to accommodate at least five passenger vehicles, or about 125 feet. This recommendation is reflected in MM TRANS-3d. Through a design review process with the City, the stacking space to accommodate on-site queueing at Driveway 3 would be confirmed as included in the proposed project design.

Table 3.12-30: 95th Percentile Queueing at the Project Driveways

Intersection	Cumulative Plus Project	
	AM	PM
Driveway 1		
NB Approach	18	56
EB Right-turn Lane	2	2
Driveway 2		
NB Approach	11	35
Driveway 3		
NB Approach	40	116
EB Right-turn Lane	6	9

Notes:
All distances are measured in feet; NB = northbound; SB = southbound; EB = eastbound; WB = westbound; **bold text** = deficient operation
Source: W-Trans 2021.

Access Review–Petersen Road/Walters Road Intersection

The intersection of Petersen Road/Walters Road was reviewed to determine whether intersection modifications would be needed to accommodate westbound left-turning trucks. The analysis was conducted based on Surface Transportation Assistance Act (STAA) trucks. It was found that a westbound left-turning truck driver would be able to navigate the existing intersection as configured but would require the use of both receiving lanes to complete the maneuver. Further, to perform the

maneuver, the turning truck would need to conflict with the opposing eastbound left-turn vehicle path of travel. As such, the traffic signal phasing at the intersection should be programmed so that the east–west left-turn phases do not coincide with one left-turn phase lagging and the other phase leading. This is included in MM TRANS-3e.

Internal Circulation

A qualitative review of the internal circulation system was performed. As proposed, most of the truck routes would be separated from passenger vehicles and the trucks would access the site exclusively from the three Petersen Road driveways. Passenger vehicles would be able to access the site from any of the driveways, including the driveway that would become the fourth leg of the Walters Road/Walmart driveway signalized intersection. Located on-site about 50 feet east of the Walters Road/Walmart driveway signalized intersection, there would be a three-way stop-controlled intersection with the uncontrolled movement on the eastbound approach (inbound to the project site from Walters Road). It is recommended that the on-site intersection be two-way north–south stop-controlled to better facilitate the flow of traffic into and out of the site. This recommendation is included in MM TRANS-3f.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-3a Prior to issuance of building permits, the applicant shall prepare and submit improvement plans with truck turning movements for approval by the City of Suisun City demonstrating that all driveways intended for truck access are designed to meet standards for vehicles with large turning radii. The Walters Road driveway shall be designed, striped, and signed to discourage truck drivers from entering, although trucks could still maneuver through the driveway.

MM TRANS-3b Prior to issuance of building permits, the applicant shall prepare and submit improvement plans incorporating for each driveway on Petersen Road, “KEEP CLEAR” pavement markings in the dedicated eastbound truck lane and “DO NOT BLOCK DRIVEWAY” signs facing eastbound traffic. The applicant shall coordinate with the City of Suisun City to install any devices within the City’s right-of-way.

MM TRANS-3c Prior to issuance of building permits, the applicant shall prepare and submit improvement plans for approval by the City of Suisun City for a northbound right-turn lane at the Main Driveway/Walters Road intersection.

MM TRANS-3d Prior to issuance of building permits, the applicant shall prepare and submit improvement plans for approval by the City of Suisun City demonstrating that on-site available storage capacity at the northbound Driveway 3 shall be sufficient for at least five passenger vehicles (up to 125 feet).

MM TRANS-3e Prior to and as a condition of issuance of certificates of occupancy for the occupancy of the proposed project, the applicant shall work with the City to implement prepare

the signal timing for the intersection of Petersen Road/Walters Road so that the east–west left-turning phases do not coincide. The applicant is responsible for the full cost of this improvement.

MM TRANS-3f Prior to issuance of building permits, the applicant shall prepare and submit on-site plans for approval by the City of Suisun City indicating the on-site signing, striping, and traffic control of the on-site intersection 50 feet to the east of the Walters Road/Main Driveway intersection. The intersection shall be striped per the most recent California Manual on Uniform Traffic Control Devices (CA-MUTCD) guidance and have two-way north–south stop control.

Level of Significance After Mitigation

Less than significant impact.

Emergency Access

Impact TRANS-4: The proposed project may result in inadequate emergency access.

Impact Analysis

The proposed project would take access from Walters Road and Petersen Road at three locations. Both roadways are designated truck routes and, thus, are intended for use by all classes of vehicles, including large emergency vehicles such as fire engines and ladder trucks. As discussed in Impact TRANS-3a, project driveways would be designed to be accessible to appropriate vehicle types and trucks and, therefore, would also be accessible to large emergency vehicles. Thus, adequate emergency access would be provided. Emergency access impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measure

Implement MM TRANS-3a.

Level of Significance After Mitigation

Less than significant impact.

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3.13 - Utilities and Service Systems

3.13.1 - Introduction

This section describes the existing public services and utilities and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information provided by the Suisun City General Plan, Suisun City Municipal Service Review, the Water Supply Assessment (WSA) prepared by KSN on behalf of the Suisun-Solano Water Authority, and the Fairfield-Suisun Sewer District 2016 Limited Update of Sewer Master Plan prepared by GEI Consultants, Inc. Supporting information is provided in Appendix M.

3.13.2 - Environmental Setting

Water

Suisun-Solano Water Authority (SSWA) provides potable water to customers within the Suisun City limits and unincorporated Solano County. SSWA is a joint powers authority between the City of Suisun City and the Solano Irrigation District (SID).

Water Supply

Both the City of Suisun City and SID have contracts with the Solano County Water Agency (SCWA) for water supplies from the federal Solano Project. SCWA is the contracting agency with the United States Bureau of Reclamation (USBR) for water supplies from the Solano Project. SCWA sells Solano Project water to SSWA. SSWA has a water treatment facility that receives surface water from the Solano Project. The City of Suisun City also has an annual entitlement of 1,500 acre-feet from the State Water Project's North Bay Aqueduct. In August 2022, the City of Suisun City and SID entered into a second amended implementation/lease agreement that allows the City to transfer its State Water Project entitlement to SID in exchange for additional Solano Project water deliveries to SSWA. A copy of this agreement is included in Appendix M. Table 3.13-1 summarizes SSWA's annual entitlements. The City of Suisun City is unable to directly utilize its State Water Project entitlement because of a lack of connection to the SSWA treatment plant.

Table 3.13-1: Suisun-Solano Water Authority Annual Water Entitlements

Solano Project				
Agency	Annual Entitlement (acre-feet)			
Suisun City	1,600			
Solano Irrigation District (Ag and M&I)	141,000			
State Water Project				
Agency/Year	Annual Entitlement (acre-feet)[1]			
	2010	2015	2020	2025
Suisun City	1,050	1,300	1,300	1,300

Notes:
[1] In 2015 Suisun City reached its maximum Table A Entitlement.
Source: KSN. 2022.

Table 3.13-2 summarizes the quantity of water received by SSWA under the existing supply entitlements between 2000 and 2020.

Table 3.13-2: Historic Cement Hill Water Treatment Plant Production and Delivery Summary of Solan Project Water Supplies to SSWA

Year	Total Annual Plant Production (million gallons)	Daily Average Projection (million gallons)	Annual Delivery (acre-feet)	Suisun City[1] (acre-feet)	SID-Suisun[2] (acre-feet)
2000	1,421.99	3.90	4,364	1,600	2,764
2001	1,467.08	4.02	4,503	1,600	2,903
2002	1,549.48	4.25	4,756	1,600	3,156
2003	1,555.60	4.26	4,774	1,600	3,174
2004	1,636.76	4.48	5,023	1,600	3,423
2005	1,642.54	4.50	5,041	1,600	3,441
2006	1,520.30	4.17	4,666	1,600	3,066
2007	1,537.80	4.21	4,720	1,600	3,120
2008	1,540.22	4.22	4,727	1,600	3,127
2009	1,441.89	3.95	4,425	1,600	2,825
2010	1,340.60	3.67	4,114	1,600	2,514
2011	1,300.80	3.56	3,992	1,600	2,392
2012	1,317.90	3.61	4,045	1,600	2,445
2013	1,395.40	3.82	4,283	1,600	2,683
2014	1,205.70	3.30	3,700	1,600	2,100
2015	1,058.40	2.90	3,248	1,600	1,648
2016	1,020.80	2.80	3,133	1,600	1,533
2017	1,084.97	2.97	3,330	1,600	1,730
2018	1,097.93	3.01	3,369	1,600	1,769
2019	1,113.27	3.05	3,417	1,600	1,817
2020	1,173.51	3.22	3,601	1,600	2,001

Notes:
SID = Solano Irrigation District
SSWA = Suisun-Solano Water Authority
[1] Represents the water supplies delivered to SSWA by Suisun City under their Solano Project entitlement.
[2] Represents the water supplies delivered to SSWA.
Source: KSN. 2022.

Projected Demand and Supply

Table 3.13-3 summarizes past and projected population growth for the City of Suisun City. As shown in the table, the City is expected to add more than 3,700 people to its population between 2020 and 2045.

Table 3.13-3: Existing and Projected Population Growth within Suisun City

Year	Population	Estimated Households
2010	28,111[1]	8,924[2]
2015	29,492[3]	8,991[3]
2020	29,518[4]	9,293[4]
2025	30,447[5]	9,635[5]
2030	31,151[5]	9,858[5]
2035	31,854[5]	10,080[5]
2040	32,558[5]	10,303[5]
2045	33,261[5]	10,526[5]
Estimated Ultimate Buildout	34,052	10,931

Notes:
[1] 2010 U.S. Census Data, Suisun City.
[2] Calculated from persons per household rate (2010 Census) of 3.15.
[3] 2015 U.S. Census Data with estimated person per household rate of 3.28.
[4] 2020 U.S. Census Data with estimated person per household rate of 3.16 (2016-2020).
[5] Assumes linear population growth and estimated No. of households from 2020-2045.
Source: KSN. 2022.

The annual water supplies necessary to meet the 2045 demand are estimated to be 4,685 acre-feet. This represents an increase of 1,084 acre-feet above the 2020 demand value shown in Table 3.13-2.

Wastewater

Suisun City and Fairfield-Suisun Sewer District (FSSD) jointly operate and maintain the wastewater collection system in Suisun City limits. FSSD operates a regional treatment plant at 1010 Chadbourne Road that treats effluent.

Sewer Collection System

FSSD owns and operates the approximately 70-mile trunk sewer system, which includes all 12-inch and larger sewers and the 12 pump stations and force mains that convey wastewater to the wastewater treatment plant. Suisun City owns and maintains all sewers 10 inches in diameter or smaller. Wastewater flows by gravity or is pumped by smaller stations to four major pump stations that pump wastewater to the treatment plant. Suisun City is served by Suisun Pump Station and three smaller stations: Lawler I Pump Station, Lawler II Pump Station, and Crystal Street Pump Station. Capacity at the Suisun Pump Station is 38.3 million gallons per day (mgd). Typical dry weather flow is 8.1 mgd and wet weather flow is 27 mgd.

The existing FSSD trunk sewer system in the project vicinity consists of a 27-inch-diameter line within Petersen Road between Travis Air Force Base and Walters Road and a 39-inch-diameter line downstream of Walters Road that conveys effluent to the Chadbourne Road Treatment Plant

Treatment Plant

The Chadbourne Road Treatment Plant serves urban areas in central Solano County, including the cities of Fairfield and Suisun City, and Travis Air Force Base. The treatment plant's sewershed is 48 square miles, with a population of more than 135,000. The treatment plant's design capacity is 23.7 mgd and treats 10-15 mgd on a typical day.

The treatment plant provides secondary treatment and discharges treated effluent to Boynton Slough, which is part of Suisun Marsh. The wastewater treatment processes include screening, primary treatment, intermediate treatment by oxidation towers and intermediate clarifiers, secondary treatment with aeration basins, and secondary clarifiers and tertiary treatment via filtration and disinfection. Waste solids are thickened and treated in anaerobic digesters then solids are further concentrated before being disposed at the Potrero Hills Landfill. Approximately 10 percent of treated effluent is recycled for landscape irrigation. All treated effluent is 100 percent compliant with National Pollutant Discharge Elimination System (NPDES) Permit provisions.

Storm Drainage

Suisun City Public Works Department oversees stormwater management within the Suisun City limits. The municipal storm drainage system consists of channels, inlets, underground piping, and basins. Runoff from Suisun City drains to Suisun Marsh.

Project Site Storm Drainage Facilities

Two man-made drainage channels traverse the project site in a north-to-south direction. The drainage channels travel under State Route (SR) 12 in culverts and discharge directly into Suisun Marsh. Aside from these channels, there are no other storm drainage facilities on-site (e.g., inlets, piping, basins, etc.).

Solid Waste

Solano Garbage, a division of Republic Services, provides solid waste and recycling collection, transport, and disposal services under a franchise agreement to commercial, residential, and public sector customers within Suisun City.

Landfill

The Potrero Hills Landfill, located approximately 1 mile south of the project site, is a regional facility that serves Suisun City and numerous other jurisdictions within a 150-mile radius. In 2005, the County of Solano approved a 260-acre expansion that increased capacity to 83.1 million cubic yards. In 2010, the San Francisco Bay Conservation and Development Commission issued a permit allowing the expansion to proceed. Litigation ensued and all appeals were exhausted in 2014; thus, the expansion was cleared to move forward. Table 3.13-4 summarizes the Potrero Hills Landfill characteristics, including those associated with the approved expansion.

Table 3.13-4: Potrero Hills Landfill Summary

Permitted Area	Permitted Daily Throughput	Permitted Disposal Capacity	Remaining Capacity	Permitted Hours of Operation	Permitted Traffic Volume	Estimated Closure Date
525.7 acres (total)	3,400 tons (7-day average)	83.1 million cubic yards	38.8 million cubic yards	Monday–Friday: 24 hours a day	500 inbound daily vehicles (7-day average)	2048
340.0 acres (disposal)	4,330 tons (single day peak)			Saturday-Sunday: 4:00 a.m. to 12:00 a.m.	1,000 inbound daily vehicles (single day peak)	

Notes:
Data obtained from Solid Waste Facility Permit No. 48-AA-0075.
Source: California Department of Resources Recycling and Recovery (CalRecycle). 2012.

3.13.3 - Regulatory Framework

Federal

National Pollutant Discharge Elimination System

Pursuant to Section 402 of the CWA and the Porter-Cologne Water Quality Control Act, municipal stormwater discharges in Suisun City are regulated under the San Francisco Bay Region Municipal Regional Stormwater NPDES Permit, MS4 Order No. 2013-001 (General Permit). In 1987, Congress amended the Clean Water Act to mandate controls on discharges from municipal separate storm sewer systems (MS4s). Acting under the federal mandate and the California Water Code, California Regional Water Quality Control Boards require cities, towns, and counties to regulate activities that can result in pollutants entering their storm drains. All municipalities prohibit non-stormwater discharges to storm drains and require residents and businesses to use Best Management Practices (BMPs) to minimize the number of pollutants in runoff. The Municipal Regional Permit is overseen by the San Francisco Bay Regional Water Quality Control Board (RWQCB). On February 5, 2013, the California State Water Resources Control Board (State Water Board) reissued the Phase II Stormwater NPDES Permit for small MS4s. Provision E.12, "Post-Construction Stormwater Management Program," mandates municipalities to require specified features and facilities—to control pollutant sources, control runoff volumes, rates, and durations, and to treat runoff before discharge from the site—be included in development plans of projects that create or replace 5,000 square feet or more impervious surface as conditions of issuing approvals and permits. The new requirements continue a progression of increasingly stringent requirements since 1989.

Provision E.12 requires all municipal permittees to implement these requirements by June 30, 2015, to the extent allowed by applicable law. This includes projects requiring discretionary approvals that have not been deemed complete for processing and discretionary permit projects without vesting tentative maps that have not requested and received an extension of previously granted approvals.

In July of 2014, the Bay Area Stormwater Management Agencies Association (BASMAA), through the BASMAA Phase II Committee, created the BASMAA Manual to assist applicants for development approvals to prepare submittals that demonstrate their project complies with the NPDES permit

requirements. Applicants who seek development approvals for applicable projects should follow the manual when preparing their submittals. The manual is designed to ensure compliance with the requirements and promote integrated Low Impact Development (LID) design.

Section E.12.c of the General Permit pertains to LID and how it relates to hydromodification management. This Permit provision requires that stormwater discharges not cause an increase in the erosion potential of the receiving stream over the existing condition. Increases in runoff flow and volume must be managed so that the post-project runoff does not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force.

State

California Urban Water Management Planning Act

The Urban Water Management Planning Act (California Water Code Sections 10610–10656) requires that all urban water suppliers prepare Urban Water Management Plans (UWMPs) and update them every 5 years. In preparing an UWMP, an urban water supplier must describe or identify the following, among other things (as set forth in Water Code Section 10631):

- "The service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning."
- "Projected population estimates" based on "data from the State, regional, or local service agency population projections within the service area," in "five-year increments to 20 years or as far as data is available."
- "Past and current water use" and "projected water use."
- "Existing and planned sources of water" for each 5-year increment of the 20-year planning period.
- Specific detailed information about groundwater where it is identified as "an existing or planned source of water available to the supplier."
- "All water supply projects and water supply programs" that may be undertaken to meet "total projected water use," including "specific projects" and the "increase in water supply" expected from each project.
- An estimate of "the implementation timeline for each project or program."
- "Plans to supplement or replace" any "water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors" with "alternative sources or water demand management measures, to the extent practicable."
- "The reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable," for (i) an "average water year," (ii) a "single dry water year," and (iii) "[m]ultiple dry water years."
- "Opportunities for exchanges or transfers of water on a short-term or long-term basis."

- "Opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply."
- "Water demand management measures."

Senate Bill 610: Water Supply Assessments

As revised by Senate Bill (SB) 610 (Stats. 2002, ch. 643), sections 10910 *et seq.* of the California Water Code set forth the circumstances in which California Environmental Quality Act (CEQA) lead agencies must seek preparation of, or prepare themselves, "water supply assessments" for defined proposed "projects." At the time a lead agency determines that a proposed project requires an Environmental Impact Report (EIR), the lead agency shall identify any "public water system" that would serve the project site and shall request that any such entity prepare a WSA for the project. In the absence of such a public water system, the city or county lead agency must prepare its own WSA. Senate Bill 610 functions together with CEQA, in that a WSA must be included in "any environmental document" for any "project" subject to Senate Bill 610. (Water Code § 10911(b); see also State CEQA Guidelines Section 15155(e); see also *Id*., Section 15361 [defines "environmental documents" to include "Negative Declarations. . . [and] draft and final EIRs"]).

One of the fundamental tasks of a WSA is to determine whether "total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses." (Water Code § 10910 (c)(3), (c)(4)). In making such a determination, the authors of the WSA must address several factors. Specifically, the WSA must contain information regarding existing water supplies, projected water demand, and dry year supply and demand. In *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 433 ("*Vineyard*"), the California Supreme Court briefly summarized the key content requirements as follows:

> With regard to *existing* supply entitlements and rights, a water supply assessment must include assurances such as written contracts, capital outlay programs and regulatory approvals for facilities construction . . . but as to additional *future* supplies needed to serve the project, the assessment need include only the public water system's plans for acquiring the additional supplies, including cost and time estimates and regulatory approvals the system anticipates needing. (Water Code §§ 10910, subd. (d)(2), 10911, subd. (a)).
> (Original italics.)

"Existing" water supplies can be based on different kinds of legal rights or arrangements, including entitlements, water rights, and water service contracts. In many cases, these supplies are likely already described in detail in the supplier's UWMP (Water Code § 10631(b)). Suppliers are expressly permitted to rely on information contained in the most recently adopted UWMPs, so long as the water needed for proposed development project was accounted for therein (Water Code § 10910(c)(2)).

In preparing a WSA, the public water system must disclose and document the quantity of water received from these various sources. Such supplies must be demonstrated by providing the following:

(A) Written contracts or other proof of entitlement to an identified water supply.

(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.

(C) Federal, State, and local permits for construction of necessary infrastructure associated with delivering the water supply.

(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

(*Id*., subd. (d)(2).)

A finding of insufficiency in a WSA does not require a city or county to deny or downsize a proposed development project. Rather, after identifying a shortfall, the public water system must provide its plans for acquiring "additional supplies" (or what the California Supreme Court called "future" supplies) (Water Code § 10911(a)). These plans should include information concerning the following:

(1) The estimated total costs, and the proposed method of financing the costs, associated with acquiring the additional water supplies.

(2) All federal, State, and local permits, approvals, or entitlements that are anticipated to be required in order to acquire and develop the additional water supplies.

(3) Based on the considerations set forth in paragraphs (1) and (2), the estimated timeframes within which the public water system, or the city and county. . . expects to be able to acquire additional water supplies.

These particular Water Code requirements for assessments are action-forcing, in that they require the public water system to lay out a roadmap for obtaining new water supplies once it becomes aware that existing supplies are insufficient for the proposed project together with other foreseeable planned growth.

Regardless of the information provided to a city or county in a WSA, Senate Bill (SB) 610 stops short of preventing cities and counties from approving the "projects" at issue absent "sufficient" water supplies. But where "existing water supply entitlements, water rights, or water service contracts" are "insufficient" to serve proposed projects, SB 610 does require that, in approving projects in the face of insufficient supplies, cities and counties must "include" in their "findings for the project[s]" their "determination[s]" regarding water supply insufficiency. Senate Bill 610 functions together with CEQA, in that a WSA must be included in "any environmental document" for any "project" subject to SB 610. (*Id*., subd. (b); Guidelines § 15155, subd. (e); see also *Id*., § 15361 [defines "environmental documents" to include "Negative Declarations. . . [and] draft and final EIRs"]).

Recycled Water Policy

On February 3, 2009, by Resolution No. 2009-0011, the California State Water Resources Control Board (State Water Board) adopted a Recycled Water Policy in an effort to move toward a sustainable water future. In the Recycled Water Policy states "we declare our independence from relying on the vagaries of annual precipitation and move toward sustainable management of surface waters and groundwater, together with enhanced water conservation, water reuse and the use of stormwater."

The following goals were included in the Recycled Water Policy:

- Increase use of recycled water over 2002 levels by at least one million acre-feet per year by 2020 and at least two million acre-feet per year by 2030.
- Increase the use of stormwater over use in 2007 by at least 500,000 acre-feet per year by 2020 and at least one million acre-feet per year by 2030.
- Increase the amount of water conserved in urban and industrial areas by comparison to 2007 by at least 20 percent by 2020.
- Included in these goals is the substitution of as much recycled water for potable water as possible by 2030.

The Recycled Water Policy provides direction to the RWQCBs regarding issuing permits for recycled water projects, addresses the benefits of recycled water, addresses a mandate for use of recycled water and indicates the State Water Board will exercise its authority to the fullest extent possible to encourage the use of recycled water.

The Recycled Water Policy also indicates that some groundwater basins contain salts and nutrients that exceed or threaten to exceed water quality objectives established in basin plans and states that it is the intent of this Recycled Water Policy that all salts and nutrients be managed on a basin-wide or watershed-wide basis through development of regional or sub-regional management plans. Finally, the Recycled Water Policy addresses the control of incidental runoff from landscape irrigation projects, recycled water groundwater recharge projects, anti-degradation, control of emerging constituents and chemicals of emerging concern and incentives for use of recycled water.

In accordance with the provisions of the Recycled Water Policy, a Constituents of Emerging Concerns (CEC) Advisory Panel was established to address questions about regulating CECs with respect to the use of recycled water. The CEC Advisory Panel's primary charge was to provide guidance for developing monitoring programs that assess potential CEC threats from various water recycling practices, including groundwater recharge/reuse and urban landscape irrigation. On June 25, 2010, the CEC Advisory Panel provided recommendations to the State Water Board and California Department of Public Health in their Final Report "Monitoring Strategies for Chemicals of Emerging Concern in Recycled Water–Recommendations of a Scientific Advisory Panel." The State Water Board used those recommendations to amend the Recycled Water Policy in 2013 (State Water Board Resolution No. 2013-003).

The April 2013 amendment provides direction to the RWQCBs on monitoring requirements for CECs in recycled water. The monitoring requirements pertain to the production and use of recycled water for groundwater recharge reuse by surface and subsurface application methods, and for landscape irrigation. The amendment identifies three classes of constituents to monitor:

- Human health-based CECs: CECs of toxicological relevance to human health.
- Performance indicator CECs: An individual CEC used for evaluating removal through treatment of a family of CECs with similar physicochemical or biodegradable characteristics.
- Surrogates: A measurable physical or chemical property, such as chlorine residual or electrical conductivity that provides a direct correlation with the concentration of an indicator compound. Surrogates are used to monitor the efficiency of CEC treatment.

Only groundwater recharge reuse facilities will be required to monitor for CECs and surrogates. Surface application and subsurface application facilities will have different mandatory CECs and a different monitoring schedule. Monitoring is not required for recycled water used for landscape irrigation projects that qualify for streamlined permitting unless monitoring is required under the adopted salt and nutrient management plan. Streamlined permitting projects must meet the criteria specified in the Policy including compliance with Title 22, application at agronomic rates, compliance with any applicable salt and nutrient management plan, and appropriate use of fertilizers.

Water Conservation Act of 2009

Requirements regarding per capita water use targets are defined in the Water Conservation Act of 2009, which was signed into law in November 2009 as part of a comprehensive water legislation package. Known as SB X7-7, the legislation sets a goal of achieving a 20 percent reduction in urban per capita water use statewide by 2020. SB X7-7 requires that retail water suppliers define in their 2010 UWMP the gallons-per-capita-per-day targets for 2020, with an interim 2015 target.

Assembly Bill 1881

AB 1881 expanded previous legislation related to landscape water use efficiency. AB 1881, the Water Conservation in Landscaping Act of 2006, enacted landscape efficiency recommendations of the California Urban Water Conservation Council for improving the efficiency of water use in new and existing urban irrigated landscapes in California. AB 1881 required the California Department of Water Resources (DWR) to update the existing Model Local Water Efficient Landscape Ordinance (MWELO) and local agencies to adopt the updated model ordinance or an equivalent. The law also requires the California Energy Commission to adopt performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the State legislature passed Assembly Bill (AB) 939, the California Integrated Waste Management Act of 1989, effective January 1990. The legislation required each local jurisdiction in

the State to set diversion requirements of 25 percent by 1995 and 50 percent by 2000; established a comprehensive statewide system of permitting, inspections, enforcement, and maintenance for solid waste facilities; and authorized local jurisdictions to impose fees based on the types or amounts of solid waste generated. In 2007, SB 1016, Wiggins, Statutes of 2008, Chapter 343, introduced a new per capita disposal and goal measurement system that moves the emphasis from an estimated diversion measurement number to using an actual disposal measurement number as a per capita disposal rate factor. As such, the new disposal-based indicator (pounds per person per year) uses only two factors: (1) a jurisdiction's population (or in some cases employment) and (2) its disposal as reported by disposal facilities.

Assembly Bill 2882

AB 2882 was passed in 2008 and encourages public water agencies throughout California to adopt conservation rate structures that reward consumers who conserve water. AB 2882 clarifies the allocation-based rate structures and establishes standards that protect consumers by ensuring a lower base rate for those who conserve water.

Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings

Title 24, Part 6, of the California Code of Regulations establishes California's Energy Efficiency Standards for Residential and Nonresidential Buildings. The standards were updated in 2013. The 2013 standards set a goal of reducing growth in electricity use by 561.2 gigawatt-hours per year (GWh/y) and growth in natural gas use by 19 million therms per year. The savings attributable to new nonresidential buildings are 151.2 GWh/y of electricity savings and 3.3 million therms. For nonresidential buildings, the standards establish minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., heating, ventilation, and air conditioning [HVAC]; and water heating systems), indoor and outdoor lighting, and illuminated signs.

Local

City of Suisun City

General Plan

Suisun City General Plan sets forth the following goals, objectives, and policies relevant to public services and utilities:

Objective OSC-7 Assess long-term water supply and incorporate water conservation measures within Suisun City.

Policy OSC-7.2 The City will require demonstration of adequate long-term water supply for large development projects, as defined in Water Code 10912(a) (also known as Senate Bills 610 and 221).

Policy OSC-7.3 The City will condition approval of new developments on the availability of sufficient water supply, storage, and fire flow (water pressure), per City standards.

Policy OSC-7.4 The City will require the use of water conservation technologies, such as low-flow toilets, efficient clothes washers, and efficient water-using industrial equipment in new construction, in accordance with code requirements.

Policy OSC-7.8 New developments shall incorporate climate-appropriate landscaping to reduce water demand and ongoing maintenance costs.

Goal OSC-8 Improve energy efficiency, encourage renewable energy generation and use, and reduce ongoing household and business energy costs.

Objective OSC-8 Exceed statewide energy efficiency gains in Suisun City between present and 2035.

Policy-OSC-8.1 The City will implement relevant policies from the Land Use and Transportation Elements that encourage connected transportation networks, provide for alternate modes of transportation, and encourage mixed-use and compact development patterns to reduce transportation energy use in Suisun City.

Policy OSC-8.2 The City will require that new developments are designed for maximum energy efficiency, taking into consideration such factors as building-site orientation and construction, articulated windows, roof overhangs, appropriate building and insulation materials and techniques, and other architectural features that improve passive interior climate control.

Policy OSC-8.3 The City will encourage landscaping methods, materials, and designs that promote energy conservation.

Policy OSC-8.5 The City will require that new buildings meet State standards for energy efficiency and provide for renewable energy development and use, to the greatest extent feasible.

Goal CFS-1 Provide facilities and services to new and existing residents and businesses at levels that maintain or improve the local quality of life and fiscal sustainability of the community.

Objective CFS-1 Plan, prioritize, program, and fund community facilities and services to accommodate development anticipated at buildout of the 2035 General Plan.

Policy CFS-1.1 New developments will be required to demonstrate, to the satisfaction of the City Engineer, that existing services and utilities can accommodate the increased demand generated by the subject project or that project conditions would adequately mitigate for impacts associated with addition demand.

Goal CFS-2 Maintain public safety facilities and services for new and existing residents and businesses that protect the public health, safety, and welfare.

Objective CFS-2 Provide staffing levels, facilities, and community design required to maintain acceptable emergency response times and effective public safety services.

Policy CFS-2.2 New developments will be required to design, and the City will maintain streets that facilitate acceptable emergency access and response times.

Policy CFS-2.3 New developments shall be designed, constructed, and equipped consistent with requirements of the California Fire Code to reduce fire risk.

Policy CFS-2.5 The Police Department should review development proposals and provide recommendations that would ensure adequate access and community surveillance.

Policy CFS-2.6 The Fire Department should review development proposals and provide recommendations that would ensure adequate emergency access, fire suppression equipment, and other features that reduce fire risk.

Goal CFS-6 Provide an adequate supply of clean and safe water to meet anticipated demand.

Objective CFS-6 Ensure ongoing maintenance and improvements to the water system and adequate supply to meet the needs of existing and new development.

Policy CFS-6.1 New developments will be required to demonstrate the availability of adequate water supply and infrastructure, including during multiple dry years and adequate fire flow pressure, prior to approval.

Policy CFS-6.4 New developments shall include water conservation technologies, such as low-flow toilets, efficient clothes washers, and efficient water-using industrial equipment, in accordance with State law.

Goal CFS-7 Provide for adequate sewage system capacity, treatment, and disposal.

Objective CFS-7 Facilitate Fairfield-Suisun Sewer District's Master Plan and ensure that future sewage systems are designed to meet or exceed all applicable water quality standards and are located to protect waterways, the Suisun Marsh, and other groundwater resources.

Policy CFS-7.2 New developments will be required to contribute on a fair-share basis toward implementation of system improvements, as determined by the City Engineer.

Goal CFS-8 Provide storm drainage and flood protection systems that protect property, ensure public safety and environmental health, and prevent erosion and flooding.

Objective CFS-8 Maintain adequate storm drainage and plan for phased improvements to drainage infrastructure to serve new growth and address existing deficiencies.

Policy CFS-8.2 New developments will be required to construct and dedicate facilities for drainage collection, conveyance, and detention and/or contribute on a fair-share basis to areawide drainage facilities that serve additional demand generated by the subject project

Goal CFS-9 Provide safe, convenient, and environmentally responsible waste disposal and recycling services.

Objective CFS-9 To ensure adequate solid waste disposal services and increase recycling and reuse among residents, businesses, and the City.

Policy CFS-9.2 New developments will be required to demonstrate adequate capacity to accommodate solid waste demand, including processing, recycling, transportation, and disposal.

Policy CFS-9.5 New developments and significantly remodeled existing uses will be required to incorporate convenient exterior storage areas for solid waste, recyclables, and green waste.

3.13.4 - Methodology

This section is based on the information provided by a number of sources, which are described below.

KSN prepared a WSA for SSWA that evaluated water supply impacts in accordance with Water Code Section 10910. The WSA is provided in its entirety in Appendix M. The WSA is a required component of the environmental review process under CEQA. The document concludes that, although "existing" supplies are not sufficient to serve the proposed project, a potential "additional" or "future" supply that could be feasibly pursued. It would involve an exchange between Suisun City and SID by which the City transferred its State Water Project North Bay Aqueduct "entitlement" for a reliable annual supply for the project using Solano Project water from Lake Berryessa.

The FSSD 2016 Limited Update of Sewer Master Plan prepared by GEI Consultants, Inc. assessed the adequacy of the FSSD sewer collection system to serve approved and planned development within its service area. FSSD identified the need to update the current sewer system models and assess the impact of these proposed development projects on the currently proposed improvement projects as well as identifying other sewer system improvements that might be triggered by the land use changes. The Limited Update is provided in Appendix H.4.

Additionally, FirstCarbon Solutions (FCS) reviewed relevant City documents, including Suisun City General Plan and Suisun City Municipal Service Review. FCS also reviewed document and websites produced by Suisun City, FSSD, and the California Department of Resources Recycling and Recovery.

3.13.5 - Thresholds of Significance

Appendix G to the CEQA Guidelines is a sample Initial Study Checklist that includes questions for determining whether impacts related to utilities and service systems are significant. These questions reflect the input of planning and environmental professionals at the California Governor's Office of

Planning and Research (OPR) and the California Natural Resources Agency, based on input from stakeholder groups and experts in various other governmental agencies, nonprofits, and leading environmental consulting firms. As a result, many lead agencies derive their significance criteria from the questions posed in Appendix G. The City has chosen to do this for this proposed project. Thus, the proposed project would have a significant effect if it would:

a) 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;

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years;

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or

e) Comply with federal, State, and local statutes and regulations related to solid waste.

3.13.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Water Supply

Impact USS-1:	**The proposed project would not require new or expanded water supply entitlements that have physical impacts on the environment.**

Impact Analysis

The proposed project would be served with potable water by SSWA. The proposed project would connect to existing SSWA water lines located in Walters Road and Petersen Road.

The WSA estimated demand for both the proposed project (Suisun Logistics Center) and the Highway 12 Logistics Center. As shown in Table 3.13-5, the combined water demand estimate is 240 acre-feet annually. The projected demand for the proposed project is approximately 120 acre-feet. The ultimate buildout SSWA demand is estimated to be 4,685 acre-feet annually.

Table 3.13-5: Summary of Water Supply and Demand by Service Areas

Service Areas	Demand (AF)	Supply Suisun City (AF)	Supply by SID (AF)
Current City Service Area	1,385	1,600	
Current Joint Service Area	2,935	(1,600-1,385) = 215	2,720
Proposed SLC and Hwy 12	240		240[a]
Outside Areas[b]	115		
Total	**4,560**		
Tolenas	105		105
Suisun Valley	20		20
SSWA Total	**4,685**	**1,600**	**3,085**

Notes:
AF = acre-feet
AFY = acre-feet per year
SID = Solano Irrigation District
SLC = Suisun Logistics Center
SSWA = Suisun-Solano Water Authority
[a] 240 AFY has been made available to the proposed development by SID through the Second Amendment to the Suisun/Solano Implementation Agreement and Lease Agreement.
[b] Estimated values for ultimate water demand (excluded proposed SLC and Hwy 12 Projects) in the area outside Suisun City and the SID boundary. Area A.3 and Area B.2 in Appendix A. Excluded from the total.
Source: KSN. 2022.

As previously discussed SSWA relies exclusively on the Solano Project and cannot directly access its State Water Project entitlement. In August 2022, the City of Suisun City and SID entered into a second amended implementation/lease agreement that allows the City to transfer its State Water Project entitlement to SID in exchange for additional Solano Project water deliveries to SSWA. Therefore, the 120 acre-feet per year of water supply needed for the proposed project would originate from the Solano Project. As a result, to meet customer demands, the SID could, in turn, withdraw 120 acre-feet of State Water Project's North Bay Aqueduct.

As described in *Water Supply Environmental Effects Analysis for the Suisun Logistics Center*, included in the Draft EIR as Appendix M, the annual delivery of 120 acre-feet of water to the proposed project would have less than significant physical impacts on the environment. The area of potential effect would be limited to waterbodies within the Putah Creek watershed associated with the Solano Project, which are Lake Berryessa and Putah Creek, and Barker Slough where the intake to the North Bay Aqueduct is located.

The proposed project annual water supply of 120 acre-feet would comprise less than 0.03 percent of the lowest lake volume for Lake Berryessa. The proposed project water demand is so small compared to Lake Berryessa storage volume that the proposed project would not cause substantial, if any, changes to the lake's seasonal end-of-month storage levels, thermal profiles, biochemical processes, dilution capacity, or available habitat. As such, the proposed project's use of Solano Project water would not result in substantial adverse effects to phytoplankton, zooplankton, benthic

macroinvertebrate, or emergent and submerged macrophyte communities, or any of the lake's other aquatic biological resources. Likewise, any small effect on Lake Berryessa storage would have no effect on cold water or warm water fish habitat within the lake because the small effect on storage would not affect available habitat or the thermal profile of the lake.

The amount of additional Solano Project water released from Lake Berryessa into Putah Creek for the proposed would be so small compared to existing flow requirements that there would be negligible changes to flow in Putah Creek. Assuming a constant delivery of water to the project, a 120 acre-feet annual supply is equal to 0.33 acre-feet per day or 0.17 cubic feet per second (cfs). This flow rate is 0.2 percent of the minimum monthly average flow below Monticello Dam (82 cfs) and 1 percent of the minimum daily flow rate required to be released at Putah Diversion Dam to Lower Putah Creek (16 cfs). Furthermore, SCWA Solano County Water Agency would continue to operate the Putah Diversion Dam to meet Putah Creek Accord flow requirements. Such minor changes in releases of Lake Berryessa water into Putah Creek would not cause substantial, if even measurable, changes to Putah Creek daily flows or water quality conditions within Putah Creek. Therefore, the delivery of water to the proposed project also would not affect Putah Creek aquatic biological resources because the small effect on flows would not affect aquatic habitat quantity or quality, including the seasonal thermal regime of the creek.

Additional pumping of State Water Project water from Barker Slough to replace the 120 acre-feet SID delivers to SSWA for the proposed project would not result in substantial, if any, effects to water quality or habitat conditions in the slough. Assuming SID diverts this water primarily during a 5-month period within the peak irrigation season, the associated diversion rate would be 0.40 cfs, which is 0.3 percent of the Barker Slough Pumping Plant capacity and approximately 0.5 percent of the historical average summer diversion rate. Furthermore, operation of the Barker Slough Pumping Plant is subject to requirements in an incidental take permit issued by the California Department of Fish and Wildlife (CDFW) and United States Fish and Wildlife Service (USFWS) biological opinion for protection of Delta special-status species, including Delta smelt.

Delivery of water to the proposed project would not impact other aspects of the physical environment (e.g., aesthetics, geology and soils) because: (1) they are not present in the vicinity of the water delivery facilities associated with the project; or (2) the resources may be present in these areas, but impacts are not anticipated to occur (a) because no impact mechanism link exists between hydrologic changes associated with the project water supply and the resource, or (b) because the potential impacts would be negligible or speculative.

Based on the above discussion and the analysis presented in *Water Supply Environmental Effects Analysis for the Suisun Logistics Center* (Appendix M), the proposed project would not require new or expanded water supply entitlements that have physical impacts on the environment. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Wastewater

Impact USS-2: The proposed project would not create a need for new or expanded wastewater collection or treatment facilities.

Impact Analysis

The proposed project would be served by FSSD for wastewater collection and treatment. Table 3.13-6 estimated the proposed project's wastewater generation. The proposed project would generate 205,866 gallons of effluent per day (0.21 mgd) at buildout.

Table 3.13-6: Wastewater Generation Estimate

Square Feet	Wastewater Generation Rate	Daily Wastewater Generation
2,058,667	0.1 gallon/square foot/day	205,866 gallons (0.21 mgd)

Notes:
mgd = million gallons per day
Source: Fairfield-Suisun Sewer District (FSSD). 2021.

The existing FSSD trunk sewer system in the project vicinity consists of a 27-inch-diameter line within Petersen Road between Travis Air Force Base and Walters Road and a 39-inch-diameter line downstream of Walters Road that conveys effluent to the Chadbourne Road Treatment Plant.

The Fairfield-Suisun Sewer District 2016 Limited Update of Sewer Master Plan evaluated whether the existing 27-inch-diameter Petersen Road Trunk Sewer had sufficient capacity to accommodate effluent generated by the proposed project. The Limited Update modeled a peak wet weather flow scenario of effluent generated by project buildout in conjunction with a 20-year storm event and found that both the 27-inch and 39-inch lines had sufficient capacity. The Limited Update concluded that the existing sewer system has sufficient capacity to serve the proposed project.

The treatment plant has a design capacity of 23.7 mgd and treats 10-15 mgd of effluent on a typical day. The addition 0.21 mgd of effluent from the proposed project would represent 1-2 percent of the 8.7-13.7 mgd of available capacity on a typical day at the Chadbourne Road Treatment Plant. Thus, adequate treatment capacity would be available. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Storm Drainage

Impact USS-3:	**The proposed project would not create a need for new or expanded downstream storm drainage facilities.**

Impact Analysis

The proposed project would result in the development of 2.1 million square feet of high-cube warehouse uses on 120 acres of the project site. The remaining 47 acres would be preserved as open space. Thus, the proposed project would increase the amount of impervious surface coverage on the project site and would create the potential for increased runoff leaving the project site that may create potential flooding conditions in downstream waterways.

The proposed project would install a storm drainage system designed for a 15-year storm event. Inlets would capture surface runoff, where it would enter an underground piping system that would convey stormwater to one of four basins. The basins would provide 323,280 square feet (7.6 acres) of stormwater retention.

The two existing drainage channels that cross the project site would be abandoned. A new drainage channel would divert runoff from the west channel culvert at Petersen Road to a new east channel that would connect to the existing east culvert under SR-12. Hydraulic calculations indicate that the existing east drainage culvert at SR-12 has capacity for 168 cubic feet per second (cfs) during a 15-year peak storm event. The combined runoff from the west and east channel was calculated to be 157 cfs during a 15-year peak storm event; thus, the existing culvert would not need to be upsized to accommodate the additional runoff.

In accordance with applicable provisions of Section C.3 of the San Francisco Bay RWQCB Municipal Regional Permit (Order No. R2-2015-0049, NPDES Permit No. CAS612008) as required under Mitigation Measure (MM) HYD-1b and pursuant to provisions of the Fairfield-Suisun Urban Runoff Management Program, the proposed project would implement LID stormwater management methods into the on-site storm drainage system consisting of rainwater harvesting and use, infiltration, evapotranspiration, or biotreatment.

Collectively, these measures would serve to slow, reduce, and meter the volume of runoff leaving the project site and ensure that downstream storm drainage facilities are not inundated with project-related stormwater such that new or expanded facilities would be required. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Solid Waste

Impact USS-4: The proposed project's solid waste would not create a need for additional landfill capacity.

Impact Analysis

This impact discussion assesses whether the proposed project would be served by a landfill with adequate capacity or comply with federal, State, and local statutes and regulations related to solid waste. Solid waste would be generated by construction and operational activities. Each is discussed as follows.

Construction Waste

The proposed project would result in the construction of close to 2.1 million square feet of commercial and industrial uses. Using a nonresidential construction waste generation rate published by the United States Environmental Protection Agency (EPA), an estimate of the total construction debris generated by the proposed project is provided in Table 3.13-7.

Table 3.13-7: Construction Solid Waste Generation

Waste Generation Rate	Square Feet	Construction Waste Generation	
		Tons	Cubic Yards
3.89 pounds/square foot	2,058,667	4,004	5,606

Notes:
1 ton = 2,000 pounds; 1 ton = 1.4 cubic yards
Source: United States Environmental Protection Agency (EPA). 1998; FirstCarbon Solutions (FCS). 2021.

Development of the proposed project would generate an estimated 5,606 cubic yards of construction debris. This waste volume represents less than 0.01 percent of the 38.8 million cubic yards of remaining capacity at the Potrero Hills Landfill. Moreover, the values shown in the table do not adjust construction solid waste generation to account for construction debris recycling that would serve to divert waste from the landfill. Therefore, short-term construction impacts on landfill capacity would be less than significant.

Operational Waste

Table 3.13-8 summarizes the proposed project's operational waste generation based on rates provided by Cal Recycle.

Table 3.13-8: Operational Solid Waste Generation

Waste Generation Rate	Square Feet	Operational Waste Generation	
		Tons	Cubic Yards
4.8 pounds/square foot	2,058,667	4,941	6,917

Notes:
1 ton = 2,000 pounds; 1 ton = 1.4 cubic yards
Source: California Department of Resources Recycling and Recovery (CalRecycle); FirstCarbon Solutions (FCS). 2021.

The proposed project would generate an estimated 6,917 cubic yards of operational solid waste on an annual basis at buildout. This waste volume represents less than 0.01 percent of the 38.8 million cubic yards of remaining capacity at the Potrero Hills Landfill. Moreover, the values shown in the table do not adjust operational solid waste generation to account for recycling and waste reduction activities that would serve to divert waste from the landfill. Therefore, long-term operational impacts on landfill capacity would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

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CHAPTER 4: CUMULATIVE EFFECTS

4.1 - Introduction

California Environmental Quality Act (CEQA) Guidelines Section 15130 requires the consideration of cumulative impacts within an Environmental Impact Report (EIR) when a project's incremental effects are cumulatively considerable. According to CEQA ". . . the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." In identifying projects that may contribute to cumulative impacts, CEQA allows the use of a list of past, present, and reasonably anticipated future projects, which have the potential to result in related or cumulative impacts, including those which are outside of the control of the lead agency.

In accordance with CEQA Guidelines Section 15130(b), ". . . the discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, the discussion need not provide as great [a level of] detail as is provided for the effects attributable to the project alone." The discussion should be guided by standards of practicality and reasonableness, and it should focus on the cumulative impact to which the identified other projects contribute rather than on the attributes of other projects that do not contribute to the cumulative impact.

The proposed project's cumulative impacts were considered in conjunction with other proposed and approved projects in Suisun City. Table 4-1 provides a list of the other projects considered in the cumulative analysis.

Table 4-1: Cumulative Projects

Jurisdiction	Project	Characteristics	Status
City of Suisun City	Highway 12 Logistics Center	1.28 million square feet high-cube warehouse	Proposed
	Industrial Project	481,000 square feet industrial	Proposed
	7-Eleven	12 pump fueling station; 3,060-square-foot with convenience market	Completed
	Monte Verde	124 single-family residences	Proposed
	Taco Bell	2,530-square-foot restaurant	Proposed
	Blossom Apartments	180-unit multi-family housing	Under Construction
	Marina Village	160 multi-family housing	Under Construction
	Lawler Mixed-Use Development	75-residential units; 7,200 square feet of retail	Proposed
	Zip-Thru Car Wash	6,100-square-foot car wash	Completed

Jurisdiction	Project	Characteristics	Status
	Crystal School Residential	71 single-family residential units	Proposed
	Holiday Inn Express	83-room hotel	Completed
	Marina Storage	138,900-square-foot self-storage; 24,500-square-foot recreational and boat storage; 14,435 square feet of showroom space; 1,200 square feet of office space	Proposed

Note:
These projects were pending, approved, or under construction at the time of Notice of Preparation issuance (January 2021).
Source: Suisun City. 2021.

4.2 - Cumulative Impact Analysis

The cumulative impact analysis below is guided by the requirements of CEQA Guidelines Section 15130. Key principles established by this section include:

- A cumulative impact only occurs from impacts caused by the proposed project and other past, present, and probable future projects. An EIR should not discuss impacts that do not result from the proposed project.
- When the combined cumulative impact from the increment associated with the proposed project and other past, present, and probable future projects is not significant, an EIR need only briefly explain why the impact is not significant; detailed explanation is not required.
- An EIR may determine that a project's contribution to a cumulative effect impact would be rendered less than cumulatively considerable if a project is required to implement or fund its fair share of mitigation intended to alleviate the cumulative impact.

The cumulative impact analysis that follows relies on these principles as the basis for determining the significance of the proposed project's cumulative contribution to various impacts.

4.2.1 - Aesthetics, Light, and Glare

The geographic scope of the cumulative aesthetics, light, and glare analysis is the area surrounding the project site. This is the area within view of the proposed project and, therefore, the area most likely to experience changes in visual character or experience light and glare impacts.

The proposed project consists of the development of 2.1 million square feet of industrial on 120 acres of the site and preservation of the remaining 47 acres as open space. The project site contains flat relief and is used for cattle grazing; it possesses no unique visual attributes. The project vicinity is at the transition of urban development and rural lands, with commercial, residential, recreational, and military uses to the west and north, and grazing land, marshland, and the Potrero Hills (including landfill) to the east and south. The project site is within the Suisun City Sphere of Influence (SOI) and represents the southeasternmost probable future city limits; urban development further east or

south is not contemplated by Suisun City General Plan and is largely precluded by such factors as airport land use compatibility and physical limitations (e.g., 100-year floodplains). Past, present, and foreseeable development would alter some intermittent views of the Potrero Hills for passersby traveling along Peterson Road. The interruption in views could be considered a potentially significant cumulative impact. The proposed project would intermittently obscure views of the Potrero Hills along approximately 0.5 mile of Peterson Road. Accordingly, the proposed project's incremental contribution to the cumulative impact would be cumulatively considerable.

As stated previously, five of the projects listed in Table 4-1 are within view of the project site. The project vicinity has existing sources of light and glare. All new light fixtures associated with the proposed project would be subject to the provisions of Suisun City, County of Solano, or Travis Air Force Base Land Use Compatibility Plan, which requires that new lighting must be directed, controlled, screened, or shaded in such a manner as not to shine directly on surrounding premises or interfere with aviation. As such, no significant change in light and glare levels would occur as a result of the proposed project. Other projects that involve the installation of new exterior lighting fixtures would be required to implement similar devices to prevent light spillage.

Therefore, the proposed project, in conjunction with other planned and approved projects, would not have a cumulatively significant impact relating to light and glare.

4.2.2 - Air Quality

The geographic scope of the cumulative air quality emissions analysis is the San Francisco Bay Area Air Basin (Air Basin), which encompasses most of the nine-county San Francisco Bay Area region including central Solano County. Air quality is impacted by topography, dominant air flows, atmospheric inversions, location, and season; therefore, using the Air Basin represents the area most likely to be impacted by air emissions. For greenhouse gas (GHG) emissions, the issue is global in nature.

All of the projects listed in Table 4-1 would result in new air emissions, during construction or operations (or both). The Air Basin is currently in nonattainment of the federal and State standards for ozone and is in nonattainment of the State standards for particulate matter less than 10 microns in diameter (PM_{10}) and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). Therefore, there is a cumulatively significant air quality impact with respect to these pollutants. Moreover, the Air Basin is anticipated to continue to be nonattainment for these pollutants and, thus, this cumulatively significant impact would exist in the future.

The proposed project would emit construction and operational criteria pollutant emissions at levels that would exceed the Bay Area Air Quality Management District (BAAQMD) thresholds. Mitigation is identified to reduce construction and operational criteria pollutant emissions (i.e., ozone precursors). Implementation of construction-related mitigation would sufficiently reduce proposed project construction emissions to less than significant levels; however, implementation of operation-related mitigation would not be sufficient to reduce the proposed project's operational NO_X emissions to less than significant levels. Thus, the proposed project's contribution would be

cumulatively considerable. There would be a significant and unavoidable cumulative impact with respect to criteria pollutant emissions.

As discussed in Section 3.2, Air Quality, cumulative cancer, non-cancer chronic and acute health impacts, and $PM_{2.5}$ concentrations were evaluated at the most impacted off-site sensitive receptor from all sources of toxic air contaminant (TAC) emissions located within 1,000 feet of the project site. A cumulative Health Risk Assessment (HRA) was conducted by adding the health risk values from refined modeling of the proposed project to the screening-level health risk values from each individual stationary and mobile source within a 1,000-foot radius of the site, including Highway 12 and stationary sources at the Travis Air Force Base. The HRA concluded that the main source of a cumulative community health risk are the existing sources, including stationary sources at Travis Air Force Base. The health risks to nearby sensitive receptors was not found to exceed the BAAQMD community health risk significance thresholds. Furthermore, the proposed project's individual contribution to cancer risk for all phases (plus the total of all past, present, and foreseeable future TAC sources within a 1,000-foot radius) is below the BAAQMD's 10-in-a-million threshold for determining cumulative TAC risk; therefore, the proposed project would not result in a cumulatively considerable contribution to TAC cancer risk.

4.2.3 - Biological Resources

The geographic scope of the cumulative biological resources analysis is the Suisun City area surrounding the project site. However, given that the project site is a transitional zone between urban and rural land uses, a 0.25-mile radius encompasses the biological resources most likely to be impacted by the proposed project's potential contribution to cumulative impacts. At least one of the projects listed in Table 4-1 are within 0.25 mile of the project site. The project site is mostly used for cattle grazing, with Union Creek and emergent wetlands located in the southern portion of the site. Urban development exists to the west and north of the project site and State Route (SR) 12 forms the southern border of the site. Recent development patterns and anticipated future growth throughout the Suisun City area is considered a cumulatively significant impact to biological resources that is due to the loss of potential habitat for rare species, sensitive riparian communities, and wetlands. Thus, the continued significant cumulative loss of potential habitat for rare species is expected to continue.

The proposed project has the potential to have a significant impact on pappose tarplant, Contra Costa goldfields, vernal pool fairy shrimp, California tiger salamander, northwestern pond turtle, burrowing owl, and nesting birds protected by the Migratory Bird Treaty Act (MBTA). Mitigation Measures (MM) BIO-1a through MM BIO-1j are proposed, requiring pre-construction surveys for these species and implementation of protection measures if they are found to be present. Some of the other projects listed in Table 4-1 are located on sites with similar biological attributes and, therefore, would be required to mitigate impacts on special-status plant and wildlife species in a manner similar to the proposed project. Even with the implementation of mitigation, impacts to pappose tarplant would remain significant and unavoidable, and therefore the proposed project would have a cumulatively considerable contribution to cumulative impacts related to the pappose tarplant. With respect to all other species, the required mitigation would reduce the proposed

project's incremental contribution to any significant cumulative impact on special-status plant and wildlife species to less than cumulatively considerable.

The proposed project has the potential to have a significant impact on sensitive riparian communities and wetlands. MM BIO-3a and MM BIO-3b require the applicant to obtain all requisite authorizations from agencies with jurisdiction over resources within the project site, and to meet a minimum performance standard (requiring one acre of restoration for each acre impacted by development). Such approvals may include Section 404 permit(s) from the United States Army Corps of Engineers (USACE); Section 1602 Lake and Stream Alteration Agreement(s) from the California Department of Fish and Wildlife (CDFW), and Section 401 Water Quality Certification(s) and/or Waste Discharge Requirements from the San Francisco Bay Regional Water Quality Control Board (San Francisco Bay RWQCB). Some of the other projects listed in Table 4-1 are located on sites with similar biological attributes and, therefore, would be required to mitigate impacts on sensitive riparian communities and wetlands. The required mitigation would reduce the proposed project's contribution to any significant cumulative impact on sensitive riparian communities and wetlands to less than cumulatively considerable.

With the exception of impacts to pappose tarplant discussed above, no other cumulatively significant impacts to biological resources were identified, and all other project-related biological resource impacts (e.g., wildlife movement, conservation plans) were found to be less than significant and did not require mitigation. Other projects that result in similar impacts would be required to mitigate their significant impacts. Because the proposed project's impact on all of these remaining biological resources is less than significant, it would not have a cumulatively considerable contribution to any significant cumulative impact.

4.2.4 - Cultural and Tribal Cultural Resources

The geographic scope of the cumulative cultural resources analysis is a 0.5-mile radius of the project site. Cultural resource impacts tend to be localized because the integrity of any given resource depends on what occurs only in the immediate vicinity around that resource, such as disruption of soils; therefore, in addition to the project site (including the off-site construction areas), the area near the project site would be the area most affected by project activities (generally within a 500-foot radius). No listed historic resources are within the project boundaries or within a 0.5-mile radius. Thus, there is a less than significant cumulative impact. Moreover, because no resources would be adversely impacted by project construction, the proposed project would not have a cumulatively considerable contribution to any cumulative impacts.

Tribal Cultural Resource (TCR) impacts tend to be localized, because the integrity of any given resource depends on what occurs in the immediate vicinity around that resource, such as disruption of soils; therefore, in addition to the project site itself, the area near the project site would be the area most affected by project activities (generally within a 0.5-mile radius). Results from the Northwest Information Center (NWIC) indicate that no resources have been recorded within 0.5 mile of the project site. Given that the proposed project would not have a known, direct impact on any known TCR and that no known resources are identified within 0.5 mile of the site, there is a less than

significant cumulative impact and the proposed project would not have a cumulatively considerable contribution to any cumulative impacts.

Additionally, construction activities associated with cumulative development projects in the project vicinity may have the potential to encounter undiscovered cultural resource or TCR. These cumulative projects would be required to mitigate impacts through compliance with applicable federal and State laws governing cultural resources.

The implementation of standard construction mitigation measures for past, present and future projects would ensure that undiscovered cultural resources or TCRs are not adversely affected by construction activities, which would prevent the destruction or degradation of potentially significant cultural resources in the project vicinity. However, there remains a possibility that past, present, and future projects would have a cumulative impact with respect to unanticipated discoveries.

Although there is the possibility that previously undiscovered cultural resource or TCRs could be encountered by subsurface earthwork activities associated with the cumulative projects, the implementation of construction mitigation measures (MM CUL-2 and MM CUL-3) would ensure that undiscovered cultural resources or TCRs are not adversely affected by the proposed project. Given the low potential for disruption, the standard conditions of approval, and mitigation measures that the proposed project would be required to implement, the proposed project's incremental contribution would not be cumulatively considerable. Accordingly, cumulative impacts would be less than significant.

With the implementation of MM CUL-2 and MM CUL-3, the proposed project would not result in a significant cumulative impact to cultural resources.

4.2.5 - Geology, Soils, and Seismicity

The geographic scope of the cumulative geology, soils, and seismicity analysis is the project vicinity. Adverse effects associated with geologic, soil, and seismic hazards tend to be localized, and the area near the project site would be the area most affected by project activities (generally within a 0.25-mile radius). Development in the project vicinity has not included any uses or activities that would result in geology, soils, or seismicity impacts (such as mining or other extraction activities), and there is no cumulatively significant impact.

Development projects in the project vicinity may have the potential to be exposed to seismic hazards. MM GEO-1 would be implemented to reduce the risk of loss, injury, or death in the event of a major earthquake; fault rupture; ground shaking; seismic-related ground failure; landslide; or liquefaction. Some or all of the other projects listed in Table 4-1 would be exposed to similar seismic hazards and, therefore, would be expected to implement similar regulatory requirements and mitigation measures. As such, the proposed project, in conjunction with other projects, would not have a cumulatively significant impact associated with seismic hazards.

Regarding soil erosion, development activities could lead to increased erosion rates for on-site soils, which could cause unstable ground surfaces and increased sedimentation in nearby streams and drainage channels. MM HYD-1a requires implementation of standard stormwater pollution

prevention measures to ensure that earthwork activities do not result in substantial erosion off-site. This mitigation, in turn, would require the applicant to comply with the National Pollution Discharge Elimination System (NPDES) stormwater permitting program, which regulates water quality originating from construction sites. The NPDES program, which governs projects statewide (and nationwide), requires the preparation and implementation of Stormwater Pollution Prevention Programs for construction activities that disturb more than 1 acre, and the implementation of Best Management Practices (BMPs) that ensure the reduction of pollutants during stormwater discharges, as well as compliance with all applicable water quality requirements. Since the proposed project would have to comply with federal and State regulations and required mitigation measures that are designed to minimize impacts to projects on a wide geographic scale, the proposed project's contribution to any significant cumulative erosion impact would be less than cumulatively considerable.

Finally, the project site contains fill soils that may not be suitable to support urban development. Standard grading and soil engineering practices would abate these issues. Some or all of the other projects listed in Table 4-1 would be exposed to expansive soil hazards or unstable geologic units and, therefore, would be expected to implement similar grading and soil engineering practices to address those impacts. The proposed project would not contribute to any significant cumulative impact due to expansive soils or unstable soil units.

Therefore, the proposed project as mitigated, in conjunction with other planned and approved projects, would not have a cumulatively significant impact related to geology, soils, and seismicity, assuming compliance with regulatory requirements.

4.2.6 - Greenhouse Gas Emissions and Energy

The geographic scope of the cumulative GHG emissions analysis is the planet. For GHG emissions, the issue is global in nature.

The proposed project would emit construction and operational GHG emissions at levels that would exceed the GHG significance thresholds formulated by the City, based in part on BAAQMD thresholds. Mitigation is proposed requiring the implementation of GHG reduction measures that would reduce emissions; however, it would not reduce it to below adopted thresholds. Therefore, the proposed project's contribution would remain cumulatively considerable, significant, and unavoidable

4.2.7 - Hazards and Hazardous Materials

The geographic scope of the cumulative hazards and hazardous materials analysis is the project area. Adverse effects of hazards and hazardous materials tend to be localized; therefore, the area near the project area would be most affected by project activities. Hazards and hazardous materials are extensively regulated at the federal, State, and local levels. There are no land uses in the project vicinity that are known to utilize large quantities of hazardous materials or involve hazardous activities, and there is no cumulatively significant impact. Moreover, the projects listed in Table 4-1 would be required by local, State, and federal law to abate these conditions. Because hazards and hazardous materials exposure is generally localized and development activities associated with the

other projects listed in Table 4-1 may not coincide with the proposed project, this effectively precludes the possibility of cumulative impacts.

It is highly unlikely that any of the other projects listed in Table 4-1 would need to protect an active natural gas pipeline and, therefore, there is negligible potential for cumulative impacts in this regard. The project site is crossed by a Pacific Gas and Electric Company (PG&E) natural gas pipeline, which would be left in place. MM HAZ-2 requires the implementation of various pipeline safety measures to reduce the potential for risk of upset to a less than significant impact; thereby reducing the proposed projects incremental contribution to the less than significant cumulative impact to below a level of significance. Table 4-1

The project site was previously used for agricultural land use activities, including structures, and, thus, there is the potential for hazards associated with residual agricultural chemicals, hazardous building materials, septic systems, and groundwater wells. Local municipalities are required to follow local, State, and federal laws regarding hazardous materials, which would further ensure that potential contamination or exposure to hazardous materials is avoided or controlled to minimize the risk to the public as future development projects are implemented. However, the cumulative impact from development could still be potentially significant. The proposed project would implement MM HAZ-3a through HAZ-3c to abate those conditions to a level of less than significant. Therefore, because of the less than significant cumulative impact in the geographic scope and the proposed project's less than significant contribution to any impact, the proposed project would not result in a cumulatively considerable impact with respect to hazardous materials.

4.2.8 - Hydrology and Water Quality

The geographic scope of the cumulative hydrology and water quality analysis is the project vicinity, generally areas within 0.5 mile of the project site for stormwater impacts that are due to natural drainage patterns, drainage infrastructure, and impervious surfaces, all of which contribute to limiting the distance of stormwater flows. Hydrologic and water quality impacts tend to be localized; therefore, the area near the project site would be most affected by project activities. Generally, the nature and types of surrounding development, existing stormwater infrastructure and regulatory requirements have ensured that no cumulatively significant impacts related to water pollutants or flooding exist within the immediate project vicinity. However, as discussed in Section 3.7, Hydrology and Water Quality, three downstream waterways—Suisun Marsh, Suisun Slough, and Suisun Bay—are listed on the 303(d) List of impaired waterbodies for various pollutants or stressors, which originate from a variety of sources including urban, resource, foreign, natural, and unknown. Projects that propose new development are required to implement adopted local, State, and federal regulations. Nonetheless, this represents a cumulatively significant impact related to water quality. The proposed project would involve short-term construction and long-term operational activities that would have the potential to degrade water quality in downstream water bodies. However, MM HYD-1a and MMHYD-1b are proposed that would require implementation of various construction and operational water quality control measures to prevent the release of pollutants into downstream waterways. The required mitigation would reduce the proposed project's incremental contribution to any significant cumulative water quality impact to below a level of significance.

No other cumulatively significant impacts to hydrology and water quality were identified. Moreover, all other project-related hydrology impacts (e.g., groundwater, drainage, and 100-year flood hazards) were found to be less than significant without mitigation and would not contribute to the less than significant cumulative impacts. Accordingly, the proposed project would not result in cumulative impacts to hydrology or water quality.

4.2.9 - Land Use

The geographic scope of the cumulative land use analysis is the Suisun City SOI, which includes areas within the city limits as well as unincorporated areas that are within the City's "probable future boundary." Land use decisions are made at the city level; therefore, the Suisun City SOI is an appropriate geographic scope. Development within Suisun City is governed by the City's General Plan and City Code, which ensure logical and orderly development and require discretionary review to ensure that projects do not result in land use impacts caused by inconsistency with the General Plan and other regulations. Additionally, all development within Suisun City is assessed for consistency with the Travis Air Force Base Land Use Compatibility Plan, and projects requiring annexation are assessed for consistency with Solano Local Agency Formation Commission criteria. As a result, there is no cumulatively significant land use impact.

The project site is currently designated "Special Planning Area," by the General Plan. The site is not currently zoned by the City because it is located in unincorporated Solano County. The proposed project involves the development of 2.1 million square feet of industrial and commercial uses on 120 acres of the site and preservation of the remaining 47 acres as open space. In conjunction with annexation of 167 acres of the project site into Suisun City, the project site would be re-designated and pre-zoned, which would serve to bring the proposed project into conformance with the General Plan and Zoning. Furthermore, the proposed project was assessed for consistency with the Travis Air Force Base Land Use Compatibility Plan and Cortese-Hertzberg-Knox Local Government Reorganization Act of 2000 requirements for annexation and found to be consistent with both. Thus, the proposed land use changes would be consistent with all applicable planning documents and impacts would be less than significant.

Development projects in the Suisun City SOI would continue to be required to demonstrate consistency with all applicable City of Suisun City General Plan, City Code, Travis Air Force Base Land Use Compatibility Plan and Solano Local Agency Formation Commission criteria (as applicable). This would ensure that these projects comply with applicable planning regulations. Those projects listed in Table 4-1 that have been previously approved have been deemed consistent with all applicable planning documents. For pending projects, the lead agency would be required to issue findings demonstrating consistency with the applicable planning documents if they are ultimately approved.

Therefore, the proposed project, in conjunction with other planned and approved projects, would not have a cumulatively significant impact related to land use.

4.2.10 - Noise

The geographic scope of the cumulative noise analysis is the project vicinity, including surrounding sensitive receptors. Noise impacts tend to be localized; therefore, the analysis in Section 3.10, Noise

includes a cumulative analysis of existing, proposed, and anticipated future noise levels near the project site. Outdoor noise measurements taken at the project site indicate that the average ambient noise levels are within the "normally acceptable" or "conditionally acceptable" range for all land uses. Therefore, there is no cumulatively significant noise impact in the project vicinity.

The proposed project's construction noise levels may cause a temporary substantial increase in noise levels at nearby receptors. Mitigation is included that would require implementation of construction noise attenuation measures to reduce noise levels to a level of less than significant. Other projects listed in Table 4-1 would be required to implement similar mitigation and adhere to Suisun City Code restrictions regarding construction noise. Because of the characteristics of noise, only projects located in proximity of the project site (roughly 0.5 mile) would have the potential to cumulatively contribute to ambient noise levels in the project vicinity. It is highly unlikely that a substantial number of the cumulative projects would be constructed simultaneously and close enough to one another for noise impacts to be compounded, given that the projects listed in Table 4-1 are at widely varying stages of approval and development. Therefore, it is reasonable to conclude that construction noise from the proposed project would not combine with noise from other development projects to cause cumulatively significant noise impacts; moreover, the proposed project's incremental contribution would not be cumulatively considerable.

The proposed project's construction and operational vibration levels would not exceed annoyance thresholds, and impacts would be less than significant. Because vibration is a highly localized phenomenon, there would be no possibility for vibration associated with the proposed project to combine with vibration from other projects because of their distances from the project site. Therefore, the proposed project would not contribute to a cumulatively significant vibration impact.

The proposed project's contribution to vehicular noise levels would not exceed the applicable thresholds of significance, which take into account existing noise levels as well as noise from trips associated with other planned or approved projects. Moreover, the proposed project's vehicular trips would not result in a substantial incremental contribution to ambient noise levels under baseline-with-project and future-with-project conditions. These noise levels account for existing vehicle trips as well as vehicle trips from future projects. Finally, because several of the projects included within the scope of the transportation analysis are more than 1 mile from the project site, cumulative vehicular trips would be unlikely to add to roadway noise levels in the project vicinity. Thus, the proposed project would not combine with other projects to cause a cumulatively significant increase in ambient roadway noise. Thus, the proposed project would not combine with other projects to cause a cumulatively considerable increase in ambient roadway noise.

The proposed project's contribution to ambient noise levels from project-related stationary source operational noise would not result in any perceptible increase in ambient noise levels as measured at the nearest noise-sensitive receptors in the project vicinity. Thus, the proposed project would not combine with other projects to cause a cumulatively significant increase in ambient noise as measured at the nearest noise-sensitive receptors.

Other projects listed in Table 4-1 would be required to evaluate noise and vibration impacts and implement mitigation, if necessary, to minimize noise impacts pursuant to local regulations.

Therefore, the proposed project, in conjunction with other planned and approved projects, would not have a cumulatively significant impact related to noise.

4.2.11 - Public Services

The geographic scope of the cumulative public services analysis is the service area of each of the providers serving the proposed project. Because of differences in the nature of the public service and utility topical areas, they are discussed separately. No cumulatively significant impacts have been identified for any of these areas, as all service providers are able to achieve the requisite level of service, capacity, or response times.

Fire Protection and Emergency Medical Services

The geographic scope of the cumulative fire protection and emergency medical services analysis is the Suisun City Fire Department's service area, which consists of the Suisun City limits. The service area population is approximately 29,000.

The proposed project would develop 2.1 million square feet of industrial and commercial uses on 120 acres of the project site and preserve the remaining 47 acres of open space. The proposed project is estimated to employ up to 2,059 persons at buildout.

The Suisun City Fire Department currently is below its response time objective of 5 minutes or less to 90 percent of calls. This is a cumulative impact recognized by Suisun City General Plan, which calls for the development of two new fire stations at either end of the City to improve response times. The proposed project would contribute development fees to fund capital improvements to fire facilities and, thus, would contribute to improve this existing deficient condition.

Additionally, the proposed project would comply with all applicable requirements of the California Fire Code, including provision of detection and fire sprinkler systems, which would contain fires prior to on-scene arrival by fire crews. Other development projects in the Fire Department's service area would be reviewed for impacts on fire protection and emergency medical services and would be required to address any potential impacts with mitigation.

Service delivery does not have a physical impact on the environment and the Fire Department did not identify a need to construct new or expanded fire facilities due to the proposed project. Therefore, the proposed project, in conjunction with other future projects, would not have a cumulatively significant impact related to fire protection and emergency medical services.

Police Protection

The geographic scope of the cumulative police protection analysis is the service area of the Suisun City Police Department, which consists of the Suisun City limits.

The proposed project would develop 2.1 million square feet of industrial and commercial uses on 120 acres of the project site and preserve the remaining 47 acres of open space. The proposed project is estimated to employ up to 2,059 persons at buildout. The Police Department indicated that it could serve the proposed project without needing new or expanded police protection

facilities. Other development projects within the Police Department service area would be reviewed for impacts on police protection and would be required to address any potential impacts with mitigation to the extent that they would require new or expanded police protection facilities that could have physical effects on the environment. Note that service delivery does not have a physical impact on the environment. According to the Police Department, existing facilities are sufficient to serve the proposed project in conjunction with past, present, and future cumulative projects. Therefore, the proposed project, in conjunction with other future projects, would not have a cumulatively significant impact related to police protection.

4.2.12 - Transportation

The geographic scope of the cumulative transportation analysis is the roadway network within Suisun City. As discussed in Section 3.11, Transportation of this EIR, study facilities consist of 15 study intersections and three roadway segments.

All the new development projects listed in Table 4-1 would generate new vehicle trips and Vehicle Miles Traveled (VMT). The proposed project includes measures that would require the project applicant to contribute to improvements at these locations that would restore operations to acceptable levels. However, implementation of improvements requires the cooperation of third-party agencies, which is not assured. Moreover, not all of the necessary improvements are identified in adopted capital improvement programs with funding secured. Therefore, the proposed project, in conjunction with other projects, would impact traffic operations Near-Term Plus Project Traffic conditions; However, although the proposed project would include measures to reduce Level of Service (LOS) at certain locations for the benefit of the City, mitigation is not required by CEQA because LOS exceedances can no longer be considered significant indirect, direct or cumulative impacts under CEQA (see Subsection 3.12.4, Regulatory Framework).

The proposed project would generate additional VMT that would exceed the City's established VMT target. Mitigation is proposed requiring implementation of feasible Transportation Demand Management measures; however, these measures would not reduce the impact to a level of less than significant. Thus, the proposed project would contribute to cumulatively considerable effects.

Potential impacts related to hazards from design features or incompatible uses are project site specific (e.g., design features, sight distance, etc.) and would not combine with other projects to result in a cumulative impact. The proposed project and other past, present, and reasonably foreseeable future projects have complied and must comply with local, standard requirements for transportation-related design features specifically adopted to avoid and reduce hazards from project design or the location of incompatible uses, thereby reducing the potential for significant cumulative impacts to less than significant levels. Therefore, no significant adverse cumulative impacts would result from the proposed project combined with past, present, and probable future projects.

Similarly, the provision of adequate emergency access is site specific and would not combine with other projects. The proposed project and other past, present, and reasonably foreseeable future projects must comply with local, standard requirements for adequate emergency access specifically adopted to avoid or reduce the potential for inadequate access. Furthermore, the proposed project and other projects would not have significant impacts on the performance of the study intersections

and, therefore, it can be inferred that it would also not impair emergency response to the project vicinity. Therefore, no significant adverse cumulative impacts would result.

4.2.13 - Utilities and Service Systems

Potable Water

The proposed project and the proposed Highway 12 Logistics Center would demand a combined 240 acre-feet of water annually. In August 2022, the City of Suisun City and Solano Irrigation District (SID) entered into a second amended implementation/lease agreement that allows the City to transfer its State Water Project entitlement to SID in exchange for additional Solano Project water deliveries to Suisun-Solano Water Authority (SSWA). The additional Solano Project to cover the 240 acre-feet of water needed to serve the proposed project and the proposed Highway 12 Logistics Center Project. As such, adequate water supply would be available.

It should be noted that not all the projects listed in Table 4-1 are located within the SSWA water service area. However, for those projects that are located with the SSWA water service area, the Water Supply Assessment (WSA) anticipates adequate water supplies would be available (with either Solano Project Water or North Bay Aqueduct water). These projects also would be required to demonstrate that they would be served with potable water service as a standard requirement of the development review process, and these projects may be required to implement water conservation measures to the extent they are required. Therefore, once the new water supply for the proposed project is in place, the proposed project, in conjunction with other planned and approved projects, would not have a cumulatively significant impact related to water supply.

Wastewater

The geographic scope of the cumulative wastewater analysis includes the areas tributary to Fairfield-Suisun Sewer District Chadbourne Road Treatment Plant. The treatment plant serves urban areas in central Solano County, including the cities of Fairfield and Suisun City, and Travis Air Force Base. This treatment plant has adequate capacity to serve existing and planned future development, and therefore no cumulatively significant impact currently exists with respect to wastewater treatment.

All future projects would be required to demonstrate that sewer service is available to ensure that adequate sanitation can be provided. The proposed project is estimated to generate 158,965 gallons of wastewater on a daily basis (0.159 million gallons per day [mgd]). FSSD completed a treatment plant expansion that increased the average dry weather capacity from 17.5 to 23.7 mgd and reliable peak-flow capacity from 34.8 to 52.3 mgd. The treatment plant currently receives an average daily flow of 13.0 mgd. The addition 0.159 mgd of effluent from the proposed project would represent 1.5 percent of the 10.7 mgd of available capacity at the Chadbourne Road Treatment Plant.

As such, the plant would be expected to accept the proposed project's increase in effluent without needing to expand existing or construct new facilities, as the treatment capacity is sufficient to serve both the proposed project and planned future development in the area. Therefore, the proposed project, in conjunction with other planned and approved projects, would not have a cumulatively significant impact related to wastewater.

Storm Drainage

The geographic scope of the cumulative storm drainage analysis is Union Creek, which currently receives runoff from the project site and would continue to do so in the future. Union Creek does not exhibit indications of capacity deficiencies under existing conditions.

All future development projects in the project vicinity would be required to provide drainage facilities that collect and detain runoff such that off-site releases are controlled and do not create flooding. The proposed project would install a network of storm drainage facilities within the project site consisting of inlets, underground piping, and basins. This would ensure that the proposed project would not contribute to downstream flooding conditions during peak storm events and would avoid cumulatively significant stormwater impacts to downstream waterways at times when capacity is most constrained. The proposed project would also implement pollution prevention measures during construction and operations to ensure that downstream water quality impacts are minimized to the greatest extent possible. Therefore, the proposed project, in conjunction with other planned and approved projects, would not have a cumulatively significant impact related to storm drainage.

Solid Waste

The geographic scope of the cumulative solid waste analysis comprises the areas served by the Potrero Hills Landfill, which serves Suisun City and numerous other jurisdictions within a 150-mile radius. The landfill has 38.8 million cubic yards of remaining capacity, and therefore no cumulatively significant impact currently exists regarding solid waste disposal.

Future development projects would generate construction and operational solid waste and, depending on the volumes and end uses, would be required to implement recycling and waste reduction measures. The proposed project is anticipated to generate 11,537 cubic yards of solid waste during construction and 14,236 cubic yards annually during operations. Both waste generation values represent less than 0.01 percent of the remaining capacity figure at the three landfills. As such, sufficient capacity is available to serve the proposed project as well as the projects listed in Table 4-1 for the foreseeable future. Accordingly, the proposed project, in conjunction with other future projects, would not have a cumulatively significant impact related to solid waste.

CHAPTER 5: ALTERNATIVES TO THE PROPOSED PROJECT

5.1 - Introduction

In accordance with California Environmental Quality Act (CEQA) Guidelines Section 15126.6, this Draft Environmental Impact Report (Draft EIR) contains a comparative impact assessment of alternatives to the proposed project. The primary purpose of this section is to provide decision-makers and the general public with a reasonable number of feasible project alternatives that could attain most of the basic project objectives, while avoiding or reducing any of the proposed project's significant adverse environmental effects. Important considerations for these alternatives analyses are noted below (as stated in CEQA Guidelines § 15126.6).

- An EIR need not consider every conceivable alternative to a project;
- An EIR should identify alternatives that were considered by the lead agency, but rejected as infeasible during the scoping process;
- Reasons for rejecting an alternative include:
  - Failure to meet most of the basic project objectives;
  - Infeasibility; or
  - Inability to avoid significant environmental effects.

5.1.1 - Significant Unavoidable Impacts

The proposed project would result in the following significant unavoidable impacts:

- **Views from Peterson Road: T**he proposed project would impact views of Potrero Hills from a segment of Peterson Road. The project has been designed, however, to retain some intermittent views for any passersby who might be inclined toward viewing Potrero Hills from their moving vehicle. Despite the views of Potrero Hills being fleeting and partially obstructed, and despite the non-mandatory nature of the applicable policy, views from the approximate 0.5-mile stretch of Peterson Road along the project site would be degraded in a manner that may be considered substantially adverse by certain individuals. As a result, this direct and cumulative impact is considered potentially significant, with no known feasible mitigation to lessen it.
- **Consistency with Air Quality Management Plan:** The proposed project would emit criterial pollutants during construction and operations that would exceed adopted thresholds and, thus, be inconsistent with regional air quality planning assumptions. Mitigation is proposed requiring emissions reduction measures. However, after implementation of feasible mitigation, criterial pollutant would still exceed adopted thresholds. The residual significance of this impact is significant and unavoidable.
- **Cumulative Criteria Pollutant Emissions:** The proposed project would emit criterial pollutants during construction and operations that would exceed adopted thresholds. Mitigation is proposed requiring emissions reduction measures. However, after implementation of feasible

mitigation, criterial pollutant emissions would still exceed adopted thresholds. The residual significance of this impact is significant and unavoidable.

- **Special-status Species:** The proposed project would result in adverse impacts to the pappose tarplant. Mitigation is proposed requiring either salvaged seeds to be provided to a mitigation bank or the purchase of credits at a mitigation bank. However, there is uncertainty regarding whether mitigation banks would accept salvaged seeds or have credits available for purchase and, therefore, the residual significance of this impact is significant and unavoidable.
- **Greenhouse Gas Emissions:** The proposed project would emit greenhouse gas (GHG) emissions during construction and operations that would exceed adopted thresholds. Mitigation is proposed requiring emissions reduction measures. However, after implementation of feasible mitigation, operational, and cumulative GHG emissions would still exceed adopted thresholds. The residual significance of this impact is significant and unavoidable.
- **Vehicle Miles Traveled:** The proposed project's Vehicle Miles Traveled (VMT) per employee would exceed adopted thresholds. Mitigation is proposed requiring implementation of transportation demand management measures. However, because the lead agency cannot assure that the transportation demand measures would reduce VMT, the residual significance of this impact is significant and unavoidable.

5.1.2 - Alternatives to the Proposed Project

The three alternatives to the proposed project analyzed in this section are as follows:

- **No Project Alternative:** The project site would remain undeveloped for the foreseeable future and no development would occur.
- **Reduced Density Alternative:** A 1.55-million-square-foot logistics center would be developed on the project site, which represents a 25 percent reduction in square footage relative to the proposed project. The layout and project boundaries would remain the same as the proposed project.
- **Buildings A, B, C Only Alternative:** Buildings A, B, C which total 544,965 square feet, would be developed on 67 acres. The remaining 100 acres of the project site would remain undeveloped.

Three alternatives to the proposed project are analyzed in the following section. These analyses compare the proposed project and each individual project alternative. In several cases, the description of the impact may be the same under each alternative when compared with the CEQA Thresholds of Significance (i.e., both the proposed project and the alternative would result in a less than significant impact). The actual degree of impact may be slightly different between the proposed project and each alternative, and this relative difference is the basis for a conclusion of greater or lesser impacts.

5.2 - Project Objectives

As stated in Section 2, Project Description, the objectives of the proposed project are to:

1. Promote economic growth through new capital investment, expansion of the tax base, creation of new employment opportunities, and payment of development fees.
2. Develop compatible land uses near Travis Air Force Base in the interests of avoiding interference with military operations and furthering the objectives of the Travis Sustainability Study.
3. Attract new employment-creating industries to Suisun City that generate new tax revenue and minimize demands on City services.
4. Improve Suisun City's jobs-housing ratio by locating employment opportunities near residential areas.
5. Continue the orderly development of the eastern gateway of Suisun City with a well-designed project.
6. Further the goals and policies of the City of Suisun City General Plan by developing land contemplated to support urban development to its highest and best use.
7. Preserve the most biologically sensitive portions of the project site as open space.
8. Install circulation improvements along Walters Road and Petersen Road that provide efficient ingress and egress to the proposed project while also ensuring these facilities operate at acceptable levels.
9. Promote public safety by incorporating security measures into the project design.
10. Mitigate impacts on the environment through implementation of feasible mitigation measures.

5.3 - Alternative 1—No Project Alternative

CEQA Guidelines Section 15126.6(e) requires that an EIR evaluate a "No Project Alternative," which is intended to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. In cases where the project constitutes a land development project, the No Project Alternative is the "circumstance under which the project does not proceed." For many projects, the No Project Alternative represents a "No Development" or an "Existing Conditions" scenario, in which the project site remains in its existing condition and no new development occurs for the foreseeable future. However, CEQA Guidelines Section 15126.6(e)(3)(B) establishes that "If disapproval of the project under consideration would result in predictable actions by others such as the proposal of some other project, this 'no project' consequence should be discussed."

In this case, the project site is undeveloped and has supported agricultural land use activities for more than 70 years and is zoned for agricultural uses. The project site has never supported urban development and is located within unincorporated Solano County. Thus, the No Project Alternative

would represent the scenario in which the project site remains undeveloped and in unincorporated Solano County, and would continue to support agricultural land use activities for the foreseeable future. Additionally, under the No Project Alternative, the Suisun City General Plan would not be amended and the project site would not be annexed into the Suisun City limits.

5.3.1 - Impact Analysis

The project site would remain undeveloped and may continue to support cattle grazing. Accordingly, this alternative would avoid all of the proposed project's significant impacts (including significant unavoidable impacts), as well as the need to implement any mitigation measures.

5.3.2 - Conclusion

The No Project Alternative would avoid all of the proposed project's significant impacts. However, the No Project Alternative would not advance any of the project objectives.

Although the County included the project site within the Travis Reserve Area Overlay Zone, which limits incompatible adjacent uses and protects the ability of the Base to expand, the Overlay Zone does not entirely prevent development. Development of sites within the Travis Area Overlay Zone would be subject to additional requirements, limitations, and regulations accordingly. Under the no project alternative, future development of the site with other uses may be slowed. However, as a practical matter, it is highly unlikely that the project site would remain in active agricultural use given that (1) the site is contiguous to existing urban development within the Suisun City limits; (2) it is within the Suisun City Sphere of Influence; (3) it has access to regional routes (State Route [SR] 12 and Walters Road); (4) it has access to utilities and infrastructure; and (5) it is suitable to support urban development.

5.4 - Alternative 2—Reduced Density Alternative

Under the Reduced Density Alternative, a 1,544,000-square-foot logistics center would be developed on the project site, which represents a 25 percent reduction in the proposed project's square footage. This would yield a 514,667-square-foot reduction in buildout potential, which would be applied proportionately to all project buildings. The reduction in building square footage would allow for 10 additional acres of the site to be preserved in its natural state.

The project boundaries, layout, (including disturbance area) and high-cube warehouse end uses would remain the same. Vehicular access points would remain at the same locations. This alternative would employ 1,544 workers, which is 515 fewer jobs than the proposed project.

Table 5-1 summarizes the Reduced Density Alternative. The purpose of this alternative is to evaluate a smaller project with end uses identical to the proposed project that may avoid or substantially lessen the severity of significant project impacts.

Table 5-1: Reduced Density Alternative

Scenario	Acres	End Use	Square Feet
Reduced Density Alternative	167	High-Cube Warehouse	1,544,000
Proposed Project	167	High-Cube Warehouse	2,058,667
Difference	**–**	**–**	**(514,667)**
Source: FirstCarbon Solutions (FCS). 2023.			

5.4.1 - Impact Analysis

Aesthetics, Light, and Glare

The Reduced Density Alternative consists of developing 1,544,000 square feet of high-cube warehouse uses and associated infrastructure on the project site. Similar exterior light fixtures would be installed, and mitigation would be implemented. The buildings developed under this alternative would retain a similar appearance to the proposed project's structures; however, 514,667-square-foot reduction in warehouses would reduce the amount of development on the project site and add 10 acres to the open, natural area of the site, reducing and avoiding the intermittent blockage of views of Potrero Hills from Peterson Road. However, even with a significant reduction in square footage, this alternative would not retain every foot of visibility of Potrero Hills from Peterson Road. Therefore, the Reduced Density Alternative would have less impact on aesthetics, light, and glare than the proposed project but would not reduce direct or cumulative impacts related to views of Potrero Hills to below a level of significance.

Air Quality

The Reduced Density Alternative would result in less construction activity and 931 fewer daily vehicle trips (refer to Table 5-2), which have corresponding reductions in the severity of construction and operational criteria pollutant and toxic air contaminant emissions. The proposed project is anticipated to generate approximately 3,726 daily passenger vehicle trips during full operation. The Reduced Density Alternative would represent a 25 percent reduction in vehicle trips, which corresponds to an approximate 25 percent reduction in criteria air pollutant and toxic air contaminant (TAC) emissions from passenger vehicles. Additionally, this alternative would attract fewer truck trips and, thus, lessen the severity of the significant unavoidable sensitive receptor impact. Mitigation measures would be implemented under this alternative. Although this alternative would not avoid the proposed project's significant unavoidable air quality impacts, it would lessen the severity by emitting fewer pollutants from operational activities, primarily from mobile source emissions. Therefore, this alternative would have a lesser impact on air quality than the proposed project.

Biological Resources

Similar ground-disturbing activities would occur within the same development footprint as the proposed project, and Mitigation Measures (MM) BIO-1a through MM BIO-1j, MM BIO-3a, and MM BIO-3b would be implemented. Because the ground-disturbing activities would be similar to the

proposed project, significant and unavoidable direct and cumulative impacts to pappose tarplant would remain similar to the proposed project. Therefore, the Reduced Density Alternative would have similar biological resources impacts as the proposed project.

Cultural and Tribal Cultural Resources

Similar ground-disturbing activities would occur within the same development footprint as the proposed project, and mitigation measures would be implemented. Therefore, the Reduced Density Alternative would have similar cultural resources impacts as the proposed project.

Geology, Soils, and Seismicity

Similar development activities would occur within the same development footprint, and mitigation measures would be implemented. Therefore, the Reduced Density Alternative would have similar geology, soils, and seismicity resources impacts as the proposed project.

Greenhouse Gas Emissions and Energy

The Reduced Density Alternative would result in less construction activity and 931 fewer daily vehicle trips (refer to Table 5-2), which have corresponding reductions in the severity of construction and operational GHG emissions. The proposed project is anticipated to generate approximately 3,726 daily passenger vehicle trips during full operation. The Reduced Density Alternative would represent a 25 percent reduction in vehicle trips, which corresponds to an approximate 25 percent reduction in criteria air pollutant and TAC emissions from passenger vehicles. Mitigation measures would be implemented under this alternative. Although this alternative would not avoid the proposed project's significant unavoidable direct and cumulative GHG emission impacts, it would lessen the severity by emitting fewer emissions from operational activities. Therefore, this alternative would have a lesser impact on GHG emissions than the proposed project.

Hazards and Hazardous Materials

As with the proposed project, no hazardous conditions exist on-site, and, therefore, impacts would be less than significant. This alternative would result in a 514,667-square-foot reduction in high-cube warehouse development potential and, thus, would reduce ground-disturbing activity and the potential for hazardous material releases during construction and operations. Similar to the proposed project, this alternative would involve excavations that occur near hazardous materials pipelines. Accordingly, this alternative would be required to implement a measure similar to Mitigation Measure (MM) HAZ-2, which requires that pipeline safety requirements be implemented prior to the first ground-disturbing activities. Implementation of these measures would ensure that, in the unlikely event of a pipeline rupture caused by construction activities associated with this alternative, construction personnel have properly identified the location of all pipelines and taken appropriate precautions to minimize hazards. Additionally, this alternative would be located on a site that has been utilized for agricultural land use activities for more than 70 years and previously supported several buildings that were constructed prior to the federal bans on asbestos-containing material (ACM) and lead-based paint (LBP). Thus, there is the potential that residual concentrations of pesticides, organochloride termiticides, ACMs, or LBP may be present on-site. Therefore, this alternative would implement measures similar to MM HAZ-3a and MM HAZ-3b to require further

testing and investigations for these materials and abate any hazardous conditions found to be present prior to grading. Similarly, because the site has septic systems and wells that are currently present or were formerly present on-site, this alternative would implement mitigation similar to MM HAZ-3c to require the destruction of any unused septic system or wells in accordance with Solano County Code Chapter 6.4 and Chapter 13.10 prior to grading. This would ensure that, similar to the proposed project, this alternative does not adversely impact groundwater resources through improperly abandoned wells or septic systems that serve as vectors for contamination. However, due to the reduction in ground-disturbing activity associated with this alternative, the less than significant impacts would be slightly reduced compared to the proposed project. With the implementation of mitigation, impacts under this alternative would be reduced to a level of less than significant.

This alternative would also be located within Zone B1 and Zone C of the Travis Air Force Base Land Use Compatibility Plan. Although, this alternative would produce less light and glare compared to the proposed project, because it would develop uses similar to the proposed project, this alternative would implement a measure akin to MM AES-3, which requires the proposed project be designed to reduce light and glare hazards, which would reduce the impact to a level of less than significant. Therefore, this alternative would have similar, but due to the reduced density slightly less, impact on hazards and hazardous materials impacts than the proposed project.

Hydrology and Water Quality

Similar ground-disturbing activities would occur within the same development footprint, and MM HYD-1a and MM HYD-1b would be implemented. This alternative would reduce the proposed project's less than significant (after mitigation) hydrology and water quality impacts because there would be less impervious surface coverage. Therefore, the Reduced Density Alternative would have less impact on hydrology and water quality than the proposed project.

Land Use

This alternative would develop similar uses to the proposed project, and, therefore, would yield similar conclusions in terms of consistency with the Suisun City General Plan, Suisun City Code, and the Travis Air Force Base Airport Land Use Compatibility Plan. Therefore, the Reduced Density Alternative would have land use impacts similar to the proposed project.

Noise

The Reduced Density Alternative would result in less construction activity and 931 fewer daily vehicle trips (refer to Table 5-2), which would have corresponding reductions in the severity of construction and operational noise impacts. MM NOI-1 would be implemented under this alternative. Although this alternative would implement mitigation measures similar to the proposed project, the reduction in development potential and vehicle trips would reduce the severity of noise impacts. Therefore, this alternative would have less impact on noise than the proposed project.

Public Services

End uses would be similar to the proposed project. Although the proposed project's public services impacts were found to be less than significant and did not require mitigation, this alternative would

result in less demand for fire protection and police protection through the 514,667-square-foot reduction in development potential. Therefore, the Reduced Density Alternative would have less impact on public services than the proposed project.

Transportation

Table 5-2 summarizes the daily and peak-hour trip generation associated with the Reduced Density Alternative. As shown in the table, this alternative would yield a reduction of 931 daily vehicle trips, 77 AM peak-hour vehicle trips, and 82 PM peak-hour vehicle trips. The proposed project's VMT transportation impacts were found to be significant and unavoidable after mitigation. The Reduced Density Alternative would still be located on the same site, with the same access to alternative transportation. Accordingly, VMT per employee would be similar to the proposed project and would be significant and unavoidable, even though this alternative would employ 515 fewer individuals. Thus, the substantial reduction of 515 employees under the Reduced Density Alternative would be considered beneficial from a transportation perspective because it would result in fewer total trips and vehicles, although it would not reduce the impact to a level of less than significant because VMT per employee would remain the same as the proposed project. Additionally, this alternative would not help improve the City's jobs-to-housing ratio. Accordingly, this alternative would result in both direct and cumulative VMT impacts. However, the Reduced Density Alternative would have less transportation impacts than the proposed project.

Table 5-2: Reduced Density Alternative Trip Generation Comparison

Scenario	Daily	AM Peak-hour	PM Peak-hour
Reduced Density Alternative	2,795	232	247
Proposed Project	3,726	309	329
Difference	**(931)**	**(77)**	**(82)**

Notes:
Source: W-Trans. 2021; FirstCarbon Solutions (FCS). 2023.

Utilities and Service Systems

End uses would be similar to the proposed project. Although the proposed project's utilities and service system impacts were found to be less than significant and did not require mitigation, this alternative would result in less demand for water, and energy, and less generation of wastewater and solid waste through the 514,667-square-foot reduction in development potential. Therefore, the Reduced Density Alternative would have less impact on utilities and service systems than the proposed project.

5.4.2 - Conclusion

The Reduced Density Alternative would lessen the severity of, but would not avoid, the significant and unavoidable aesthetic, air quality, GHG emissions, biology, and transportation impacts associated with the proposed project. Additionally, the Reduced Density Alternative would lessen the severity of several of the significant impacts that can be reduced to a level of less than significant

with mitigation (e.g., biological resources, cultural resources, hydrology and water quality, and noise).

The Reduced Density Alternative would advance all of the project objectives, with several advanced to a lesser degree. However, the reduction in square footage would result in fewer positive economic benefits and, thus, would advance the project objectives to a lesser degree. (For example, this alternative would be expected to employ 515 fewer workers than the proposed project.) This includes objectives related to facilitating the development of land planned for business park/industrial uses to its highest and best use; positively contributing to the local economy; providing the City of Suisun City with a high-quality, employment-generating industrial development; and serving local and regional demand for logistics warehouse uses.

5.5 - Alternative 3—Buildings A, B, C Only Alternative

Buildings A, B, and of the proposed project would be developed, which consists of 544,965 million square feet on 67 acres. Buildings D, E, and F would not be pursued and the remaining 100 acres would remain undeveloped and preserved as open space. There would be a net reduction of 1,513,702 square feet in warehouses under this alternative.

Buildings A, B, and C would have the same layout and boundaries as the proposed project. Three high-cube warehouses totaling 544,965 million square feet would be developed on 67 acres along the south side of Petersen Road. Vehicular access would be taken from both Walters Road and Petersen Road. Storm drainage basins would be developed south of the warehouses. This alternative would employ 545 workers, which is 1,514 fewer jobs than the proposed project.

Table 5-3 summarizes the Buildings A, B, C Only Alternative. The purpose of this alternative is to evaluate the portion of the proposed project most likely to develop in the near-term and also reduce the development footprint and buildout potential to avoid or substantially lessen the severity of significant project impacts.

Table 5-3: Buildings A, B, C Only Alternative

Scenario	Acres	End Use	Square Feet
Buildings A, B, C Only Alternative	67	High-Cube Warehouse	544,965
Proposed Project	167	High-Cube Warehouse	2,058,667
Difference	**(100)**	**–**	**(1,513,702)**
Source: FirstCarbon Solutions (FCS). 2023.			

5.5.1 - Impact Analysis

Aesthetics, Light, and Glare

The Buildings A, B, C Only Alternative consists of developing 544,965 square feet of high-cube warehouse uses and associated infrastructure on 67 acres along Peterson Road. The remaining 100

acres would remain undeveloped for the foreseeable future but would be subject to potential future development. Similar to the proposed project, the development of the Buildings A, B, C Only alternative would result in impacts to views from Peterson Road. Because this alternative would also obscure views of Potrero Hills from the same segment of Peterson Road as the proposed project, direct and cumulative impacts to scenic resources as viewed from Peterson Road would be significant and unavoidable under this alternative.

Similar exterior light fixtures would be installed, and mitigation would be implemented. The buildings developed under this alternative would retain a similar appearance to the proposed project's structures; however, the more than half million square-foot reduction in warehouses would reduce the amount of development and add 100 acres to the open, natural area of the site. Therefore, the Buildings A, B, C Only Alternative would reduce the proposed project's less than significant impacts on aesthetics, light, and glare.

Air Quality

The Buildings A, B, C Only Alternative would result in less construction activity and 2,738 fewer daily vehicle trips (refer to Table 5-4), which have corresponding reductions in the severity of construction and operational criteria pollutant and toxic air contaminant emissions. The proposed project is anticipated to generate approximately 3,726 daily passenger vehicle trips during full operation. The Buildings A, B, and C Only Alternative would represent an 73 percent reduction in vehicle trips, which corresponds to an approximate 73 percent reduction in criteria air pollutant and TAC emissions from passenger vehicles. Additionally, this alternative would attract fewer truck trips and, thus, lessen the severity of the significant unavoidable sensitive receptor impact. Mitigation measures would be implemented under this alternative. Although this alternative would not avoid the proposed project's significant unavoidable air quality impacts, it would lessen the severity by emitting fewer pollutants from operational activities. Therefore, this alternative would have a lesser impact on air quality than the proposed project.

Biological Resources

The Buildings A, B, C Only Alternative consists of developing 544,965 square feet of high-cube warehouse uses and associated infrastructure on 67 acres. The remaining 100 acres would remain undeveloped for the foreseeable future. Similar development activities would occur for Phase 1 and, therefore, MM BIO-1a through MM BIO-1j, MM BIO-3a and MM BIO-3b would be implemented. However, the elimination of more than a half million square feet would lessen the potential for impacts to biological resources. Therefore, the Buildings A, B, C Only Alternative would result in less impact on biological resources impacts than the proposed project, but the direct and cumulative impact to pappose tarplant would still remain significant and unavoidable because of uncertainty that a for-profit organization or non-profit would be willing to accept salvaged seed to implement off-site restoration, habitat enhancement, or research to offset the occupied habitat, or that a mitigation bank will have pappose tarplant credits available prior to the start of construction.

Cultural and Tribal Cultural Resources

The Buildings A, B, C Only Alternative consists of developing 544,965 square feet of high-cube warehouse uses and associated infrastructure on 67 acres. The remaining 100 acres would remain undeveloped for the foreseeable future. Similar development activities would occur for this alternative and, therefore, mitigation measures would be implemented. However, the elimination of more than a half million square feet would lessen the potential for impacts to cultural resources. Therefore, the Buildings A, B, C Only alternative would have less impact on cultural resources impacts than the proposed project.

Geology, Soils, and Seismicity

The Buildings A, B, C Only Alternative consists of developing 544,965 square feet of high-cube warehouse uses and associated infrastructure on 67 acres. The remaining 100 acres would remain undeveloped for the foreseeable future. Similar development activities would occur for Phase 1 and, therefore, MM GEO-1 and MM GEO-5 would be implemented. However, the elimination of more than a half million square feet would lessen the potential for impacts to geology, soils, and seismicity. Therefore, the Buildings A, B, C Only Alternative would have less impact on geology, soils, and seismicity than the proposed project.

Greenhouse Gas Emissions and Energy

The Buildings A, B, C Only Alternative would result in less construction activity and 2,738 fewer daily vehicle trips (refer to Table 5-4), which have corresponding reductions in the severity of construction and operational GHG emissions. The proposed project is anticipated to generate approximately 3,253 daily passenger vehicle trips during full operation. The Buildings A, B, and C Only alternative would represent an 73 percent reduction in vehicle trips, which corresponds to an approximate 73 percent reduction in criteria air pollutant and TAC emissions from passenger vehicles. Mitigation measures would be implemented under this alternative. Although this alternative would not avoid the proposed project's significant and unavoidable direct and cumulative GHG emission impacts, it would lessen the severity by emitting fewer emissions from operational activities. Therefore, this alternative would have a lesser impact on GHG emissions than the proposed project.

Hazards and Hazardous Materials

The Buildings A, B, C Only Alternative consists of developing 544,965 square feet of high-cube warehouse uses and associated infrastructure on 67 acres. The remaining 100 acres would remain undeveloped for the foreseeable future. As with the proposed project, no hazardous conditions exist on-site, and, therefore, impacts would be less than significant. This alternative would result in a 1.5-million-square-foot reduction in high-cube warehouse development potential and, thus, would reduce the potential for hazardous material releases during construction and operations. Similar to the proposed project, this alternative would involve excavations that occur near hazardous materials pipelines. Accordingly, this alternative would be required to implement a measure similar to MM HAZ-2 that requires pipeline safety requirements be implemented prior to the first ground-disturbing activities. Implementation of these measures would ensure that, in the unlikely event of a pipeline rupture caused by construction activities associated with this alternative, construction personnel have properly identified the location of all pipelines and taken appropriate precautions to minimize hazards. Additionally, this alternative would be located on a site has been utilized for agricultural

land use activities for more than 70 years and previously supported several buildings that were constructed prior to the federal bans on ACMs and LBP. Thus, there is the potential that residual concentrations of pesticides, organochloride termiticides, ACMs, or LBP may be present on-site. Therefore, this alternative would implement measures similar to MM HAZ-3a and MM HAZ-3b to require further testing and investigations for these materials and abate any hazardous conditions found to be present prior to grading. Similarly, because the site has septic systems and wells that are currently present or were formerly present on-site, this alternative would implement mitigation similar to MM HAZ-3c to require the destruction of any unused septic system or wells in accordance with Solano County Code Chapter 6.4 and Chapter 13.10 prior to grading. This would ensure that, similar to the proposed project, this alternative does not adversely impact groundwater resources through improperly abandoned wells or septic systems that serve as vectors for contamination. However, due to the reduction in ground-disturbing activity associated with this alternative, the less than significant impacts would be slightly reduced compared to the proposed project. With the implementation of mitigation, impacts under this alternative would be reduced to a level of less than significant.

This alternative would also be located within Zone B1 and Zone C of the Travis Air Force Base Land Use Compatibility Plan. Although this alternative would produce less light and glare compared to the proposed project, because it would develop uses similar to the proposed project, this alternative would implement a measure akin to MM AES-3, which requires the proposed project be designed to reduce light and glare hazards, which would reduce the impact to a level of less than significant. Therefore, this alternative would have less impact on hazards and hazardous materials impacts similar to the proposed project; however, due to the significant reduced building footprint and ground-disturbing activities associated with this alternative, the less than significant impact would be correspondingly reduced.

Hydrology and Water Quality

The Buildings A, B, C Only Alternative consists of developing 544,965 square feet of high-cube warehouse uses and associated infrastructure on 67 acres. The remaining 100 acres would remain undeveloped for the foreseeable future. Similar development activities would occur for this alternative and, therefore, mitigation measures would be implemented. However, the elimination of more than a half million square feet would lessen the potential for impacts to hydrology and water quality. Therefore, the Buildings A, B, C Only Alternative would have less impact on hydrology and water quality than the proposed project.

Land Use

The Buildings A, B, C Only Alternative consists of developing 544,965 square feet of high-cube warehouse uses and associated infrastructure on 67 acres. The remaining 100 acres would remain undeveloped for the foreseeable future. This alternative would develop similar uses to the proposed project, and, therefore, would yield similar conclusions in terms of consistency with the Suisun City General Plan, Suisun City Code, and the Travis Air Force Base Land Use Compatibility Plan. Therefore, the Buildings A, B, C Only Alternative would have land use impacts similar to the proposed project.

Noise

The Buildings A, B, C Only Alternative would result in less construction activity and 2,738 fewer daily vehicle trips (refer to Table 5-4), which would have corresponding reductions in the severity of construction and operational noise impacts. MM NOI-1 would be implemented under this alternative. Although this alternative would implement mitigation measures similar to the proposed project, the reduction in development potential and vehicle trips would reduce the severity of noise impacts. Therefore, this alternative would have less impact on noise than the proposed project.

Public Services

End uses would be similar to the proposed project. Although the proposed project's public services impacts were found to be less than significant and did not require mitigation, this alternative would result in less demand for fire protection and police protection through the 1.5 million square-foot reduction in development potential. Therefore, the Buildings A, B, C Only Alternative would have less impact on public services than the proposed project.

Transportation

Table 5-4 summarizes the daily and peak-hour trip generation associated with the Buildings A, B, C Only Alternative. As shown in the table, this alternative would yield a reduction of 2,738 daily vehicle trips, 227 AM peak-hour vehicle trips, and 242 PM peak-hour vehicle trips. The proposed project's transportation impacts related to employee VMT were found significant and unavoidable after mitigation. Under the Buildings A, B, C Only alternative, 1,514 fewer jobs would be added to the City. Thus, the substantial reduction of the Buildings A, B, C Only Alternative would be considered beneficial from a transportation perspective although it would not necessarily reduce the impact to a level of less than significant because the VMT per employee would still exceed the City's threshold. The Buildings A, B, C Only Alternative would have less impact on transportation than the proposed project but would still have a significant and unavoidable direct and cumulative impact related to employee VMT.

Table 5-4: Buildings A, B, C Only Alternative Trip Generation Comparison

Scenario	Daily	AM Peak-hour	PM Peak-hour
Buildings A, B, C Only Alternative	988	82	87
Proposed Project	3,726	309	329
Difference	**(2,738)**	**(227)**	**(242)**

Note:
Source: W-Trans. 2021; FirstCarbon Solutions (FCS). 2023.

Utilities and Service Systems

End uses would be similar to the proposed project. Although the proposed project's utilities and service system impacts were found to be less than significant and did not require mitigation, this alternative would result in less demand for water, and energy, and less generation of wastewater and

solid waste through the 1.5 million square-foot reduction in development potential. Therefore, the Buildings A, B, C Only Alternative would have less impact on utilities and service systems than the proposed project.

5.5.2 - Conclusion

The Buildings A, B, C Only Alternative would lessen the severity of, but would not avoid, the significant and unavoidable aesthetic, air quality, GHG emissions, impacts to pappose tarplant, and transportation impacts associated with the proposed project. Additionally, the Buildings A, B, C Only Alternative would lessen the severity of several of the significant impacts that can be reduced to a level of less than significant with mitigation (e.g., biological resources, cultural resources, hydrology and water quality, and noise).

The Buildings A, B, C Only Alternative would advance all of the project objectives, with several advanced to a lesser degree. However, the reduction in square footage would result in fewer positive economic benefits and, thus, would advance the project objectives to a lesser degree. (For example, this alternative would be expected to employ 1,514 fewer workers than the proposed project.) This includes objectives related to facilitating the development of land planned for business park/industrial uses to its highest and best use; positively contributing to the local economy; providing the City of Suisun City with a high-quality, employment-generating industrial development; and serving local and regional demand for logistics warehouse uses.

5.6 - Environmentally Superior Alternative

The potential significance and qualitative environmental effect of each impact that may result from development under each alternative in relation to the proposed project are summarized in Table 5-5.

Table 5-5: Summary of Alternatives

Environmental Topic Area Potential Impact Threshold	Proposed Project	No Project Alternative	Reduced Density Alternative	Buildings A, B, C Only Alternative
Aesthetics, Light, and Glare				
Impact 1: Scenic Vista	SU (from Peterson Road only)	LTS <	SU <	SU <
Impact 2: Visual character or quality of public views	LTS	LTS <	LTS <	LTS <
Impact 3: New source of light and glare	LTS with Mitigation	LTS <	LTS with Mitigation <	LTS with Mitigation <
Cumulative	SU (impacts to scenic vistas from Peterson Road only)	LTS <	SU <	SU =

Environmental Topic Area Potential Impact Threshold	Proposed Project	No Project Alternative	Reduced Density Alternative	Buildings A, B, C Only Alternative
Air Quality				
Impact 1: Consistency with Air Quality Management Plan	SU	LTS <	SU<	SU<
Impact 2: Cumulative Criteria Pollutant Emissions impacts	SU	LTS <	SU<	SU<
Impact 3: Sensitive receptors exposure to pollutant concentrations	LTS	LTS <	LTS <	LTS <
Impact 4: Objectionable odors	LTS	LTS <	LTS <	LTS <
Cumulative	SU (criteria area pollutants)	LTS <	SU <	SU <
Biological Resources				
Impact 1: Special-Status plant and wildlife species	SU (Pappose Tarplant)	LTS <	SU=	SU<
Impact 2: Sensitive natural communities or riparian habitat	LTS with Mitigation	LTS <	LTS with Mitigation =	LTS with Mitigation <
Impact 3: Wetlands	LTS with Mitigation	LTS <	LTS with Mitigation =	LTS with Mitigation <
Impact 4: Fish or wildlife movement	LTS	LTS <	LTS =	LTS <
Impact 5: Conflict with policies or ordinances protecting biological resources	No impact	No impact	No impact	No impact
Impact 6: Conflict with Solano Multiple Species HCP	LTS with Mitigation	LTS <	LTS with Mitigation =	LTS with Mitigation <
Cumulative	SU (Pappose tarplant, only)	LTS <	SU =	SU =
Cultural and Tribal Cultural Resources				
Impact 1: Historic resource	No impact	No impact	No impact	No impact
Impact 2: Historic resource of archaeological nature or unique archaeological resource	LTS with Mitigation	LTS <	LTS with Mitigation =	LTS with Mitigation <
Impact 3: Human remains	LTS with Mitigation	LTS <	LTS with Mitigation =	LTS with Mitigation <

Environmental Topic Area Potential Impact Threshold	Proposed Project	No Project Alternative	Reduced Density Alternative	Buildings A, B, C Only Alternative
Impact 4: Listed or eligible tribal cultural resources	No impact	No impact	No impact	No impact
Impact 5: Lead agency determined tribal cultural resources	LTS with Mitigation	LTS <	LTS with Mitigation =	LTS with Mitigation <
Cumulative	LTS with Mitigation	LTS <	LTS with Mitigation =	LTS with Mitigation <
Geology, Soils, and Seismicity				
Impact 1: Seismic hazards	LTS with Mitigation	LTS <	LTS with Mitigation =	LTS with Mitigation <
Impact 2: Soil erosion or loss of topsoil	LTS with Mitigation	LTS <	LTS with Mitigation =	LTS with Mitigation <
Impact 3: Unstable geologic unit or soil	LTS	LTS <	LTS =	LTS <
Impact 4: Expansive soil	LTS with Mitigation	LTS <	LTS with Mitigation =	LTS with Mitigation <
Impact 5: Unique paleontological resource or site or unique geologic feature	LTS with Mitigation	LTS <	LTS with Mitigation =	LTS with Mitigation <
Cumulative	LTS with Mitigation	LTS <	LTS with Mitigation =	LTS with Mitigation <
Greenhouse Gas Emissions and Energy				
Impact 1: Generation of GHG emissions	SU	LTS <	SU <	SU <
Impact 2: Conflict with plan, policy, or regulation that reduces GHG emissions	LTS	LTS <	LTS <	LTS <
Impact 3: Energy consumption	LTS	LTS <	LTS <	LTS <
Impact 4: Conflict with plan for renewable energy or energy efficiency	LTS	LTS <	LTS <	LTS <
Cumulative	SU	LTS <	SU <	SU <
Hazards and Hazardous Materials				
Impact 1: Routine transport, use, or disposal of hazardous materials	LTS	LTS <	LTS <	LTS <
Impact 2: Upset and accident conditions	LTS with Mitigation	LTS <	LTS with Mitigation <	LTS with Mitigation <

Environmental Topic Area Potential Impact Threshold	Proposed Project	No Project Alternative	Reduced Density Alternative	Buildings A, B, C Only Alternative
involving release of hazardous materials				
Impact 3: Site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5	LTS with Mitigation	LTS <	LTS with Mitigation <	LTS with Mitigation <
Impact 4: Aviation safety	LTS with Mitigation	LTS <	LTS with Mitigation <	LTS with Mitigation <
Cumulative	LTS with Mitigation	LTS <	LTS with Mitigation <	LTS with Mitigation <
Hydrology and Water Quality				
Impact 1: Surface water quality	LTS with Mitigation	LTS <	LTS with Mitigation <	LTS with Mitigation <
Impact 2: Deplete groundwater supplies or interfere with groundwater recharge	LTS	LTS <	LTS <	LTS <
Impact 3: Stormwater drainage systems	LTS	LTS <	LTS <	LTS <
Impact 4: 100-year flood hazard area	LTS	LTS <	LTS <	LTS <
Impact 5: Inundation from dam failure	LTS	LTS <	LTS <	LTS <
Cumulative	LTS with Mitigation	LTS <	LTS with Mitigation <	LTS with Mitigation <
Land Use				
Impact 1: Suisun City General Plan consistency	LTS	LTS <	LTS =	LTS =
Impact 2: Suisun City Code consistency	LTS	LTS <	LTS =	LTS =
Impact 3: Travis Air Force Base Land Use Compatibility Plan consistency	LTS	LTS <	LTS =	LTS =
Impact 4: Local Agency Formation Commission consistency	LTS	LTS <	LTS =	LTS =
Cumulative	LTS	LTS <	LTS =	LTS =

Environmental Topic Area Potential Impact Threshold	Proposed Project	No Project Alternative	Reduced Density Alternative	Buildings A, B, C Only Alternative
Noise				
Impact 1: Substantial noise increase in excess of standards	LTS with Mitigation	LTS <	LTS with Mitigation <	LTS with Mitigation <
Impact 2: Substantial permanent noise increase	LTS	LTS <	LTS <	LTS <
Impact 3: Excessive groundborne vibration or groundborne noise levels	LTS	LTS <	LTS <	LTS <
Impact 4: Excessive noise levels from airport activity	LTS	LTS <	LTS <	LTS <
Cumulative	LTS	LTS <	LTS <	LTS <
Public Services				
Impact 1: Fire protection	LTS	LTS <	LTS <	LTS <
Impact 2: Police protection	LTS	LTS <	LTS <	LTS <
Cumulative	LTS	LTS <	LTS <	LTS <
Transportation				
Impact 1a: Effect on circulation system–intersection operation, roadway segment operation, and queueing	No impact	No impact	No impact	No impact
Impact 1b: Effect on circulation system–transit, roadway, bicycle, and pedestrian facilities	LTS	LTS <	LTS <	LTS <
Impact 2: Vehicle miles traveled	SU	LTS <	SU =	SU =
Impact 3: Hazards due to a geometric design feature or incompatible uses	LTS with Mitigation	LTS <	LTS with Mitigation <	LTS with Mitigation <
Impact 4: Inadequate emergency access	LTS with Mitigation	LTS <	LTS with Mitigation <	LTS with Mitigation <
Cumulative	SU (VMT only)	LTS <	SU <	SU <
Utilities and Service Systems				
Impact 1: Water supply	LTS	LTS <	LTS <	LTS <
Impact 2: Wastewater	LTS	LTS <	LTS <	LTS <
Impact 3: Storm drainage	LTS	LTS <	LTS <	LTS <
Impact 4: Solid waste	LTS	LTS <	LTS <	LTS <

Environmental Topic Area Potential Impact Threshold	Proposed Project	No Project Alternative	Reduced Density Alternative	Buildings A, B, C Only Alternative
Cumulative	LTS	LTS <	LTS <	LTS <

Key:
SU = Significant and Unavoidable
LTS with mitigation = Less than significant with mitigation incorporated
LTS = Less than significant
< Impact considered less when compared with the proposed project.
= Impact considered equal to the proposed project.
> Impact considered greater when compared with the proposed project.

CEQA Guidelines Section 15126(e)(2) requires an EIR to identify an environmentally superior alternative. If the No Project Alternative is the environmentally superior alternative, the EIR must also identify an environmentally superior alternative from among the other alternatives.

Of the two remaining alternatives, Buildings A, B, C Only Alternative would have the greatest reduction in the severity of impacts. Therefore, the Buildings A, B, C Only Alternative is the environmentally superior alternative.

5.7 - Alternatives Rejected From Further Consideration

5.7.1 - Alternative Location

CEQA Guidelines Section 15126.6(f)(2) sets forth considerations to be used in evaluating an alternative location. The section states that the "key question" is whether any of the significant effects of the proposed project would be avoided or substantially lessened by relocating the proposed project. The CEQA Guidelines identify the following factors that may be taken into account when addressing the feasibility of an alternative location:

1. Site suitability
2. Economic viability
3. Availability of infrastructure
4. General Plan consistency
5. Other plans or regulatory limitations
6. Jurisdictional boundaries
7. Whether the project applicant can reasonably acquire, control, or otherwise have access to the alternative site

The CEQA Guidelines establish that only locations that would accomplish this objective should be considered as alternative locations for the proposed project.

Table 5-6 evaluates the feasibility of a potential alternative location within the Suisun City Sphere of Influence.

Table 5-6: Alternative Location Feasibility Analysis

Site	Description	Analysis
Gentry	Approximately 473 acres bounded by Ledgewood Creek (west), SR-12 (north), Suisun Drainage Canal (east), and Cordelia Road (south) in unincorporated Solano County. The site is within the Suisun City Sphere of Influence. The Gentry site gently slopes from north to south and contains undeveloped land used for grazing. Two existing utility easements cross the site in a northeast-to-southwest direction. The California Northern Branch Line to American Canyon crosses through the project site from east to west. The Branch Line's wye or junction with the Union Pacific Railroad is located east of the site. Pennsylvania Avenue bisects the site from north to south and provides vehicular access. The Gentry site is designated "Agricultural" by the Solano County General Plan and is zoned "Exclusive Agricultural 40 Acres (A-40)" by the Solano County Zoning Ordinance. The City General Plan designates the site "Commercial Mixed-use" and "Agriculture and Open Space," which are non-binding designations.	**Not Feasible:** The applicant owns this site and has filed an application with Suisun City to develop a 1.28-million-square-foot logistics center on 93 acres of it. The proposed project consists of a 2.1-million-square-foot logistics center on 167 acres and, therefore, this site would not provide sufficient acreage to realize the project objectives.
Source: FirstCarbon Solutions (FCS). 2023.		

CHAPTER 6: OTHER CEQA CONSIDERATIONS

6.1 - Significant Unavoidable Adverse Impacts

The proposed project would result in the following significant and unavoidable impacts:

- **Views from Peterson Road:** The proposed project would impact views of Potrero Hills from a segment of Peterson Road. The project has been designed, however, to retain some intermittent views for any passersby who might be inclined toward viewing Potrero Hills from their moving vehicle. Despite views of Potrero Hills being fleeting and partially obstructed, and despite the non-mandatory nature of the applicable policy, views from the approximate 0.5-mile stretch of Peterson Road along the project site would be degraded in a manner that may be considered substantially adverse by certain individuals. As a result, this direct and cumulative impact is considered potentially significant, with no known feasible mitigation to lessen it.

- **Consistency with Air Quality Management Plan:** The proposed project would emit criterial pollutants during construction and operations that would exceed adopted thresholds and, thus, be inconsistent with regional air quality planning assumptions. Mitigation is proposed requiring emissions reduction measures. However, after implementation of feasible mitigation, criterial pollutant would still exceed adopted thresholds. The residual significance of this impact is significant and unavoidable.

- **Cumulative Criteria Pollutant Emissions:** The proposed project would emit criterial pollutants during construction and operations that would exceed adopted thresholds. Mitigation is proposed requiring emissions reduction measures. However, after implementation of feasible mitigation, criterial pollutant emissions would still exceed adopted thresholds. The residual significance of this impact is significant and unavoidable.

- **Special-Status Species:** The proposed project would result in adverse impacts to the pappose tarplant. Mitigation is proposed requiring either salvaged seeds to be provided to a mitigation bank or the purchase of credits at a mitigation bank. However, there is uncertainty regarding whether mitigation banks would accept salvaged seeds or have credits available for purchase and, therefore, the residual significance of this impact is significant and unavoidable.

- **Greenhouse Gas Emissions:** The proposed project would emit greenhouse gas (GHG) emissions during construction and operations that would exceed adopted thresholds. Mitigation is proposed requiring emissions reduction measures. However, after implementation of feasible mitigation, operational and cumulative GHG emissions would still exceed adopted thresholds. The residual significance of this impact is significant and unavoidable.

- **Vehicle Miles Traveled:** The proposed project's Vehicle Miles Traveled (VMT) per employee would exceed adopted thresholds. Mitigation is proposed requiring implementation of

transportation demand management measures. However, because the lead agency cannot assure that the transportation demand measures would reduce VMT, the residual significance of this impact is significant and unavoidable.

6.2 - Growth-Inducing Impacts

There are two types of growth-inducing impacts that a project may have: direct and indirect. To assess the potential for growth-inducing impacts, the project's characteristics that may encourage and facilitate activities that individually or cumulatively may affect the environment must be evaluated (CEQA Guidelines § 15126.2(e)). CEQA Guidelines, as interpreted by the City, state that a significant growth-inducing impact may result if the project would:

- Induce substantial population growth in an area (for example, by proposing new homes and commercial or industrial businesses beyond the land use density/intensity envisioned in the general plan);
- Substantially alter the planned location, distribution, density, or growth rate of the population of an area; or
- Include extensions of roads or other infrastructure not assumed in the general plan or adopted capital improvements project list, when such infrastructure exceeds the needs of the project and could accommodate future developments.

Direct growth-inducing impacts occur when the development of a project imposes new burdens on a community by directly inducing unplanned population growth, or by leading to the construction of additional developments in the same area. Also included in this category are projects that remove physical obstacles to population growth (such as a new road into an undeveloped area or a wastewater treatment plant with excess capacity that could allow additional development in the service area). Construction of these types of infrastructure projects cannot be considered isolated from the development they facilitate and serve. Projects that physically remove obstacles to growth, or projects that indirectly induce growth may provide a catalyst for future unrelated development in an area such as a new residential community that requires additional commercial uses to support residents.

The proposed project does not include residential uses and therefore would not directly induce population growth. The proposed project would develop approximately 2.1 million square feet of new high-cube warehouse uses on a site currently used as grazing land. The proposed project would employ an estimated 910 workers during construction and 2,059 workers when fully operational at buildout. The proposed project's warehouses would likely be built incrementally over a period of years and, thus, jobs would be added in blocks as the project site builds out.

The California Employment Development Department estimated Solano County's labor force at 200,700 in December 2022. Of this figure, 193,100 persons were employed and 7,700 were unemployed. As such, the local labor force is robust enough to allow the project's employment opportunities to be filled locally such that unplanned growth would not occur. Additionally, the

proposed project is located in proximity to residential areas to the north and south and would provide new employment opportunities for current residents in the City. It would employ an estimated 910 workers during construction and an estimated 2,059 workers at buildout. Consequently, some of the City's existing residents could find employment as part of the proposed project. A more balanced jobs-to-housing ratio can reduce environmental impacts by limiting commute vehicle miles traveled during peak periods in areas where congestion is growing.

The proposed project would be served by connections to existing water, wastewater, storm drainage, electricity, and natural gas lines that exist in Walters Road or Petersen Road. No extension of infrastructure into unserved areas would be required and, therefore, no removal of physical barriers to growth would occur.

As such, the proposed project would not indirectly induce substantial population growth. No impacts would occur.

6.3 - Significant Irreversible Environmental Changes

The environmental effects of the proposed projects are summarized in Section ES, Executive Summary and are analyzed in detail in Section 3, Environmental Impact Analysis of this EIR.

As mandated by the CEQA Guidelines, the EIR must address any significant irreversible environmental change that would result from implementation of the proposed project. Specifically, pursuant to the CEQA Guidelines (Section 15126.2(c)), such an impact would occur if:

- The project would involve a large commitment of nonrenewable resources;
- Irreversible damage can result from environmental accidents associated with the project; and
- The proposed consumption of resources is not justified (e.g., the project results in the wasteful use of energy).

The proposed project consists of the development of new industrial and commercial buildings on a site adjacent to and that would be annexed into the Suisun City limits. Construction and demolition debris recycling practices would be expected to allow for the recovery and reuse of building materials such as concrete, lumber, and steel and would limit disposal of these materials, some of which are nonrenewable.

Day-to-day activities would involve the use of nonrenewable resources such as petroleum and natural gas during operations. The new buildings uses would be required to adhere to the latest adopted edition of the California Building Standards Code (CBC), which includes a number of standards that would reduce energy demand, water consumption, wastewater generation, and solid waste generation that would collectively reduce the demand for resources. This would result in the emission and generation of less pollution and effluent and would lessen the severity of corresponding environmental effects. Although the proposed project would result in an irretrievable commitment of nonrenewable resources, the commitment of these resources would not be significantly inefficient, unnecessary, or wasteful.

Lastly, the proposed project is intended to meet regional market demand for new high-cube warehouse square footage. Thus, the project is justified in that there is market demand for it and it is appropriate for the City of Suisun City to expand its limits to encompass the project site.

CHAPTER 7: EFFECTS FOUND NOT TO BE SIGNIFICANT

7.1 - Introduction

This chapter is based on the Notice of Preparation (NOP), dated January 6, 2021, and contained in Appendix A of this Draft Environmental Impact Report (Draft EIR). The NOP was prepared to identify the potentially significant effects of the proposed project and was circulated for public review between January 6, 2021, and February 4, 2021. In the course of this evaluation, certain impacts were found to be less than significant because the proposed project's characteristics would not create such impacts. This chapter provides a brief description of effects found not to be significant or less than significant, based on the NOP comments or more detailed analysis conducted as part of the Draft EIR preparation process. Note that a number of impacts that are found to be less than significant are addressed in the various EIR topical sections (Sections 3.1 through 3.13) to provide more comprehensive discussion of why impacts are less than significant, in order to better inform decision makers and the general public.

7.2 - Effects Found not to be Significant

7.2.1 - Aesthetics, Light, and Glare

State Scenic Highways

State Route 12 (SR-12) borders the southern side of the project site. SR-12 is not classified as either an "Officially Designated" or an "Eligible" State Scenic Highway. Therefore, this precludes any possibility of adversely altering views from a State Scenic Highway. No impacts would occur.

7.2.2 - Agricultural and Forest Resources

Loss of Important Farmland

The project site supports grazing land use activities. As shown in Exhibit 7-1, the California Department of Conservation Farmland Mapping and Monitoring Program maps the project site as 'Grazing Land,' which does not fall under the Important Farmland umbrella (Prime Farmland, Unique Farmland, and Farmland of Statewide Importance) as defined by California Environmental Quality Act (CEQA) Guidelines Appendix G. Furthermore, the project site's soils (Antioch-San Ysidro complex, 0 to 2 percent soils; Solano loam; and Pescadero clay loam) are not classified as prime soils (Class I or II) by the United States Department of Agriculture (USDA), a key attribute used by the California Department of Conservation in classifying farmland.

Furthermore, Yolo Land & Cattle Company, the tenant grazing entity, provided a letter to the City of Suisun City on March 17, 2021, indicating that the project site produced poor yields of dryland hay in the prior 3 years. The tenant also advised that it leases multiple parcels for grazing in the project vicinity and the project site provides the "poorest quality of forage" of the various grazing sites. This provides independent confirmation that the project site is not economically viable agricultural land. Thus, its conversion from agricultural to non-agricultural use would not constitute a significant impact. No impacts would occur.

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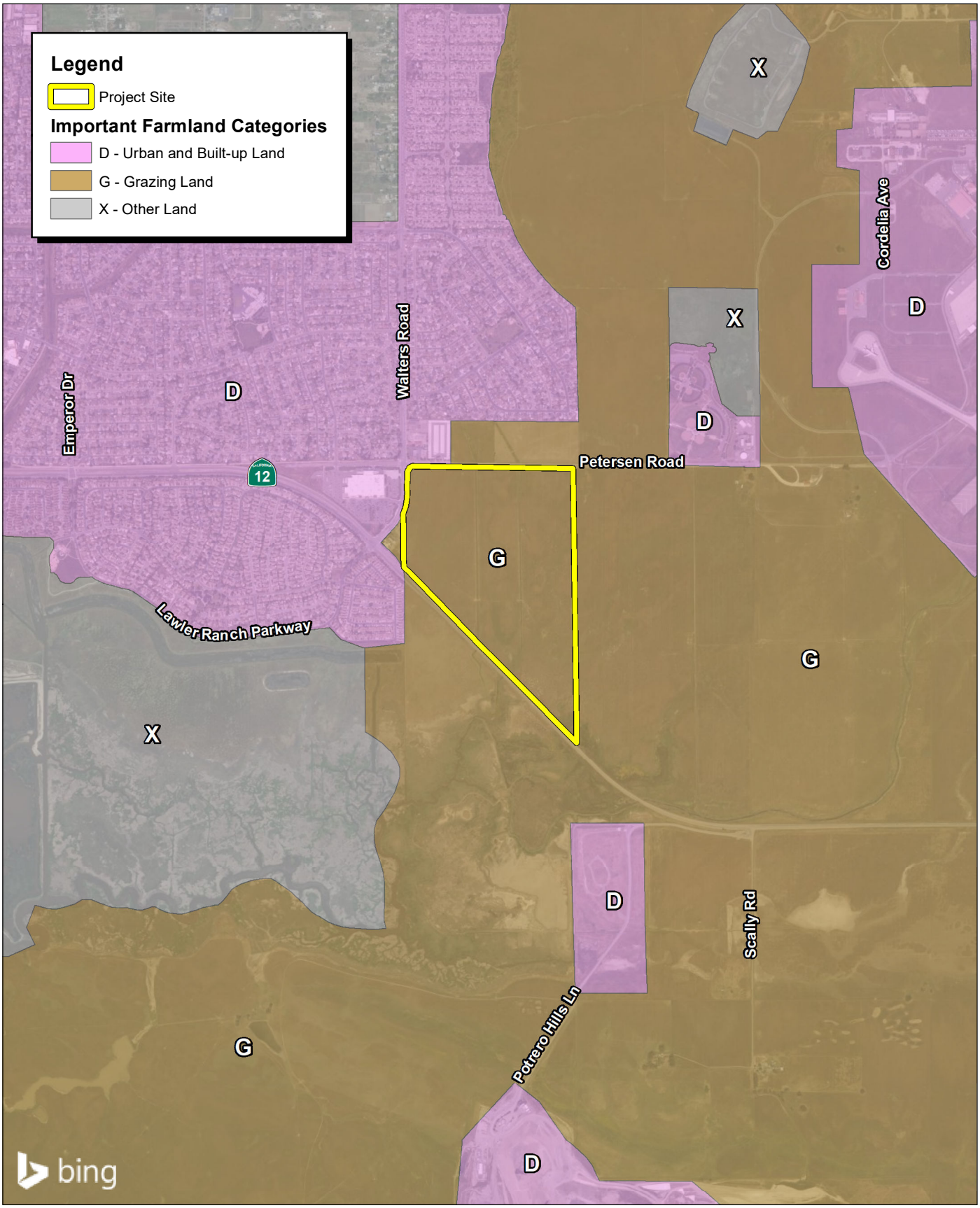

Source: Bing Aerial Imagery.

FIRSTCARBON SOLUTIONS™

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Exhibit 7-1
Farmland Mapping and Monitoring Program Land Classifications

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Conflicts With Agricultural Zoning or Williamson Act Contracts

The Solano County Zoning Ordinance zones the project site 'Exclusive Agricultural 160 acres (A-160),' an agricultural zoning designation. The proposed project involves pre-zoning the project site to an urban zoning district and annexing the site into the City of Suisun City. Pre-zoning would serve to reconcile any conflicts with agricultural zoning. Additionally, the project site is not encumbered by any active Williamson Act contracts, which precludes the possibility of conflicts in this regard. No impacts would occur.

Loss of Forestland or Conflicts With Forest Zoning

The project site does not contain any stands of commercially harvestable trees and, thus, the proposed project would not convert forestland to non-forest use. The Solano County Zoning Ordinance zones the project site 'Exclusive Agricultural 160 acres (A-160),' a non-forest zoning designation. The project site would be pre-zoned for light industrial use as part of the annexation process. No impacts would occur.

Pressures to Convert Farmland

The land to the west is currently within the city limits and designated for commercial development by the Suisun City General Plan; thus, it is considered committed to urban use within the foreseeable future. The undeveloped land to the north is within the Suisun City Sphere of Influence (SOI) and is ultimately contemplated to be annexed into Suisun City and developed for nonresidential use. Thus, its conversion to non-agricultural use was previously contemplated by the Suisun City General Plan. The lands to the east and south are contemplated to remain in unincorporated Solano County and be permanently protected as agricultural land, due to their proximity to Travis Air Force Base and Suisun Marsh, respectively. This condition precludes the possibility of the proposed project creating pressures to convert farmland to non-agricultural use. No impacts would occur.

7.2.3 - Biological Resources

Local Biological Ordinances and Policies

The Suisun City Code does not have any ordinances that directly regulate biological resources such as a Tree Ordinance or a Creek Setback Ordinance. This precludes the possibility of conflicts with local biological ordinances and policies. No impacts would occur.

7.2.4 - Geology, Soils, and Seismicity

Septic or Alternative Wastewater Disposal Systems

The proposed project would be served with sanitary sewer service provided by Fairfield-Suisun Sewer District. No septic or alternative wastewater disposal system would be employed. This condition precludes the possibility of related impacts. No impacts would occur.

7.2.5 - Hazards and Hazardous Materials

Exposure of Schools to Hazardous Materials

Dan O. Root Elementary School, the closest school to the project site, is located 0.6 mile to the northeast. This distance precludes the possibility of the proposed project exposing schools located within 0.25 mile of the site to hazardous materials or hazardous air emissions. No impact would occur.

Emergency Response or Evacuation Plan

The proposed project would take driveway access from Walters Road and Petersen Road. Both roadways are designated truck routes and, thus, suitable for use as an emergency response or evacuation route. The proposed project would comply with all applicable provisions of the California Fire Code, including requirements for emergency access for large vehicles such as fire engines. These conditions would preclude the possibility of conflicts with emergency response or evacuation plans. No impacts would occur.

Wildland Fires

The project site is not located within a "high" or "very high" fire hazard severity zone as identified by the California Department of Forestry and Fire Protection (CAL FIRE). This condition precludes the possibility of the proposed project exposing people or structures to a significant risk of loss, injury, or death involving wildlife fires. No impacts would occur.

7.2.6 - Hydrology and Water Quality

Seiches, Tsunamis, or Mudflows

There are no large inland bodies of water such as lakes or reservoirs near the project site, a condition that precludes seiche inundation. The project site is located more than 42 miles from the Pacific Ocean, a condition that precludes tsunami inundation. The project site is not located in a volcanically active area or at the base of a mountain range, a condition that precludes mudflow inundation. No impacts would occur.

7.2.7 - Land Use

Division of an Established Community

The project site currently does not contain any occupied dwelling units and is surrounded with a barbed wire fence intended to deter trespassing. Thus, it does not contain any established communities or serve as a linkage between established communities. This condition precludes the division of an established community. No impacts would occur.

7.2.8 - Mineral Resources

Mineral Resources of Statewide Significance or Local Importance

The project site does not support mineral resource extraction operations. Neither the California Department of Conservation nor the Suisun City General Plan designates the site a location of known mineral deposits. In addition, the California Department of Conservation Division of Oil, Gas and

Geothermal Resources (DOGGR) indicates that there no existing or plugged gas or oil wells on the project site. This condition precludes the possibility of a loss of mineral resources of statewide or local importance. No impacts would occur.

7.2.9 - Population and Housing

Growth Inducement

Please refer to Section 6, Other CEQA Considerations for discussion of growth inducement.

Displacement of Persons or Housing

The project site does not contain any existing dwelling units. This condition precludes the possibility of displacement of persons or dwelling units. No impacts would occur.

7.2.10 - Public Services

Schools

The proposed project would not directly induce population growth and, therefore, would not increase demand for schools such that new or expanded facilities would be required. This condition precludes the possibility of related impacts. No impacts would occur.

Parks

The proposed project would not directly induce population growth and therefore would not increase demand for park facilities such that new or expanded facilities would be required. This condition precludes the possibility of related impacts. No impacts would occur.

Other Public Facilities

The proposed project would not directly induce population growth and therefore not increase demand for public facilities such as libraries, such that new or expanded facilities would be required. This condition precludes the possibility of related impacts. No impacts would occur.

7.2.11 - Recreation

Physical Deterioration of Recreational Facilities

The proposed project would not directly induce population growth and therefore would not increase the demand for recreational facilities such that new or expanded facilities would be required. This condition precludes the possibility of related impacts. No impacts would occur.

7.2.12 - Wildfire

Emergency Response or Evacuation

The proposed project would take driveway access from Walters Road and Petersen Road. Both roadways are designated truck routes and, thus, suitable for use as an emergency response or evacuation route. The proposed project would comply with all applicable provisions of the California Fire Code, including requirements for emergency access for large vehicles such as fire engines. As

such, adequate emergency response and evacuation routes would be available in the event of an emergency. No impact would occur.

Exposure to Wildfire

The project site contains undeveloped land and is surrounded by three sides by urban development within the city limits and associated with Travis Air Force Base. The project site is not within a State responsibility area or classified as a very high fire hazard severity zone. As such, the project site is not susceptible to wildfires. Thus, persons or structures would not be exposed to wildfire hazards. No impact would occur.

Fire Infrastructure

The project site contains undeveloped land and is surrounded by three sides by urban development within the city limits and associated with Travis Air Force Base. The project site is not within a State responsibility area or classified as a very high fire hazard severity zone. As such, the project site is not susceptible to wildfires. Thus, no wildfire suppression infrastructure would be required. No impact would occur.

Post-Fire Flooding or Landslides

The project site contains undeveloped land and is surrounded by three sides by urban development within the city limits and associated with Travis Air Force Base. The project site contains flat relief. The project site is not within a State responsibility area or classified as a very high fire hazard severity zone. As such, the project site is not susceptible to wildfires and, thus, it would not be susceptible to post-fire flooding or landslides. No impact would occur.

CHAPTER 8: PERSONS AND ORGANIZATIONS CONSULTED/LIST OF PREPARERS

8.1 - Lead Agency

8.1.1 - City of Suisun City

City Manager's Office

City Manager ..... Bret Prebula

Community Development Department

Development Services Director ..... Jim Bermudez
Senior Planner ..... John Kearns

Public Works Department

Public Works Director/City Engineer ..... Nouae Vue

8.1.2 - Public Agencies

State Agencies

California Air Resources Board

Chief, Transportation and Air Toxics ..... Heather Arias

California Department of Fish and Wildlife

Regional Manager, Bay Delta Region ..... Greg Erickson

California Department of Transportation

District Branch Chief ..... Mark Leong

Native American Heritage Commission

Cultural Resources Analyst ..... Nancy Gonzalez-Lopez

Local Agencies

Solano County Department of Resource Management

Principal Planner ..... Matt Walsh

Solano Local Agency Formation Commission

Senior Analyst ..... Michelle McIntyre

8.1.3 - Private Parties and Organizations

Center for Biological Diversity

Staff Scientist ..... Tiffany Yap

Legal Fellow.....Mary Rassenfoss

Solano Orderly Growth Committee

Member .....Bob Berman

United Brotherhood of Carpenters and Joiners of America, Carpenters Local No. 180

Senior Field Representative .....Fidel Chavez

8.2 - List of Preparers

8.2.1 - Lead Agency

City of Suisun City

City Manager's Office

City Manager.....Bret Prebula

Community Development Department

Development Services Director .....Jim Bermudez
Senior Planner..... John Kearns

Public Works Department

Public Works Director/City Engineer.....Nouae Vue

8.2.2 - Lead Agency's Consultants

FirstCarbon Solutions

Project Director..... Mary Bean
Director of Cultural Resources .....Dana DePietro, PhD, RPA
Senior Noise Analyst ..... Phil Ault
Air Quality Analyst..... Jackie Winkel
Noise Analyst.....Kimber Johnson
Senior Managing Editor.....Susie Harris
Document Specialist..... Melissa Ramirez
GIS/Graphics .....Karlee McCracken

W-Trans

Principal .....Mark Spencer, PE
Traffic Engineer ..... Kevin Carstens, PE, TE

Coastland Engineering

Senior Engineer.....George Hicks, PE
Senior Engineer..... Laurie Loaiza, PE, QSD

Wade Associates

Principal ..... David Wade, AICP CUD

KSN (Water Supply Assessment)

Engineer ..... Neal Cowell
Engineer-in-Training ..... Patrick Maloney

8.2.3 - Applicant

Buzz Oates Construction, Inc.

Vice President, Planning and Preconstruction Services ..... Joe Livaich
Development Project Manager ..... Frank Ramos
SVP Acquisitions and Development Services ..... Troy Estacio

8.2.4 - Applicant's Consultants

David Babcock + Associates

Senior Project Manager ..... Jeff Berberich

RMW Architecture & Interiors

Architect ..... Jeff Leonhardt
Architect ..... Richard Gabaldon

Robert A. Karn & Associates, Inc.

Principal ..... Richard Karn, PE
Project Manager ..... Tony Perfetto, PE
Civil Engineer ..... James Paluck, PE

Huffman Broadway Group

Biologist ..... Robert Perrera

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SECTION 9: REFERENCES

AirNav. 2021. "KSUU—Travis Air Force Base." Website: https://www.airnav.com/airport/KSUU.

Bay Area Air Quality Management District (BAAQMD). 2021. Air Quality Standards and Attainment Status. Website: http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm. Accessed June 9, 2021.

Bay Area Air Quality Management District (BAAQMD). 2021. Ambient Air Quality. Website: http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm.

Bay Area Air Quality Management District (BAAQMD). 2021. California Environmental Quality Act Air Quality Guidelines. May. Website: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx.

Bay Area Air Quality Management District (BAAQMD). 2021. Stationary Source Screening Analysis Tool. Website: http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools.

CalAdapt. 2021. Local Climate Snapshots. Website: http://cal-adapt.org/tools/factsheet/.

California Air Pollution Control Officers Association (CAPCOA). 2008. CEQA and Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from projects Subject to the California Environmental Quality Act. Website: http://www.capcoa.org/documents/.

California Air Resources Board (ARB). 1998. The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines. Website: www.arb.ca.gov/toxics/dieseltac/factsht1.pdf.

California Air Resources Board (ARB). 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles. Website: http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf.

California Air Resources Board (ARB). 2007. Staff Report. California 1990 Greenhouse Gas Level and 2020 Emissions Limit. November 16, 2007. Website: www.arb.ca.gov/cc/inventory/pubs/reports/staff_report_1990_level.pdf.

California Air Resources Board (ARB). 2009. California Air Resources Board. Vinyl Chloride. Website: http://www.arb.ca.gov/research/aaqs/caaqs/vc/vc.htm.

California Air Resources Board (ARB). 2009. Climate Change Scoping Plan, a framework for change. Website: www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm.

California Air Resources Board (ARB). 2010. Greenhouse Gas Inventory—2020 Forecast. Updated October 28, 2010. Website: www.arb.ca.gov/cc/inventory/data/forecast.htm.

California Air Resources Board (ARB). 2011. California Greenhouse Gas Emissions Inventory 2000–2009. Website: http://www.arb.ca.gov/cc/inventory/pubs/reports/ghg_inventory_00-09_report.pdf.

California Air Resources Board (ARB). 2013. The California Almanac of Emissions and Air Quality, 2013 Edition. Online: https://www.arb.ca.gov/aqd/almanac/almanac13/almanac2013all.pdf.

California Air Resources Board (ARB). 2014. 2014 Edition, California Greenhouse Gas Emission Inventory: 2000-2012. May 2014. Website: www.arb.ca.gov/cc/inventory/pubs/reports /ghg_inventory_00-12_report.pdf.

California Air Resources Board (ARB). 2015. Reducing Short-Lived Climate Pollutants in California. Website: http://www.arb.ca.gov/cc/shortlived/shortlived.htm.

California Air Resources Board (ARB). 2015. Short-Lived Climate Pollutant Reduction Strategy, Concept Paper. May 2015. Website: http://www.arb.ca.gov/cc/shortlived/concept_paper.pdf.

California Air Resources Board (ARB). 2016. Air Quality Standards and Designations. Website: http://www.arb.ca.gov/desig/desig.htm.

California Air Resources Board (ARB). 2016. Historical Air Quality, Top 4 Summary. Website: http://www.arb.ca.gov/adam/topfour/topfour1.php.

California Climate Change Center (CCCC). 2006. Our Changing Climate, Assessing the Risks to California: A Summary Report from the California Climate Change Center. July 2006. CEC-500-2006-077. Website: www.scc.ca.gov/webmaster/ftp/pdf/climate_change/assessing_risks.pdf.

California Department of Conservation, Farmland Mapping and Monitoring Program. 2021. Important Farmland Finder. Website: http://maps.conservation.ca.gov/ciff/ciff.html. Accessed October 10.

California Department of Finance. 2021. E-5 Population and Housing Estimates for Cities, Counties and the State—January 1, 2021.

California Department of Public Health. 2016. California Indoor Radon Test Results. February. Website: http://www.cdph.ca.gov/HealthInfo/environhealth/Documents/Radon/ RnReport02262016.pdf.

California Department of Resources Recycling and Recovery (CalRecycle). 2021. Solid Waste Facility Permit No. 48-AA-0075 (Potrero Hills Landfill). February 17.

California Department of Transportation (Caltrans). 2004. Transportation- and Construction-Induced Vibration Guidance Manual.

California Department of Transportation (Caltrans). 2021. California Scenic Highway System. Website: http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm. Accessed May 8, 2021.

California Department of Water Resources. 2021. "Suisun Marsh Program." Accessed September 29, 2021. Website: http://www.water.ca.gov/suisun/.

California Emissions Estimator Model (CalEEMod).. Version 2016.3.1. Website: http://caleemod.com/.

California Employment Development Department. 2021. Monthly Labor Force Data for Cities and Census Designated Places. March. Website: http://www.labormarketinfo.edd.ca.gov.

California Office of Environmental Health Hazards Assessment (OEHHA). 2012. OEHHA Chemical Database. Website: http://oehha.ca.gov/air/chemicals.

California State Water Resources Control Board (State Water Board) 2022. Storm Water Program. Best Management Practices (BMP) Databases. Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/bmp_database.shtml.

Center for Climate and Energy Solutions (C^2ES). 2015. Addressing Adaptation in a 2015 Climate Agreement. Website: http://www.c2es.org/publications/addressing-adaptation-2015-climate-agreement.

Centers for Disease Control and Prevention. 2010. Department of Health and Human Services, the National Institute for Occupational Safety and Health. Carbon Dioxide. Website: www.cdc.gov/niosh/npg/npgd0103.html.

City of Suisun City. 2012. Fairfield-Suisun Urban Runoff Management Program Stormwater C.3 Guidebook. October. Available Online: http://www.suisun.com/wp-content/files/Stormwater_C.3_Guidebook.pdf.

City of Suisun City. 2015. City of Suisun City 2035 General Plan. May 5.

County of Solano. 2015. Travis Air Force Base Land Use Compatibility Plan. October 8.

Department of Water Resources, the Resources Agency, State of California. October 2008. Managing an Uncertain Future, Climate Change Adaptation Strategies for California's Water. www.water.ca.gov/climatechange/docs/ClimateChangeWhitePaper.pdf.

Fairfield-Suisun Sewer District (FSSD). 2021. 2016 Limited Update of Sewer Master Plan. February 21.

Fairfield-Suisun Sewer District (FSSD). 2021. Agency Website: www.fssd.com. Accessed October 4.

Fairfield-Suisun Sewer District (FSSD). 2021. Operating Data Summary—2016. September 15.

Federal Highway Administration (FHWA). 2006. Highway Construction Noise Handbook. August.

Federal Transit Administration (FTA). 2006. Transit Noise and Vibration Impact Assessment. May.

FirstCarbon Solutions (FCS). 2021. Air Quality Analysis.

FirstCarbon Solutions (FCS). 2021. Health Risk Assessment. July.

FirstCarbon Solutions (FCS). 2021. Noise Analysis. July.

FirstCarbon Solutions (FCS). 2021. Phase I Cultural and Paleontological Resources Assessment.

Foothill Associates. 2016. Special-Status Plant Survey Report. September 26.

Golder Associates. 2017. Potrero Hills Landfill, 2016 Second Semiannual Monitoring Program Report and 2016 Annual Summary. January. Website: https://geotracker.waterboards.ca.gov /esi/uploads/geo_report/3045158088/L10009906356.PDF.

Moser et al. 2009. Moser, Susie, Guido Franco, Sarah Pittiglio, Wendy Chou, Dan Cayan. 2009. The Future Is Now: An Update on Climate Change Science Impacts and Response Options for California. California Energy Commission, PIER Energy-Related Environmental Research Program. CEC-500-2008-071. Website: www.energy.ca.gov/2008publications/CEC-500-2008-071/CEC-500-2008-071.PDF.

National Aeronautics and Space Administration (NASA). 2015. Twelve years of satellite data help decode climate change. Website: http://climate.nasa.gov/news/2264/twelve-years-of-satellite-data-help-decode-climate-change/.

National Toxicology Program. 2011. Report on Carcinogens, Twelfth Edition; U.S. Department of Health and Human Services, Public Health Service. June 10, 2011. Benzene. Website: http://ntp.niehs.nih.gov/ntp/roc/twelfth/profiles/Benzene.pdf.

National Toxicology Program. 2011. Report on Carcinogens, Twelfth Edition; U.S. Department of Health and Human Services, Public Health Service. Diesel Exhaust Particles. Website: http://ntp.niehs.nih.gov/ntp/roc/twelfth/profiles/DieselExhaustParticulates.pdf.

Pacific Gas and Electric Company (PG&E). 2021. 2020 10-K Annual Report.

Raney Geotechnical, Inc. 2015. Preliminary Soil Investigation, Suisun Business Park, Petersen Road Buildings. November 17.

Raney Geotechnical, Inc. 2020. Preliminary Soil Investigation Update, Suisun Business Park, Petersen Road Buildings. August 31.

RMW Architecture & Interiors. 2020. Suisun Logistics Center Plan Set. November.

Robert A. Karn & Associates, Inc. 2020. Hydrology Report for the Suisun Logistics Center. November 6.

Robert A. Karn & Associates, Inc. 2020. Stormwater Control Plan for the Suisun Logistics Center. November 11.

San Francisco Bay Area Regional Water Quality Control Board (San Francisco Bay RWQCB). 2011. 2010 Integrated Report (Clean Water Act Section 303(d) List/305(b) Report).

San Francisco Bay Regional Water Quality Control Board (San Francisco Bay RWQCB). 2011. Basin Plan. Website: www.waterboards.ca.gov/sanfranciscobay/basin_planning.shtml. Accessed May 1, 2017.

Solano County Water Agency. 2017. "North Bay Aqueduct." Website: http://www.scwa2.com/ water-supply/north-bay-aqueduct

Solano Local Agency Formation Commission (Solano LAFCo). 2016. City of Suisun City Municipal Service Review. June 13.

Solano Local Agency Formation Commission. 2014. Solano Irrigation District Municipal Service Review. June 9.

South Coast Air Quality Management District (SCAQMD). 2008. Final Localized Significance Threshold Methodology. Website: http://www.aqmd.gov/docs/default-source/ceqa/handbook /localized-significance-thresholds/final-lst-methodology-document.pdf.

SWCA Environmental Consultants. 2022. Biological Resources Evaluation and Botanical Inventory Report.

The Conti Group. 2016. Travis AFB Site Investigation Report. June 6. Website: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6585494279/T10000001692.PDF.

Travis Air Force Base. 2016. 60th Air Mobility Wing Fact Sheet. February 12. Website: http://www.travis.af.mil/About-Us/Fact-Sheets/Display/Article/855903/60th-air-mobility-wing.

United Nations Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Website: www.ipcc.ch /publications_and_data/ar4/wg1/en/contents.html.

United Nations Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, Pachauri, R.K. and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland. Website: www.ipcc.ch /publications_and_data/ar4/syr/en/contents.html.

United States Department of Agriculture, Natural Resources Conservation Service. 2017. Web Soil Survey. Website: https://websoilsurvey.sc.egov.usda.gov/App /HomePage.htm?TARGET_APP=Web_Soil_Survey_application_wyidlrpsupyrk5ctg0iu2hm4.

United States Environmental Protection Agency (EPA). 1998. Characterization of Building Related Construction and Demolition Debris in the United States. June.

United States Environmental Protection Agency (EPA). 2003. Particle Pollution and your Health. EPA-452/F-03-001. Website: http://epa.gov/pm/pdfs/pm-color.pdf.

United States Environmental Protection Agency (EPA). 2009. Fact Sheet, Proposed Revisions to the National Ambient Air Quality Standards for Nitrogen Dioxide. July 22, 2009. Website: www.epa.gov/air/nitrogenoxides/pdfs/20090722fs.pdf.

United States Environmental Protection Agency (EPA). 2009a. Ozone and your Health. EPA-456/F-09-001. Website: http://www.epa.gov/airnow/ozone-c.pdf.

United States Environmental Protection Agency (EPA). 2010. Technology Transfer Network, Air Toxics Website. Page updated April 5, 2010. Health Effects Notebook for Hazardous Air Pollutants. Website: www.epa.gov/ttn/atw/hlthef/hapindex.html.

United States Environmental Protection Agency (EPA). 2012. EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks. USEPA EPA-420-F-12-051. Website: https://www3.epa.gov/otaq/climate/documents/420f12051.pdf.

United States Geological Survey (USGS). 1987. Denverton, California Historical Topographical Map, 1:24,000 Scale.

Western Regional Climate Center. 2021. Climate Summary: Fairfield, California (042934). Website: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca2934.

World Resources Institute. 2014. CAIT—Country Greenhouse Gas Emissions Data. Website: http://www.wri.org/resources/data-sets/cait-country-greenhouse-gas-emissions-data.

W-Trans. Transportation Analysis. 2021.

Yolo Land & Cattle Co. 2021. Suisun Logistics Center Letter. March 17.

Youngdahl Consulting Group, Inc. 2015. Phase I Environmental Site Assessment, Steffan Ranch, Solano County APNs 0174-190-130 and 174-190-140, Suisun City, California 94585. October.