Contra Costa County, Department of Conservation and Development,
Current Planning Division

DRAFT
Environmental Impact Report
CenterPoint Properties Project
County File #CDDP18-03007, #CDMS19-00009
Contra Costa County, California

State Clearinghouse Number 2019110003

Prepared for:
Contra Costa County
Department of Conservation and Development
30 Muir Road
Martinez, CA 94553
925.674.7774

Contact: Francisco Avila, Principal Planner
925.655.2866
Francisco.Avila@dcd.cccounty.us

Prepared by:
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597
925.357.2562

Contact: Mary Bean, Project Director
Lisa Davison, Project Manager

Date: November 9, 2021

THIS PAGE INTENTIONALLY LEFT BLANK

Table of Contents

List of Appendices

List of Tables

List of Exhibits

THIS PAGE INTENTIONALLY LEFT BLANK

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
AC Transit	Alameda Contra Costa Transit Authority District
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
ACP	Alternative Compliance Plan
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
ADWF	average dry weather flow
AFY	acre-feet per year
AIA	Airport Influence Area
AIC	Archaeological Information Center
AICUZ	Air Installation Compatibility Use Zone
AIRFA	American Indian Religious Freedom Act
ALUC	Airport Land Use Commission
APCD	Air Pollution Control District
APE	Area of Potential Effect
APN	Assessor's Parcel Number
AQI	Air Quality Index
AQMD	Air Quality Management District
ARB	California Air Resources Board
ARPA	Archaeological Resources Protection Act
AST	aboveground storage tank
ASTM	American Society of Testing and Materials
ATCM	Airborne Toxic Control Measures
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
Basin Plan	San Francisco Bay Basin Water Quality Control Plan
BAU	business-as-usual
BayREN	Bay Area Regional Energy Network
BCDC	Bay Conservation and Development Commission

BCE	before Common Era
BCF	billion cubic feet
BCF/year	billion cubic feet per year
BGS	below ground surface
BIOS	Biogeographic Information and Observation System
BMP	Best Management Practice
BP	Business Park
BRA	Biological Resource Assessment
BTU	British Thermal Units
BVOC	biogenic volatile organic compound
C^2ES	Center for Climate and Energy Solution
CA FID	California Facility Inventory Database
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Occupational Safety and Health Administration
CalEEMod	California Emissions Estimator Model
CalEnviroScreen	California Communities Environmental Health Screening Tool
CalRecycle	California Department of Resources, Recycling, and Recovery
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARE	Community Air Risk Evaluation
CBAC	Countywide Bicycle Advisory Committee
CBC	California Building Standards Code
CBPP	Countywide Bicycle and Pedestrian Plan
CCAA	California Clean Air Act
CCCC	California Climate Change Center
CCCFPD	Contra Costa County Fire Protection District
CCCWP	Contra Costa Clean Water Program
CCR	California Code of Regulations
CCTA	Contra Costa Transportation Authority
CCTS	Central California Taxonomic System
CDF	California Department of Finance
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act

CERP	Community Emissions Reduction Program
CESA	California Endangered Species Act
CFC	chlorofluorocarbon
CFD	Community Facilities District (in PD)
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH_4	methane
CHE	Cargo Handling Equipment
CHL	California Historical Landmarks
CHP	California Highway Patrol
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
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPHI	California Points of Historical Interest
CPT	Cone Penetration Testing
CPUC	California Public Utilities Code
CRA	Cultural Resources Assessment
CRHR	California Register of Historical Resources
CTP	Comprehensive Transportation Plan
CTR	California Toxics Rule
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
CWMMP	Conceptual Wetland Mitigation and Monitoring Program
dB	decibel
dBA	A-weighted decibel
dBA/DD	dBA per each doubling of distance
DBH	diameter at breast height
DNL	Day/Night Noise Level
DPM	diesel particulate matter
DTSC	California Department of Toxic Substances Control
du	dwelling unit
du/acre	dwelling unit per acre

EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Park District
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act
EMFAC	EMission FACtors mobile source emissions model
EOP	Emergency Operations Plan
EPA	United States Environmental Protection Agency
ESA	Environmental Site Assessment
ESL	Environmental Screening Level
EV	electric vehicle
FAA	Federal Aviation Administration
FAR	floor area ratio
FCS	FirstCarbon Solutions
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FGC	California Fish and Game Code
FHWA	Federal Highway Administration
FINDS	Facility Index System
FIRM	Flood Insurance Rate Map
FTA	Federal Transit Administration
GHG	greenhouse gas
g/l	grams per liter
GPA	General Plan Amendment
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
HAZNET	Hazardous Waste Tracking System
HCD	California Department of Housing and Community Development
HCD	California Department of Housing and Community Development
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HFC	hydrofluorocarbon
HHDT	heavy-heavy duty truck
HI	Heavy Industry (in PD)
HMBP	Hazardous Materials Business Plan

HMP	Hazard Mitigation Plan
HOV/HOT	High Occupancy Vehicle/High Occupancy Toll
HRA	Health Risk Assessment
HRI	California Historic Resources Inventory
HSC	California Health and Safety Code
HUD	United States Department of Housing and Urban Development
HVAC	heating, ventilation, and air conditioning
HWCL	Hazardous Waste Control Law
ICC	International Code Council
IOU	investor-owned utility
IPCC	United Nations Intergovernmental Panel on Climate Change
ISO	Independent System Operator
ISTEA	Intermodal Surface Transportation Efficiency Act
kW	kilowatts
kWh	kilowatt-hour
LAFCo	Local Agency Formation Commission
LBP	lead-based paint
LCFS	Low Carbon Fuel Standard
LDA	light duty automobile
L_{dn}	day/night average sound level
LDT1	light duty truck 1
LDT2	light duty truck 2
LED	light emitting diode
LEED™	Leadership in Energy and Environmental Design
L_{eq}	equivalent continuous sound level
LEV	Low Emission Vehicle
LHD1	light heavy duty 1
LHD2	light heavy duty 2
LI	Light Industry
L_{max}	maximum noise level
LOS	Level of Service
LRA	Local Responsibility Area
LSE	load-serving entities
LUST	Leaking Underground Storage Tank
MBTA	Migratory Bird Treaty Act
MCY	motorcycle
MDV	medium duty vehicle
mgd	million gallons per day

MH	motorhome
MHDT	medium heavy-duty truck
Miller Pacific	Miller Pacific Engineering Group
MLD	Most Likely Descendant
MM	Mitigation Measure
MMRP	Mitigation Monitoring and Reporting Program
MMT	million metric ton
mpg	miles per gallon
mph	miles per hour
MPO	Metropolitan Planning Organization
MRP	Municipal Regional Permit
MS4	Multiple Separate Storm Sewer System
MT	metric ton
MTC/ABAG	Metropolitan Transportation Commission/Association of Bay Area Governments
MTS	Metropolitan Transportation System
MW	megawatt
MWD	Metropolitan Water District of Southern California
MWh	megawatt-hour
MWELO	Model Water Efficient Landscape Ordinance
MXD	mixed-use development
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NEHRP	National Earthquake Hazards Reduction Program
NEPA	National Environmental Policy Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants
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
NIOSH	National Institute for Occupational Safety and Health
NO_2	nitrogen dioxide
NOAA Fisheries	National Marine Fisheries Service
NOC	Notice of Completion
NOP	Notice of Preparation

NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTR	National Toxics Rule
NWIC	Northwest Information Center
O_3	ozone
OAL	Office of Administrative Law
OBUS	other bus
OEHHA	California Office of Environmental Health Hazard Assessment
OHP	California Office of Historic Preservation
OHWM	ordinary high water mark
ONAC	Federal Office of Noise Abatement and Control
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
pCi/L	picocuries per liter
PDA	Priority Development Area
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
ppd	pounds per day
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
PV	photovoltaic
PVC	polyvinyl chloride
PWWF	Peak Wet Weather Flow
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
Recology	Integrated Resource Recovery Company
RecycleMore	West Contra Costa Integrated Waste
RecycleSmart	Central Contra Costa County Solid Waste Authority
REL	Reference Exposure Level

RHNA	Regional Housing Needs Allocation
RMP	Risk Management Plan
rms	root mean square
ROG	reactive organic gases
RPS	Renewables Portfolio Standard
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SAFE	Safer Affordable Fuel-Efficient
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SBUS	school bus
SCS	Sustainable Communities Strategy
SEBP	South East Bay Plan
SEMS	Standardized Emergency Management System
SF_6	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SFHA	Special Flood Hazard Area
SFPUC	San Francisco Public Utilities Commission
SIP	State Implementation Plan
SMP	Soil Management Plan
SO_2	sulfur dioxide
SOI	Sphere of Influence
SPCC	Spill Prevention, Control, and Countermeasure Rule
SR	State Route
SRA	State Responsibility Area
State Water Board	California State Water Resources Control Board
SVOC	semi-volatile organic compound
SWEEP	State Water Efficiency and Enhancement Program
SWPPP	Storm Water Pollution Prevention Plan
T7 POAK	heavy-heavy duty diesel drayage truck
TAC	toxic air contaminants
TCM	transportation control measures
TDM	Transportation Demand Management
TDS	total dissolved solids
TDV	Time Dependent Valuation
TEA-21	Transportation Equity Act for the 21st Century
Tg	teragram

therms/y	therms per year
TIA	Transportation Impact Assessment
TMA	Transportation Management Association
TMDL	Total Maximum Daily Load
TOD	Transit Oriented Development
TPH-d	total petroleum hydrocarbon as diesel
TPH-mo	total petroleum hydrocarbon as motor oil
UBC	Uniform Building Code
UBUS	urban bus
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
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UWMP	Urban Water Management Plan
V/C	volume to capacity ratio
VdB	vibration in decibels
VDECS	Verified Diesel Emission Control Strategies
VMT	Vehicle Miles Traveled
VOC	volatile organic compound
WCCUSD	West Contra Costa Unified School District
WCWD	West County Wastewater District
WDR	Waste Discharge Requirements
WestCAT	Western Contra Costa Transit Authority
WPCP	Water Pollution Control Plan
WQMP	Water Quality Management Plan
WSA	Water Supply Assessment
WWTP	Wastewater Treatment Plant
ZEV	Zero-Emission Vehicle

THIS PAGE INTENTIONALLY LEFT BLANK

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 CenterPoint Properties Project (referred to herein as the proposed project) (State Clearinghouse No. 2019110003). 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 project site is located at 506 Brookside Drive on the southeast corner of Brookside Drive and Fred Jackson Way (Chapter 2, Project Description, Exhibit 2-2). The site is within unincorporated Contra Costa County. The project site is surrounded on all sides by land within unincorporated Contra Costa County, with the exception of the North Richmond Baseball Field parcel located south of the project site, which is within the City of Richmond. More broadly, east of the project site lies the City of San Pablo and to the north, west, and south is the City of Richmond. The project site is within the City of Richmond Sphere of Influence (SOI).

Project Description

The proposed project would consolidate 19 existing parcels into three parcels that would accommodate development of three warehouses of concrete tilt-up construction totaling 555,537 square feet. Building 1 would be located at the northwest portion of the property and consist of 222,905 square feet of warehouse space and two potential offices totaling 11,732 square feet, for a total of approximately 234,637 square feet. Building 2 would be located on the eastern portion of the site and include 198,482 square feet of warehouse space and two potential offices totaling 10,446 square feet, for a total of approximately 208,928 square feet. Building 3 would be located at the southern portion of the site and include 106,373 square feet of warehouse space and one potential office totaling 5,599 square feet, for a total of approximately 111,972 square feet. In total, Buildings 1, 2 and 3 would cover approximately 12.75 acres of the 31.48-acre project site, or 41 percent.

Although the future occupants are unknown at this time, it is assumed that the overall property will be occupied by warehousing, research and development, or similar light industrial uses consistent

with the P-1 Zoning District. The three buildings could employ up to 573 people. The buildings will be built to Leadership in Energy and Environmental Design (LEED™) standards and will include photovoltaic panels on the roof.

Project Objectives

The objectives of the proposed project are to:

- Develop industrial uses in North Richmond in accordance with the General Plan.
- Implement policies of importance to the County, as reflected in the General Plan, including the County's December 11, 2018, adopted General Plan Amendment (GPA) GP18-0004 to the Conservation Element Section 8.14, Air Resources.
- Reduce greenhouse gas emissions from transportation sources through provision of bicycle and pedestrian facilities.
- Develop an industrial business park that is economically competitive with other similar centers in the land-constrained East Bay market, which will assist the County in competing economically on a domestic and international scale through the efficient and cost-effective movement of goods.
- Develop vacant or underutilized property in the County with an attractive, state-of-the-art industrial business park that meets current industry standards for operational design criteria and that complements the surrounding existing and planned uses.
- Develop warehouse/distribution buildings that meet industry standards for modern, operational design criteria and provide opportunities for warehouse/distribution building users to locate in North Richmond.
- Maximize the utility of sites in close proximity to already established industrial areas, designated truck route and freeways thereby growing the economy and providing a more equal jobs-housing balance while avoiding or shortening truck-trip lengths on other roadways.
- Develop an underutilized or blighted property that has access to available infrastructure, including roads and utilities to be used as part of the supply chain and goods movement network.
- Redevelop an underutilized or blighted property within the County with productive uses that would generate tax revenue and maximize buildout potential for employment-generating uses.
- Improve facilities to connect pedestrians and bicyclists with transit stops, parks, other community gathering places, and adjacent neighborhoods.
- Result in eventual annexation of the project site to the West County Wastewater District.

Significant Unavoidable Adverse Impacts

The proposed project was analyzed for potentially significant impacts related to each of the environmental issues discussed in Sections 3.1 through 3.15. The results of the analysis indicate that the proposed project would result in the following significant and unavoidable impacts:

- **Project-Level Vehicle Miles Traveled:** The proposed project's Vehicle Miles Traveled (VMT) would result in a significant impact given that the location-based service-estimated average one-way trip length for automobile trips generated by the proposed project is more than 20 miles, and the proposed project would be in excess of 15 percent below the nine-county Metropolitan Transportation Commission (MTC) average. The proposed project would implement Mitigation Measure (MM) TRANS-1, which would require the applicant to prepare a project-specific Transportation Demand Management (TDM) Program in consultation with Contra Costa County (County) to reduce project-generated VMT. However, even with incorporation of MM TRANS-1, which would partially reduce VMT impacts, the impact would remain significant and unavoidable.
- **Cumulative VMT:** Other cumulative projects, such as those listed in Chapter 3, Environmental Impact Analysis, Table 3-1, Cumulative Projects, may generate new VMT, which would be added to the regional roadway network. All projects would be required to mitigate their fair share of impacts. Nonetheless, the proposed project, in conjunction with other planned and approved projects, would have a cumulatively significant impact related to VMT. The proposed project would implement MM TRANS-1, which would require the applicant to prepare and implement a project-specific TDM Program in consultation with the County to reduce project-generated VMT. However, even with incorporation of MM TRANS-1, which would partially reduce the proposed project's VMT impacts, the proposed project's incremental contribution to the cumulative impact would remain significant and unavoidable.

Summary of Project Alternatives

Below is a summary of the alternatives to the proposed project considered in Chapter 6, Alternatives to the proposed project.

No Project/No Development Alternative

Under the No Project/No Development Alternative, no development would occur. The three proposed warehouse buildings would not be constructed on the project site. In this scenario, the project site would remain as fallow agricultural land, consisting primarily of non-native grasses, herbaceous plants, and forbs. The existing trees and foundations of several former residential structures, barns, and greenhouse buildings would also remain on the project site. The off-site improvements as described in Chapter 2, Project Description, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would not be developed.

Heavy Industrial/Light Industrial Alternative

The General Plan designates the project site as Heavy Industry (HI) and Light Industry (LI) and anticipates its development. Pursuant to the General Plan Land Use Element, the Heavy Industry designation allows a maximum site coverage up to 30 percent, 45 employees per gross acre, and a floor area ratio (FAR) between 0.1 and 0.4; the Light Industry designation allows a maximum site coverage up to 50 percent, 60 employees per gross acre, and a FAR between 0.25 and 0.67. Land uses permitted by the HI designation include contractors' storage yards, warehouses, machine shops, commercial nurseries, heavy equipment operation, metalworking, and chemical or petroleum product processing and refining. Land uses permitted by the LI designation include research, engineering, product development and testing, sales development, light manufacturing, warehousing, distribution centers, and commercial nurseries. Support retail/service uses may also be located within the HI and LI designations (with a General Plan Amendment). Based on the surrounding industrial land uses and the current rate of development in the County, it is reasonably foreseeable that the site will be developed with heavy and light industrial uses consistent with the General Plan. This scenario could result in the development of up to 321,081 square feet of heavy industrial uses on 7.37 acres and up to 118,265 square feet of light industrial uses on 2.72 acres, for a total of 439,346 square feet.

Single Warehouse Alternative

Under the Single Warehouse Alternative, only one warehouse building would be constructed on the project site. Under this scenario, all existing improvements (foundations associated with the former structures, asphalt, concrete, fence poles, and retaining walls) would be demolished, and one concrete tilt-up warehouse, totaling 183,456 square feet would be constructed. The warehouse building would include 165,456 square feet of warehouse space and 18,000 square feet of office space. This alternative would also include approximately 196,245 square feet of landscaped areas (including bioretention areas), 343 auto parking spaces, eight trailer parking spaces, 915 delivery van parking spaces, and on-site bicycle and pedestrian facilities. The future occupant would be an e-commerce last mile distribution company, consistent with the North Richmond P-1 Zoning District and LI and HI General Plan designations. The future occupant would implement construction and operational best practices to reduce emissions and improve air quality as described in Chapter 2, Project Description. The warehouse building could employ up to 850 people and would operate 24 hours a day, 7 days a week. The off-site improvements as described in Chapter 2, Project Description, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would be developed under this 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 November 1, 2019. The NOP describing the original concept for the 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 November 1, 2019, through December 2, 2019. The NOP identified the potential for significant impacts on the environment related to the following topical areas:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural-Tribal Cultural Resources
- Geology and Soils
- Hydrology and Water Quality
- Noise
- Transportation

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 County is not aware of any disputed conclusions at the time of this writing. Both 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 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:

- Due to the existing air pollution in the North Richmond Community, air quality impacts should be conservatively estimated and analyzed.
- Operational air quality impacts on youth health from large warehouses being located in close proximity to a school.
- Mitigation for Cultural and Tribal Cultural Resources should they be uncovered during excavation.
- Request for Tribal Monitors being present for all ground-disturbing activities if tribal cultural resources are identified within project area.
- Impacts to drainage area and proposed mitigation to address those impacts.
- Transportation impacts and poor traffic conditions in the project area, including trucks routing through residential neighborhood.

It is also possible that evidence could be presented during the 45-day, 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 public Draft EIR, the County 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, the 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 Contra Costa County website (https://www.contracosta.ca.gov/7605/Major-Planning-Applications-Under-Consid). Hard copies of the Draft EIR can be viewed at the following County facilities (please check with the facilities for hours of operation):

Contra Costa County
Department of Conservation and Development
30 Muir Road
Martinez, CA 94553

Pleasant Hill Library
Contra Costa County Main Branch
100 Gregory Lane
Pleasant Hill, CA 94523

Office of District 1 County Supervisor, John Gioia
11780 San Pablo Avenue, Suite D
El Cerrito, CA 94530

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

Francisco Avila, Principal Planner
Contra Costa County
Department of Conservation and Development
Community Development Division
30 Muir Road
Martinez, CA 94553
Tel: 925.655.2866
Fax: 925.674.2758
Email: Francisco.Avila@dcd.cccounty.us

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 Contra Costa County Planning Commission on the project, at which the certification of the Final EIR will also 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.

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 PAGE INTENTIONALLY LEFT BLANK

Table ES-1: Executive Summary Matrix

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Section 3.1—Aesthetics			
Impact AES-1: The proposed project would not have a substantial adverse effect on a scenic vista.	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact AES-2: The proposed project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a State scenic highway.	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact AES-3: The proposed project is in an urbanized area and would not conflict with applicable zoning and other regulations governing scenic quality.	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact AES-4: The proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	Potentially significant impact.	**MM AES-1: Prepare Final Lighting Plan** At least 30 days prior to applying for a building permit, the applicant shall submit for review and approval by the Contra Costa County Department of Conservation and Development staff a Final Lighting Plan. Light standards shall be low-lying and exterior lights on the buildings shall be deflected so that lights shine onto the applicant's property.	Less than significant impact.
Cumulative Impact	Less than significant impact.	No mitigation required.	Less than significant impact.
Section 3.2—Air Quality			
Impact AIR-1: The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.	Less than significant impact.	No mitigation required.	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact AIR-2: The proposed project could 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.	Potentially significant impact.	**MM AIR-2a: Construction Exhaust** The project applicant shall ensure, at minimum, the use of equipment that meets the United States Environmental Protection Agency's (EPA) Tier 4 Interim emissions standards for off-road diesel-powered construction equipment with more than 50 horsepower for all site preparation, grading, and building construction activities, unless it can be demonstrated, to the Contra Costa County Department of Conservation and Development's satisfaction, that such equipment is not available. Any emission control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by Tier 4 Interim emissions standards for a similarly sized engine, as defined by the California Air Resources Board (ARB) regulations. Prior to the issuance of building or grading permits, the project applicant shall ensure that all construction (e.g., demolition and grading) plans clearly show the requirement for EPA Tier 4 Interim emissions standards for construction equipment over 50 horsepower for the specific activities stated above. During construction, the project applicant shall ensure that a list of all operating equipment in use on the construction site is maintained on-site for verification by the Contra Costa County Department of Conservation and Development. The construction equipment list shall state the makes, models, Equipment Identification Numbers, and number of construction equipment on-site. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. Construction contractors shall also ensure that all nonessential idling of construction equipment is restricted to 5 minutes or less in compliance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9. **MM AIR-2b: Fugitive Dust Control Measures** The project's construction contractor shall comply with the following Bay Area Air Quality Management District (BAAQMD) Best Management Practices (BMPs) for reducing construction emissions of PM_{10} and $PM_{2.5}$: • Water all active construction areas at least twice daily, or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour (mph). Reclaimed water should be used whenever possible.	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		• To control dust, pave, apply water twice daily or as often as necessary, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites. • Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer). • Sweep daily with water sweepers (using reclaimed water if possible) or as often as needed, all paved access roads, parking areas, and staging areas at the construction site to control dust. • Sweep public streets daily (with water sweepers using reclaimed water if possible) or as often as needed in the vicinity of the project site to keep streets free of visible soil material. • Hydroseed or apply non-toxic soil stabilizers to inactive construction areas. • Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (e.g., dirt, sand, etc.). • Limit vehicle traffic speeds on unpaved roads to 15 mph. • Replant vegetation in disturbed areas as quickly as possible. • Install sandbags or other erosion control measures to prevent silt runoff from public roadways.	
Impact AIR-3: The proposed project would not expose sensitive receptors to substantial pollutant concentrations.	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact AIR-4: The proposed project could result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	Potentially significant impact.	**MM AIR-4a Odor Management Plan** Prior to issuance of the certificate of occupancy, Contra Costa County shall require future tenants proposing operations that have potential to emit nuisance odors to prepare an odor management plan that identifies project design features, measures, and control technologies to ensure compliance with Bay Area Air Quality Management District (BAAQMD) Regulation 7, Odorous Substances, which requires abatement of any nuisance generating an odor complaint. Facilities that have the potential to generate nuisance odors include, but are not limited to: • Composting, green waste, or recycling facilities • Fiberglass manufacturing facilities • Painting/coating operations	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		• Large-capacity coffee roasters • Laboratory operations • Food-processing facilities The odor management plan for the proposed facility shall be submitted to the County prior to the issuance of the certificate of occupancy. During operation of the proposed facility, the County shall conduct periodic evaluation of on-site odors per the schedule and reporting requirements outlined in the odor management plan.	
Cumulative Impact	Potentially significant impact.	Implement MM AIR-2a, MM AIR-2b, and MM AIR-4.	Less than significant impact.
Section 3.3—Biological Resources			
Impact BIO-1: The proposed project could 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.	Potentially significant impact.	**MM BIO-1a: Nesting Bird Surveys** If feasible, construction work should take place outside of the February 1 to August 31 breeding window for nesting birds. If construction is to be conducted during the breeding season, a qualified Biologist should conduct a pre-construction breeding bird survey in areas of suitable habitat within 5 days prior to the commencement of construction activity. In the event that there is a lapse in construction activities for 5 days or more, a qualified Biologist shall conduct a pre-construction breeding bird survey in areas of suitable habitat again. If bird nests are found, appropriate buffer zones shall be established around all active nests to protect nesting adults and their young from construction disturbance. In general, the California Department of Fish and Wildlife (CDFW) recommends a 250-foot construction exclusion zone around the nests of active passerine birds during the breeding season, and a 500-foot buffer for nesting raptors. Buffers shall be determined based upon factors such as topography, line of sight, activities being conducted, and species. The buffer zone shall be approved by a qualified Biologist with extensive training in bird nest surveys prior to the commencement of construction activity. Buffer zones shall be maintained until it can be documented that either the nest has failed, or the young have fledged.	Less than significant impact.
Impact BIO-2: The proposed project would not have a substantial adverse effect on any riparian habitat or other	Less than significant impact.	No mitigation required.	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
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.			
Impact BIO-3: The proposed project would not 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.	No impact.	No mitigation required.	No impact.
Impact BIO-4: The proposed project would not 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.	Potentially significant impact.	Implement MM BIO-1a.	Less than significant impact.
Impact BIO-5: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	No impact.	No mitigation required.	No impact.
Impact BIO-6: The proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.	No impact.	No mitigation required.	No impact.
Cumulative Impact	Less than significant impact.	No mitigation required.	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Section 3.4—Cultural Resources and Tribal Cultural Resources			
Impact CUL-1: The proposed project could cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.	Potentially significant impact.	**MM CUL-1: Worker Training, Archaeological Monitoring, and Halt Construction Upon Encountering Historical or Archaeological Materials** Prior to the initiation of construction activities, an Archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for archaeology shall provide Worker Environmental Awareness Program (WEAP) training to construction personnel with an overview of applicable laws, project mitigation measures, and procedures to be followed with regards to historical and/or archaeological resources that may be encountered over the course of the project. An Archaeologist should be present to monitor all ground-disturbance activities. In the event a potentially significant Historical and/or archaeological 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 has evaluated the situation. The applicant for the proposed project (CenterPoint Properties) 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 shall make recommendations concerning appropriate measures that shall be implemented to protect the resource, including but not limited to excavation and evaluation of the finds in accordance with Section 15064.5 of the CEQA Guidelines. 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 Contra Costa County Department of Conservation and Development, the Northwest Information Center (NWIC), and the California Office of Historic Preservation (OHP), as required.	Less than significant impact.
Impact CUL-2: The proposed project could cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.	Potentially significant impact.	Implement MM CUL-1.	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact CUL-3: The proposed project could disturb human remains, including those interred outside of formal cemeteries.	Potentially significant impact.	**MM CUL-3: Stop Construction upon Encountering Human Remains** 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 Resources Code Section 5097.98. 2. Where the following conditions occur, the landowner or his or her authorized representative shall work with the Coroner to rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the MLD if available or on the project site or off-site where the reburial would not be 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 NAHC. • 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.	Less than significant impact.
Impact CUL-4: The proposed project could cause a substantial adverse change in the significance of a Tribal Cultural Resource that is listed or eligible for	Potentially significant impact.	**MM CUL-4a: Native American Construction Monitoring** To minimize the potential for destruction of or damage to existing or previously undiscovered burials, archaeological and Tribal Cultural Resources (TCRs) and to identify any such resources at the earliest possible time during project-related	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
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).		earthmoving activities, the project applicant and its construction contractor(s) shall implement the following measures: • Native American Monitors from culturally affiliated Native American Tribes shall be invited to monitor the vegetation grubbing, stripping, grading or other ground-disturbing activities in the project area to determine the presence or absence of any cultural resources. Native American representatives from cultural affiliated Native American Tribes shall act as a representative of their Tribal Government and shall be consulted before any cultural studies or ground-disturbing activities begin. • Native American representatives and Native American Monitors have the authority to identify sites or objects of significance to Native Americans and to request that work be stopped, diverted, or slowed if such sites or objects are identified within the direct impact area. Only a Native American representative can recommend appropriate treatment of such sites or objects. • If buried cultural resources, such as chipped or ground stone, historic debris, building foundations, or bone, are discovered during ground-disturbing activities, work will stop in that area and within 100 feet of the find until an archaeologist who meets the Secretary of the Interior' s qualification standards can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the County, the California Office of Historic Preservation (OHP), and other appropriate agencies. Appropriate treatment measures may include development of avoidance or protection methods, archaeological excavations to recover important information about the resource, research, or other actions determined during consultation. **MM CUL-4b: Avoidance and Preservation in place of Tribal Cultural Resources** Should Tribal Cultural Resources (TCRs) be discovered during project construction, avoidance and preservation in place is the preferred manner of mitigating impacts to TCRs and shall be accomplished by several means, including: • Planning construction to avoid TCRs, archaeological sites and/ or other resources; incorporating sites within parks, green-space, or other open space;	

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		covering archaeological sites; deeding a site to a permanent conservation easement; or other preservation and protection methods agreeable to consulting parties and regulatory authorities with jurisdiction over the activity. As noted in Mitigation Measure CUL-4a, appropriate treatment measures may include archaeological excavations to recover information about the resource. Recommendations for avoidance of cultural resources shall be reviewed by the CEQA Lead Agency representative (Contra Costa County), interested Native American Tribes and the appropriate agencies, in light of factors such as costs, logistics, feasibility, design, technology and social, cultural and environmental considerations, and the extent to which avoidance is consistent with project objectives. If feasible, avoidance and design alternatives may include realignment within the project area to avoid cultural resources, modification of the design to eliminate or reduce impacts to cultural resources or modification or realignment to avoid highly significant features within a cultural resource. Native American representatives from interested Native American Tribes shall be allowed to review and comment on these analyses and shall have the opportunity to meet with the CEQA Lead Agency (Contra Costa County) representative and its representatives who have technical expertise to identify and recommend feasible avoidance and design alternatives, so that appropriate and feasible avoidance and design alternatives can be identified. • If the resource can be avoided, the construction contractor(s), with Native American Monitors from culturally affiliated Native American Tribes present, shall install protective fencing outside the site boundary, including a buffer area, before construction restarts. The construction contractor(s) shall maintain the protective fencing throughout construction to avoid the site during all remaining phases of construction. The area shall be demarcated as an "Environmentally Sensitive Area." Native American representatives from interested Native American Tribes and the CEQA Lead Agency (Contra Costa County) representative shall also consult to develop measures for long-term management of the resource and routine operation and maintenance within culturally sensitive areas that retain resource integrity, including tribal cultural integrity, and including archaeological material, Traditional cultural properties and cultural landscapes, in accordance with State and federal guidance including National Register Bulletin 30 (Guidelines for Evaluating and	

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Documenting Rural Historic Landscapes), Bulletin 36 (Guidelines for Evaluating and Registering Archaeological Properties), and Bulletin 38 (Guidelines for Evaluating and Documenting Traditional Cultural Properties); National Park Service Preservation Brief 36 (Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes) and using the Advisory Council on Historic Preservation (ACHP) Native American Traditional Cultural Landscapes Action Plan for further guidance. Use of temporary and permanent form of protective fencing shall be determined in consultation with the Native American representatives from interested Native American Tribes.	
Impact CUL-5: The proposed project could cause a substantial adverse change in the significance of a Tribal Cultural 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.	Potentially significant impact.	Implement MM CUL-4a and MM CUL-4b.	Less than significant impact.
Cumulative Impact	Potentially significant impact.	Implement MM CUL-1 through MM CUL-4b.	Less than significant impact.
Section 3.5—Energy			
Impact ENER-1: 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.	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact ENER-2: The proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency.	Less than significant impact.	No mitigation required.	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Cumulative Impact	Less than significant impact.	No mitigation required.	Less than significant impact.
Section 3.6—Geology and Soils			
Impact GEO-1: The proposed project could 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.	Potentially significant impact (ground shaking and liquefaction).	**MM GEO-1a**: **Prepare Grading and Construction Plans that Incorporate Geotechnical Investigation Recommendations** Prior to issuance of the grading permits for the proposed project, development of the final grading, foundation, and construction plans shall incorporate the site-specific earthwork, foundation, floor slab, finished grades, underground utilities, and pavement design recommendations, as detailed in the Geotechnical Investigation prepared by Cornerstone Earth Group dated August 22, 2018. The applicant shall coordinate with the County Department of Conservation and Development and County Geologist to tailor the grading and foundation plans, as needed, to reduce risk related to known soil and geologic hazards. The final grading, foundation, and construction plans for the proposed project shall be reviewed by the County Department of Conservation and Development and County Geologist. Grading operations shall meet the requirements of the recommendations included in the Preliminary Geotechnical Investigation prepared by Cornerstone Earth Group. During construction, the County Department of Conservation and Development shall monitor construction of the proposed project to ensure the earthwork operations are properly performed. **MM GEO-1b: Prepare Final Construction Report** The Project Geotechnical Engineer shall prepare a final report that documents the field observations and testing services provided during construction as well as provide a professional opinion on the compliance of construction with the recommendations in the Geotechnical Investigation. The final report can be segmented into an as-graded report that is issued at the end of rough grading, but prior to the installation of the foundations, and a second letter commenting on the inspections made during installation of foundations/parking lot/drainage facilities. The County Department of Conservation and Development will place a hard hold on the final inspection, to ensure that the Geotechnical Engineer's grading-foundation inspection letter-report is provided prior to requesting the final building inspection for each building.	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact GEO-2: The proposed project would not result in substantial soil erosion or the loss of topsoil.	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact GEO-3: The proposed project is 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.	Potentially significant impact.	Implement MM GEO-1a and MM GEO-1b.	Less than significant impact.
Impact GEO-4: The proposed project is 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.	Potentially significant impact.	Implement MM GEO-1a and MM GEO-1b.	Less than significant impact.
Impact GEO-5: The proposed project would not 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.	No impact.	No mitigation required.	No impact.
Impact GEO-6: The proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Less than significant impact.	No mitigation required.	Less than significant impact.
Cumulative	Less than significant impact.	No mitigation required.	Less than significant impact.
Section 3.7—Greenhouse Gas Emissions			
Impact GHG-1: The proposed project could generate greenhouse gas emissions, either directly or indirectly,	Potentially significant impact.	**MM GHG-1a**: Prior to the issuance of building permits, the project applicant/developer shall demonstrate (e.g., provide building plans) to the satisfaction of the Contra Costa County Department of Conservation and	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
that may have a significant impact on the environment.		Development, that the proposed buildings are designed and will be built to, at minimum, meet the Tier 2 advanced energy efficiency requirements of the Nonresidential Voluntary Measures of the California Green Building Standards Code, Division A5.2, Energy Efficiency, as outlined under Section A5.203.1.2.2. **MM GHG-1b:** Prior to issuance of occupancy permits, the project applicant/developer shall demonstrate to the satisfaction of the Contra Costa County Department of Conservation and Development, that the proposed parking areas for passenger automobiles are designed and will be built to accommodate electric vehicle (EV) charging stations. At minimum, the parking shall be designed to accommodate a number of EV charging stations equal the Tier 2 Nonresidential Voluntary Measures of the California Green Building Standards Code, Section A5.106.5.3.2. **MM GHG-1c:** Prior to issuance of occupancy permits, the project applicant/developer shall demonstrate to the satisfaction of the Contra Costa County Department of Conservation and Development, that the proposed parking areas for passenger automobiles are designed and will be built to provide parking for low-emitting, fuel-efficient, and carpool/van vehicles. At minimum, the number of preferential parking spaces for passenger automobiles shall equal the Tier 2 Nonresidential Voluntary Measures of the California Green Building Standards Code, Section A5.106.5.1.2. **MM GHG-1d**: To reduce idling emissions from transport trucks, which places restrictions on idling, the project applicant/developer shall have signage placed at truck access gates, loading docks, and truck parking areas that clearly notes idling is strictly prohibited on the subject property. In coordination with Contra Costa County, the project applicant/developer shall also place similar signs in the adjacent streets in the Richmond/San Pablo area. At minimum, each sign placed outside the interior premises of the subject property shall note the idling prohibition on the adjacent streets and include telephone numbers of the building facilities manager and the California Air Resources Board (ARB) to report violations. All signage shall be made of weather-proof materials. All site and architectural plans submitted to the Contra Costa County Department of Conservation and Development shall note the locations of these signs. Prior to	

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		issuance of occupancy permits, the Contra Costa County Department of Conservation and Development shall verify compliance with these requirements herein. **MM GHG-1e:** All landscaping equipment (e.g., leaf blower) used for property management shall be electric-powered only. The property manager/facility owner shall provide documentation (e.g., purchase, rental, and/or services agreement) to the Contra Costa County Department of Conservation and Development to verify, to the County's satisfaction, that all landscaping equipment utilized will be electric-powered. **MM GHG-1f:** Prior to the issuance of grading and building permits for the proposed project, the project applicant shall provide Contra Costa County with documentation demonstrating that the rooftop photovoltaic system will satisfy 100 percent of operational electricity consumed by the project, including the electricity demand resulting from the electric vehicle (EV) fleet. If the rooftop photovoltaic system will not be able to supply the additional electricity demand resulting from the replacement of natural gas appliances, equipment, and building features with electric equivalents, the project applicant shall, prior to the issuance of the certificate of occupancy for the proposed project, provide Contra Costa County 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, Pacific Gas and Electric's (PG&E) 100 Percent Solar Choice electricity service option or Marin Clean Energy's (MCE) Deep Green 100 percent renewable electricity service option. This documentation shall also demonstrate that 100 percent carbon-free electricity sources will be utilized for the first 30 years of operation. 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 of all electricity consumption and supply associated with the proposed project's operation for five years and make these records available to the County upon request.	

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		MM GHG-1g: Prior to the issuance of the certificate of occupancy for the proposed project, the project applicant shall provide the County with documentation demonstrating the purchase of voluntary carbon credits pursuant to the following performance standards and requirements: the carbon offsets shall achieve real, permanent, quantifiable, verifiable, and enforceable reductions as set forth in California Health and Safety Code Section 38562(d)(1); and ii. one carbon offset credit shall mean the past reduction or sequestration of one metric ton (MT) of carbon dioxide equivalent (CO_2e) that is "not otherwise required" (CEQA Guidelines § 15126.4(c)(3)). The purchase shall be through a verified greenhouse gas (GHG) emissions credit broker in an amount sufficient to offset operational GHG emissions of no less than 3,688 MT CO_2e per year starting in 2021, 3,384 MT CO_2e per year starting in 2023, 530 MT CO_2e per year starting in 2025, 371 MT CO_2e per year starting in 2027, and 2,205 MT CO_2e per year starting in 2045 for the first 30 years of project operations, based on current estimates of the project related GHG emissions. Alternatively, the project applicant may purchase the total amount estimated over the lifetime of the proposed project (30 years), which is estimated to be 35,112 MT CO_2e. The purchase shall be verified as occurring prior to approval of occupancy permits. Copies of emission estimates and offset purchase contract(s) shall be provided to the County for review and approval prior to the issuance of the certificate of occupancy for the proposed project. Implement MM TRANS-1.	
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.	Less than significant impact.	No mitigation required.	Less than significant impact.
Cumulative	Less than significant impact.	No mitigation required.	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Section 3.8—Hazards and Hazardous Materials			
Impact HAZ-1: The proposed project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Potentially significant impact.	**MM HAZ-1: Prepare Soil Management Plan and Health and Safety Plan** Prior to issuance of grading permits, the applicant shall retain a licensed professional to prepare and submit a Soil Management Plan and Health and Safety Plan for review and approval by Contra Costa Environmental Health. These plans shall include the following: • Site control procedures to control the flow of personnel, vehicles, and materials in and out of the project site. • Measures to minimize dust generation, stormwater runoff, and tracking soil off-site. • If excavation de-watering is required, protocols to evaluate water quality and discharge/disposal alternative should be described. • Protocols for conducting earthwork activities in areas where impacts soil, soil vapor, and/or groundwater are present or suspected. Worker training requirements, health and safety measures, and soil handling procedures shall be described. • Protocols to be implemented if buried tanks, structures, wells, debris, or unidentified areas of impacted soils are encountered during construction activities. • Protocols to evaluate the quality of soil suspected of being contaminated so that appropriate mitigation, disposal or reuse alternatives, if necessary, can be determined. • Procedures to evaluate and document the quality of any soil imported to the project site. Soil containing chemicals exceeding residential (unrestricted use) screening levels or typical background concentrating of metals should not be accepted. • Methods to monitor excavations for the potential presence of volatile chemical vapors.	Less than significant impact.
Impact HAZ-2: The proposed project could 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.	Less than significant impact.	No mitigation required.	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact HAZ-3: The proposed project could emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing school or proposed school.	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact HAZ-4: The proposed project would not 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.	Potentially significant impact.	Implement MM HAZ-1.	Less than significant impact.
Impact HAZ-5: The proposed project would not be 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, and result in a safety hazard or excessive noise for people residing or working the project area.	No impact.	No mitigation required.	No impact.
Impact HAZ-6: The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact HAZ-7: The proposed project would not expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires.	Less than significant impact.	No mitigation required.	Less than significant impact.
Cumulative	Less than significant impact.	No mitigation required.	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Section 3.9—Hydrology and Water Quality			
Impact HYD-1: The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact HYD-2: The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the proposed project may impede sustainable groundwater management of the basin.	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact HYD-3: The proposed project would not substantially alter the existing drainage pattern of the site or 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.	Potentially significant impact.	**MM HYD-3: Prepare Final Drainage Plan Prior to Grading** • In accordance with Division 914 of the Contra Costa County Ordinance Code, the project applicant shall collect and convey all stormwater entering and/or originating on this property, without diversion and within an adequate storm drainage facility, to a natural watercourse having definable bed and banks, or to an existing adequate public storm drainage system that conveys the stormwater to a natural watercourse. Any proposed diversions of the watershed shall be subject to hearing body approval. Prior to issuance of a grading permit, the applicant shall submit improvement plans for proposed drainage improvements, and a drainage report with hydrology and hydraulic calculations to the Engineering Services Division of the Public Works Department for review and approval that demonstrates the adequacy of the on-site drainage system and the downstream drainage system. The applicant shall verify the adequacy at any downstream drainage facility accepting stormwater from this project prior to discharging runoff. If the downstream system(s) is not adequate to handle the Existing Plus Project condition for the required design storm, improvements shall be constructed to make the system adequate. The applicant shall obtain access rights to make any necessary improvements to off-site facilities. • In accordance with Division 1014 of the Contra Costa County Ordinance Code,	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		the applicant shall comply with all rules, regulations, and procedures of the National Pollutant Discharge Elimination System (NPDES) for municipal, construction and industrial activities as promulgated by the California State Water Resources Control Board, or any of its Regional Water Quality Control Boards (San Francisco Bay—Region 2); and • Submit a Final Stormwater Control Plan and a Stormwater Control Operation and Maintenance Plan (O&M Plan) to the Public Works Department, which shall be reviewed for compliance with the County's NPDES Permit and shall be deemed consistent with the County's Stormwater Management and Discharge Control Ordinance (Division 1014) prior to issuance of a building permit. Improvement Plans shall be reviewed to verify consistency with the Final Stormwater Control Plan and compliance with the Contra Costa Stormwater C.3 Guidebook of the County's NPDES Permit and the County's Stormwater Management and Discharge Control Ordinance (Division 1014) and be designed to discourage prolonged standing/ponding of water on-site.	
Impact HYD-4: The proposed project would not be located in a flood hazard zone, tsunami, or seiche zone, or risk release of pollutants due to project inundation.	Potentially significant impact.	Implement MM HYD-3.	Less than significant impact.
Impact HYD-5: The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	Less than significant impact.	No mitigation required.	Less than significant impact.
Cumulative	Less than significant impact.	No mitigation required.	Less than significant impact.
Section 3.10—Land Use and Planning			
Impact LAND-1: The proposed project would not physically divide an established community.	Less than significant impact.	No mitigation required.	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact LAND-2: The proposed project would not 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.	Less than significant impact.	No mitigation required.	Less than significant impact.
Cumulative	Less than significant impact.	No mitigation required.	Less than significant impact.
Section 3.11—Noise			
Impact NOI-1: The proposed project would not 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.	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact NOI-2: 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.	Potentially significant impact (construction noise only).	**MM NOI-1: Implement Noise Reduction Measures During Construction** The construction contractor shall ensure that grading activities shall be restricted to the hours between 7:30 a.m. and 5:30 p.m., Monday through Friday.	Less than significant impact.
Impact NOI-3: The proposed project would not result in generation of excessive groundborne vibration or groundborne noise levels.	Less than significant impact.	No mitigation required.	Less than significant impact.
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	No impact.	No mitigation required.	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
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.			
Cumulative	Less than significant impact.	No mitigation required.	Less than significant impact.
Section 3.12—Public Services			
Impact PUB-1: The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection.	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact PUB-2: The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection.	Less than significant impact.	No mitigation required.	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact PUB-3: The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities, need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for schools.	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact PUB-4: The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered library facilities, need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for library facilities.	Less than significant impact.	No mitigation required.	Less than significant impact.
Cumulative	Less than significant impact.	No mitigation required.	Less than significant impact.
Section 3.13—Transportation			
Impact TRANS-1: The proposed project may result in an increase in vehicle miles traveled that exceed the regional threshold.	Potentially significant impact.	**MM TRANS-1**: Prior to issuance of the certificate of occupancy, the applicant shall retain a qualified transportation consultant to prepare a project-specific Transportation Demand Management (TDM) Program that could incorporate the following measures, where feasible. The TDM Program shall be reviewed and approved by the County, and the applicant shall implement all approved TDM measures. • Commute Trip Reduction Program • Ride-sharing Program • End of Trip Facilities	Significant and unavoidable impact, reduced to the extent feasible with MM TRANS-1.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		• Last Mile Services • New Employee Commute Orientation • Preferential Parking Program • Employer-Sponsored Vanpool • Transportation Network Company (TNC) Partnership • Employer-Sponsored Shuttle to/from BART Station(s) or Other Transit Hub • Carpool and Vanpool Ride-Matching Services	
Impact TRANS-2: The proposed project may substantially increase roadway safety hazards due to a geometric design feature or incompatible uses.	Potentially significant impact.	**MM TRANS-2a:** Prior to issuance of the certificate of occupancy for the proposed project, the applicant shall install a median and bulb-outs on Fred Jackson Way along the project frontage, stop signs at the project driveways, and signage prohibiting vehicles from turning left out of the project driveways. **MM TRANS-2b**: Prior to issuance of the building permit, the applicant shall (1) pay the North Richmond Area of Benefit (AOB) fee and (2) commit to installing one of the following improvements on Fred Jackson Way, Market Avenue, or Chesley Avenue prior to project occupancy: • Bulb-outs • Elevated crosswalks • Speed tables • Chicanes	Less than significant impact.
Impact TRANS-3: The proposed project would not result in inadequate emergency access.	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact TRANS-4: The proposed project may conflict with a plan for public transit, pedestrians, and bicycles.	Potentially significant impact.	**MM TRANS-4a:** Prior to the issuance of the certificate of occupancy, the applicant shall install curb ramps where required at all pedestrian walkways and pedestrian connections between the three buildings. The applicant shall install pedestrian crossings on all four approaches of Fred Jackson Way and Brookside Drive (including ADA-compliant pedestrian landing islands). The applicant shall install pedestrian crossings on all four approaches of Fred Jackson Way and Pittsburg Avenue (including ADA-compliant pedestrian landing islands). **MM TRANS-4b:** Prior to the issuance of the certificate of occupancy, the applicant shall install long-term bicycle parking consistent with County Code	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Section 82-16.412 and other bicycle amenities (showers, changing rooms, bike repair tools/station, etc.) in a convenient location.	
Cumulative	Potentially significant impact.	Implement MM TRANS-1, TRANS-2a, TRANS-2b, TRANS-4a, and TRANS-4b.	Significant and unavoidable cumulative VMT impact with mitigation incorporated.
Section 3.14—Utilities and Service Systems			
Impact UTIL-1: The proposed project would not 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?	Potentially significant impact.	Implement MM HYD-3.	Less than significant impact.
Impact UTIL-2: The proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact UTIL-3: The proposed project would not 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.	Less than significant impact.	No mitigation required.	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact UTIL-4: The proposed project would not 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.	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact UTIL-5: The proposed project would comply with federal, state, and local statutes and regulations related to solid waste.	Less than significant impact.	No mitigation required.	Less than significant impact.
Cumulative	Less than significant impact.	No mitigation required.	Less than significant impact.
Section 3.15—Wildfire			
Impact WILD-1: The proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan.	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact WILD-2: The proposed project would not due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	Less than significant impact.	No mitigation required.	Less than significant impact.
Impact WILD-3: The proposed project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.	Less than significant impact.	No mitigation required.	Less than significant impact.

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact WILD-4: The proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.	Less than significant impact.	No mitigation required.	Less than significant impact.
Cumulative	Less than significant impact.	No mitigation required.	Less than significant impact.

CHAPTER 1: INTRODUCTION

This Draft Environmental Impact Report (Draft EIR) for the CenterPoint Properties Project (proposed project) has been prepared in accordance with—and complies with—criteria, standards, and procedures of the California Environmental Quality Act (CEQA), as amended (California Public Resources Code [PRC], § 21000, *et seq*.) and the CEQA Guidelines (California Code of Regulations [CCR], Title 14, § 15000, *et seq*.). In accordance with Sections 21067, 15367, and 15050–15053 of the CEQA Guidelines, Contra Costa County (County) is the lead agency under whose authority this document has been prepared. As an informational document, this Draft EIR is intended for use by the County and other public agency decision makers and members of the public in evaluating the potential environmental impacts of the proposed project.

1.1 - Project Overview

The 31.48-acre project site consists of 19 parcels and is located at 506 Brookside Drive on the southeast corner of Brookside Drive and Fred Jackson Way within unincorporated Contra Costa County (see Exhibits 2-1 and 2-2). The project site contains the foundations of several former residential structures, barns, and greenhouse buildings, but no structures remain on-site.

Historically, since the late 1920s, the site supported the operations of several cut flower nurseries, and farmland to grow row crops. Fallow agricultural land is found on-site, consisting primarily of non-native grasses, herbaceous plants, and forbs. Additionally, the site contains several trees, including coast redwood (*Sequoia sempervirens*), Atlas cedar (*Cedrus atlantica*), deodar cedar (*Cedrus deodara*), juniper (*Juniperus*), monkey puzzle (*Araucaria araucana*), coast live oak (*Quercus agrifolia*) and southern magnolia (*Magnolia grandiflora*). These trees qualify for protection and would require a removal permit. Several ornamental trees are also present on-site, which do not require a permit for removal.[1]

The proposed project includes demolition of all existing foundations associated with former structures, as well as asphalt, concrete, fence poles, and retaining walls, and the following:

- Construction of three concrete tilt-up warehouse buildings totaling 555,537 square feet.
- Installation of approximately 129,719 square feet of landscaped areas (including bioretention areas).
- Construction of approximately 438 auto parking spaces and 266 trailer parking spaces.
- Construction of off-site improvements such as roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, bioretention swales, utility connections, and traffic calming improvements.
- Removal of seven code protected trees.

[1] Dmitri Tioupine 2018. Tree Care and Preservation. Pre-Development Tree Assessment Report. August.

- Annexation into the West County Wastewater District would also occur as part of the proposed project. Annexation is anticipated to occur immediately upon project approval and CEQA certification.

Although the future occupants are unknown at this time, it is assumed that the overall property will be occupied by warehousing, research and development, or similar light-industrial uses consistent with the P-1 Zoning District. Primary access to the project site would be available via three driveways along Brookside Drive and three driveways along Fred Jackson Way.

1.2 - Environmental Review Process

An EIR is an informational document used by a lead agency (in this case, the County) when considering approval of a proposed project. The purpose of an EIR is to provide public agencies and members of the public with detailed information regarding the environmental effects associated with implementing a project. An EIR should analyze the environmental consequences of a project, identify ways to reduce or avoid the proposed project's potential environmental effects, and identify alternatives to the proposed project that can avoid or reduce impacts. Pursuant to CEQA, State and local government agencies must consider the environmental consequences of projects over which they have discretionary authority. This Draft EIR provides information to be used in the planning and decision-making process. It is not the purpose of an EIR to recommend approval or denial of a project.

Before approval of the proposed project, the County, as lead agency and the decision-making entity, is required to certify that this EIR has been completed in compliance with CEQA, that the information in the EIR has been considered, and that the EIR reflects the independent judgment of the County. Pursuant to CEQA, decision makers must balance the benefits of a project against its unavoidable environmental consequences. If environmental impacts are identified as significant and unavoidable, the County may still approve the proposed project if it finds that social, economic, or other benefits outweigh the unavoidable impacts. The County would then be required to state in writing the specific reasons for approving the proposed project, based on information in the EIR and other information sources in the administrative record. This reasoning is called a "statement of overriding considerations" (PRC § 21081; CEQA Guidelines § 15093).

In addition, the County as lead agency must adopt a Mitigation Monitoring and Reporting Program (MMRP) describing the measures that were made a condition of project approval to avoid or mitigate significant effects on the environment (PRC § 21081.6; CEQA Guidelines § 15097). The MMRP is adopted at the time of project approval and is designed to ensure compliance with the project description and EIR mitigation measures during and after project implementation. If the County decides to approve the proposed project, it would be responsible for verifying that the MMRP for this proposed project is implemented. The EIR will be used primarily by the County during approval of future discretionary actions and permits.

This Draft EIR provides a project-level analysis of the environmental effects of the proposed project. The environmental impacts of the proposed project are analyzed in this Draft EIR to the degree of specificity appropriate, in accordance with CEQA Guidelines Section 15146. This Draft EIR addresses

the potentially significant adverse environmental impacts that may be associated with the planning, construction, or operation of the project. It also identifies appropriate and feasible mitigation measures and alternatives that may be adopted to significantly reduce or avoid these impacts.

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

- Table of Contents
- Introduction
- Executive Summary
- Project Description
- Environmental Setting
- Significant Environmental Impacts
- 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

Contra Costa County 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 County. This Draft EIR reflects the independent judgment and analysis of the County as required by CEQA. Lists of organizations and persons consulted and the report preparation personnel is provided in Chapter 7 of this Draft EIR.

1.3 - Purpose and Legal Authority

1.3.1 - Notice of Preparation and Public Scoping Process

In accordance with Sections 15063 and 15082 of the CEQA Guidelines, the County, as lead agency, sent the Notice of Preparation (NOP) to responsible and trustee agencies, and interested entities and individuals on November 1, 2019, thus beginning the formal CEQA scoping process. The purpose of the scoping process is to allow the public and government agencies to comment on the issues and provide input on the scope of the EIR. The scoping period began on November 1, 2019, and ended on December 2, 2019, representing the statutory 30-day public review period. Eleven comment letters were received in response to the NOP. The NOP and comment letters are contained in Appendix A. Comments are summarized in Table 1-1, with cross-references to applicable Draft EIR sections where comments are addressed.

Pursuant to Section 15083 of the CEQA Guidelines, the County held a public scoping meeting on December 16, 2019, starting at 3:30 p.m. at Contra Costa County Department of Conservation and Development, 30 Muir Road, Martinez, California 94553. Attendees were given an opportunity to provide comments and express concerns about the potential effects of the project. One individual representing Healthy Richmond provided verbal comments on the content of the Draft EIR at the scoping meeting. The individual read the NOP comment letter written by Healthy Richmond Staff and the North Richmond Resident Leadership Team.

Table 1-1: Summary of EIR Scoping Comments

Agency/Organization	Author	Date	Comment Summary	Coverage in the Draft EIR
State Agencies				
Department of Justice	Xavier Becerra, Attorney General	01/30/2020	• Notes the project site is located in a community that is already exposed to significant air pollution • Requests that the EIR fully explain air quality impacts of the project in relation to the existing conditions • Requests that the County consider significant mitigation measures to reduce impacts to sensitive receptors	• Section 3.2, Air Quality
Native American Heritage Commission	Nancy Gonzalez-Lopez, Staff Services Analyst	11/13/2019	• Notes tribal consultation requirements according to CEQA and State and federal laws • Recommends consultation with tribes affiliated with project area as early as possible • Summarizes Assembly Bill (AB) 52, Senate Bill 18, and recommendations for cultural resources assessments • Advises legal counsel consultation for compliance	• Section 3.4, Cultural Resources and Tribal Cultural Resources
Local Agencies				
Contra Costa County, Public Works Department	Larry Gossett, Consulting Engineer, Engineering Services Division	03/07/2018	• Recommends off-site truck traffic calming improvements and driveway design/ placement • Notes overhead utilities must be undergrounded • States adequacy of main drainage lines must be verified, and storm drains are required in conjunction with project	• Section 3.9, Hydrology and Water Quality • Section 3.13, Transportation • Section 3.14, Utilities and Service Systems

Agency/Organization	Author	Date	Comment Summary	Coverage in the Draft EIR
			• States Preliminary Hydrology and Hydraulics Report did not address adequacy of downstream facilities • States inconsistencies in the Preliminary Stormwater Control Plan • Notes County trash capture device requirements for catch basins • States applicant is required to annex into Community Facilities District 2010-1 for street lighting • States applicant must comply with Bridge/ Thoroughfare Fee Ordinance for area • States applicant is required to comply with drainage fee requirements	
Contra Costa County, Public Works Department	Jason Yee, Transportation Engineer	03/29/2018	• States applicant should coordinate with County, so site plan allows access to Verde Elementary from DaVilla Road • Advises applicant of traffic mitigation fee programs in area • Requests clarifications/ additions/corrections in Traffic Impact Analysis	• Section 3.13, Transportation
Contra Costa County, Department of Conservation and Development	John Cunningham, Principal Planner, Transportation Planning Section	05/08/2018	• States applicant should provide more substantial measures to compel trucks accessing the project site to use Richmond Parkway, Parr Boulevard, Fred Jackson Way • States traffic consultant should confer with Contra Costa Transportation Authority (CCTA) to characterize project development regarding General Plan consistency • States that traffic study should reference latest CCTA Bicycle Pedestrian Plan to identify existing and planned facilities	• Section 3.13, Transportation

Agency/Organization	Author	Date	Comment Summary	Coverage in the Draft EIR
			• States that where project volumes worsen existing violations, but impact is determined less than significant, traffic study should identify what threshold is used	
Contra Costa Local Agency Formation Commission	Lou Ann Texeira, Executive Officer	11/14/2019	• Notes any EIR deficiencies may require additional CEQA compliance/review • Details entitlement language that should be part of EIR • Details wastewater service information that should be part of EIR • States project parcel annexation into West County Wastewater District should include roadways and right-of-way	• Section 3.14, Utilities and Service Systems
East Bay Municipal Utility District (EBMUD)	David Rehnstrom, Water Distribution Planning Manager	11/20/2019	• Notes project sponsor should request water service estimate from EBMUD and incorporate in development schedule • Notes an EBMUD right-of-way within project site, and that construction in any right-of-way is subject to EBMUD terms and conditions at project sponsor's expense • Requests City include condition of approval for Assembly Bill (AB) 325 compliance, and that EBMUD cannot provide water service unless all water-efficiency measures are installed	• Section 3.9, Hydrology and Water Quality • Section 3.14, Utilities and Service Systems
Contra Costa County Flood Control and Water Conservation District	Lori Leontini, Senior Engineering Technician	11/22/2019	• Asks for confirmation that previous Flood Control District comments from April 2018 are incorporated	• Section 3.9, Hydrology and Water Quality
Contra Costa County Flood Control and Water Conservation District	Caroline Tom	4/4/2018	• Asks that the applicant construct storm drainage lined A and B along the frontage with Fred Jackson Way • Requests the applicant submit preliminary hydraulic calculations to the County	• Section 3.9, Hydrology and Water Quality

Agency/Organization	Author	Date	Comment Summary	Coverage in the Draft EIR
			• Requests discussion of frontage curb cuts and improvements, and statement that DaVilla Road is not public • Requests discussion of detention basin depicted in 10/17/2017 site plans • Requests statement that any encroachment on DaVilla Road requires a permit • Requests mitigation according to Flood Control Ordinance 89-24 for drainage fees	
Contra Costa County Flood Control and Water Conservation District	Lori Leontini, Senior Engineering Technician	11/26/2019	• Requests that the Draft EIR state that project is within Drainage Area 19A • States drainage line construction should be verified/made a condition of approval • Requests further language and details of drainage lines • Requests statement that applicant shall pay drainage area fees • Requests statement that applicant shall obtain flood control permit • Requests statement that applicant is required to submit hydrology and hydraulic calculations to County • Requests discussion of frontage curb cuts and improvements, and statement that DaVilla Road is not public • Requests discussion of detention basin depicted in 10/17/2017 site plans • Requests statement that any encroachment on DaVilla Road requires a permit • Requests mitigation according to Flood Control Ordinance 89-24 for drainage fees • Requests identification and discussion of existing downstream water resources and drainage facilities adjacent to the project site	• Section 3.9, Hydrology and Water Quality

Agency/Organization	Author	Date	Comment Summary	Coverage in the Draft EIR
			• Requests runoff quantification and discussion of downstream capacity • States that improvements to natural watercourses should be discussed if proposed • Requests statement that there is no drainage maintenance funding in area and should address a funding source • Recommends the Draft EIR request appropriate regulatory agencies to explore permits, special conditions, and mitigation for development	
Contra Costa County, Department of Conservation and Development	Colin Piethe, Planner, Transportation Planning Section	12/02/2019	• Discusses trip generation and transportation demand management • Discusses preferred truck traffic routes and public health concerns of North Richmond community • Discusses parking and encourages applicant to reduce parking spaces in compliance with County Code • Recommends applicant conduct informational, Vehicle Miles Traveled (VMT) analysis • Requests applicant provide more information regarding off-site roadway improvements and Complete Streets • Requests applicant clarify location of existing trees • States language on preferred CEQA threshold standard	• Section 3.13, Transportation
Bay Area Air Quality Management District (BAAQMD)	Greg Nudd, Deputy Air Pollution Control Officer	12/02/2019	• Notes the Richmond-San Pablo community is a priority community, and increased emissions in area would be concerning	• Section 3.2, Air Quality • Section 3.7, Greenhouse Gas Emissions

Agency/Organization	Author	Date	Comment Summary	Coverage in the Draft EIR
			• Recommends using very conservative significance threshold for additional air pollution • States greenhouse gas (GHG) impact analysis should include consistency evaluation with most recent AB 32 Scoping Plan by the California Air Resources Board (ARB) • States EIR should evaluate health risk to sensitive populations near project area as result of project • States EIR should evaluate all feasible measures on- and off-site to minimize air quality and GHG impacts • States EIR should evaluate project consistency with BAAQMD's 2017 Clean Air Plan • Notes project may require a permit from the BAAQMD	
Organizations				
Contra Costa Mosquito & Vector Control District	Jeremy Shannon, Vector Control Planner	11/19/2019	• Notes California Health and Safety Code Sections 2060-2067 on property owner's responsibility to address potential vectors.	• Section 3.9, Hydrology and Water Quality
Wilton Rancheria	Mariah Mayberry	11/19/2019	• Requests tribal monitoring during construction • Includes language for mitigation measures	• Section 3.4, Cultural Resources and Tribal Cultural Resources
Laborers International Union of North America, Local Union 324	Komalpreet Toor, Legal Assistant, Lozeau Drury LLP	12/04/2019	• Requests notice of all actions/hearings related to County activities pursuant to Public Resources Code Sections 21092.2 and 21167(f) and Government Code Section 65092	–
Healthy Richmond and North Richmond Resident Leadership	N/A	12/16/2019	• Expresses concern regarding trucks routing through neighborhood	• Sections 3.2, Air Quality

Agency/Organization	Author	Date	Comment Summary	Coverage in the Draft EIR
			• Describes traffic conditions/history of North Richmond and expresses concern regarding air pollution and emissions • States that emergency vehicles cannot access parts of North Richmond • Asserts that community does not want to see a large warehouse bordering one of North Richmond's only parks and its only school, and will not foster adequate quality of life • Expresses concern regarding operation of multiple warehouses in close proximity to a school and impacts on youth health • Expresses concern regarding transportation impacts from multiple construction projects occurring at once in same area	• Section 3.8, Hazards and Hazardous Materials • Section 3.13, Transportation
Source: Compiled by FirstCarbon Solutions (FCS) 2021				

THIS PAGE INTENTIONALLY LEFT BLANK

1.3.2 - Public Review

Upon completion of the public Draft EIR, the County 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, the 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 Contra Costa County website (https://www.contracosta.ca.gov/7605/Major-Planning-Applications-Under-Consid). Hard copies of the Draft EIR can be viewed at the following County facilities (please check with the facilities for hours of operation):

Contra Costa County
Department of Conservation and Development
30 Muir Road
Martinez, CA 94553

Pleasant Hill Library
Contra Costa County Main Branch
100 Gregory Lane
Pleasant Hill, CA 94523

Office of District 1
County Supervisor, John Gioia
11780 San Pablo Avenue, Suite D
El Cerrito, CA 94530

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

Francisco Avila, Principal Planner
Contra Costa County
Department of Conservation and Development
Community Development Division
30 Muir Road
Martinez, CA 94553
Tel: 925.655.2866
Fax: 925.674.2758
Email: Francisco.Avila@dcd.cccounty.us

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 Contra Costa County Planning Commission on the project, at which the certification of the Final EIR will also 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.

1.3.3 - 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
- Air Quality
- Biological Resources
- Cultural-Tribal Cultural Resources
- Geology and Soils
- Hydrology and Water Quality
- Noise
- Transportation

1.4 - EIR Document Organization

This Draft EIR is organized into the following main sections:

- **Chapter ES: 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 MMRP, in addition to a table that summarizes the impacts, mitigation measures, and level of significance after mitigation, are also included in this Chapter.
- **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 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 Chapter 3 are as follows:
  - **Section 3.1—Aesthetics:** Addresses the potential visual impacts of development intensification and the overall increase in illumination produced by the proposed 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 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-Tribal Cultural Resources:** Addresses potential impacts on historical resources, archaeological resources, paleontological resources, tribal cultural resources, and burial sites.
  - **Section 3.5—Energy:** Addresses potential project impacts related to energy usage.
  - **Section 3.6—Geology and Soils:** 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 3.7—Greenhouse Gas Emissions:** Addresses potential project emissions of greenhouse gases.
  - **Section 3.8—Hazards and Hazardous Materials:** Addresses potential for 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 3.9—Hydrology and Water Quality:** Addresses potential impacts of the project on local hydrological conditions, including drainage areas, and changes in the flow rates.
- **Section 3.10—Land Use and Planning:** Addresses potential land-use impacts associated with division of an established community and consistency with the Contra Costa County General Plan and Contra Costa County Ordinance Code.
- **Section 3.11—Noise:** Addresses 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 3.12—Public Services:** Addresses potential impacts upon public services, including fire protection, law enforcement, schools, parks, and recreational facilities.
- **Section 3.13—Transportation:** Addresses potential impacts related to the local and regional roadway system and public transportation, bicycle, and pedestrian access.
- **Section 3.14—Utilities and Services Systems:** Addresses potential impacts related to service providers, including fire protection, law enforcement, water supply, wastewater, solid waste, and energy providers.
- **Section 3.15—Wildfire:** Addresses potential impacts related to wildfire including lands within State Responsibility Areas and lands classified as very high fire hazard severity zones.

- **Chapter 4: Effects Found not to be Significant.** This Chapter contains analysis of the topical sections not addressed in Chapter 3.
- **Chapter 5: Alternatives to the Proposed Project.** This Chapter compares the impacts of the project with three land-use project alternatives: the No Project/No Development Alternative, the Heavy Industrial Alternative, and the Single Warehouse 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 Chapter provides a summary of significant environmental impacts, including unavoidable and growth-inducing impacts as well as significant irreversible environmental changes.
- **Chapter 7: Persons and Organizations Consulted/List of Preparers.** This Chapter contains a full list of persons and organizations that were consulted during the preparation of the EIR. This Chapter also contains a full list of the authors who assisted in the preparation of the EIR, by name and affiliation.
- **Appendices.** The Draft EIR appendices include notices and other procedural documents pertinent to the Draft EIR, as well as supporting technical materials. The following supporting materials and technical studies and analyses were prepared for the project in support of preparation of this Draft EIR:
  - NOP and EIR Public Scoping Comments and transcript (Appendix A)
  - Air Quality, Greenhouse Gas Emissions, and Energy Supporting Information, prepared and compiled by FirstCarbon Solutions (Appendix B)

- Biological Resources Supporting Information, prepared and compiled by FirstCarbon Solutions (Appendix C)
- Cultural Resources and Tribal Cultural Resources Supporting Information, prepared and compiled by FirstCarbon Solutions (Appendix D)
- Geotechnical Investigation, prepared by Cornerstone Earth Group (Appendix E)
- Phase I Environmental Site Assessments, prepared by Cornerstone Earth Group (Appendix F)
- Preliminary Hydrology and Hydraulics Report and Preliminary Stormwater Control Plan, prepared by Kier and Wright Civil Engineers and Surveyors (Appendix G)
- Noise Modeling Outputs, prepared by FirstCarbon Solutions (Appendix H)
- Transportation Impact Assessment, prepared by Fehr & Peers (Appendix I)
- Single Warehouse Alternative Supporting Information (Appendix J)
- Notice of Completion (Appendix K)

1.5 - 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:

- Contra Costa County General Plan
- Contra Costa County Ordinance Code
- Contra Costa County Climate Action Plan

In accordance with CEQA Guidelines Section 15150(b), the Contra Costa County General Plan, Contra Costa County Ordinance Code, and the referenced documents and other sources used in the preparation of the Draft EIR are available for review at the Contra Costa County Department of Conservation and Development at the address shown in Section 1.3.2, Public Review.

CHAPTER 2: PROJECT DESCRIPTION

CenterPoint Properties (applicant) proposes to build three warehouse buildings totaling 555,537 square feet on a 31.48-acre site in unincorporated Contra Costa County in the North Richmond area. The purpose of this Draft Environmental Impact Report (Draft EIR) is to identify potential environmental impacts of the proposed CenterPoint Properties Project (referred to herein as the proposed project) within Contra Costa County, California. This Chapter provides a detailed overview of the project site location and setting, project objectives, project details, characteristics, and construction phasing. It also describes the intended uses of the Draft EIR by agencies with permitting and approval authority over the proposed project, as well as required permits and approvals.

2.1 - Project Location and Setting

2.1.1 - Location

Regional Location

Contra Costa County (County) is located in the eastern San Francisco Bay Area of California. The County is bordered to the north by Solano County, to the east by San Joaquin County, to the south by Alameda County, and to the west by San Pablo Bay and Marin County (Exhibit 2-1). The County covers 716 square miles and has historically been a suburban community serving major employment centers to the west and south. Major roadway networks, including State Route (SR) 4, SR-24, SR-242, Interstate 680 (I-680), and Interstate 80 (I-80) provide regional access to surrounding areas. I-680 is a north/south, 12-lane highway that is the main point of access connecting the County to eastern Bay Area cities. I-80 is a north/south highway that provides access to the western portions of the County and connections to the rest of the San Francisco Bay Area. The Richmond-San Rafael Bridge (Interstate 580 [I-580]), which accommodates two westbound lanes on the upper level and two to three eastbound lanes on the lower level, provides a connection between Contra Costa and Alameda Counties and Marin County.

Local Setting

The project site is located at 506 Brookside Drive on the southeast corner of Brookside Drive and Fred Jackson Way (Exhibit 2-2). The site is within unincorporated Contra Costa County. The project site is surrounded on all sides by land within unincorporated Contra Costa County, with the exception of the North Richmond Baseball Field parcel located south of the project site, which is within the City of Richmond. More broadly, east of the project site lies the City of San Pablo and to the north, west, and south is the City of Richmond. Specifically, the project site is located within the *Richmond, California* United States Geological Survey (USGS) 7.5-minute Topographic Quadrangle Map (Latitude 37°57’ 49.88” North; Longitude 122°21’55.32” West). The project site is within the City of Richmond Sphere of Influence (SOI).

The project site is bound to the west by Fred Jackson Way, the West County Recycling Center and Household Hazardous Waste Facility, and commercial nurseries; to the north by Brookside Drive, commercial greenhouses, a nursery, Urban Tilth’s North Richmond Farm, and a solar panel

manufacturer; to the east by S & S RV Repairs and Lantier Tent Structures; and to the south by the Quarry House (an unoccupied single-family residence proposed to be converted to an office), DaVilla Road (a minor side street), North Richmond Baseball Field, and Verde Elementary School (Exhibit 2-3). The residential type structures north of the project site across Brookside Drive are unoccupied and are proposed to be converted to warehouse land uses. Single-family residences are located approximately 600 feet south of the project site, across Wildcat Creek. The nearest surface water features are Wildcat Creek, located approximately 400 feet south of the project site, and San Pablo Creek, located approximately 750 feet north of the project site.The Wildcat Creek Trail, a Class I bikeway, is located along the north side of Wildcat Creek, extending from Richmond Parkway to Giaramita Street, and also extends along Richmond Parkway between Goodrick Avenue and West Ohio Avenue (Exhibit 2-2). Wildcat Creek Marsh is located approximately 0.7 mile west of the project site and San Pablo Creek Marsh is located approximately 0.5 mile northwest of the project site. San Pablo Bay is approximately 0.75 mile northwest of the project site (Exhibit 2-2). There are several Alameda-Contra Costa Transit Authority District (AC Transit) stops located south of the site (Exhibit 2-3). The nearest Bay Area Rapid Transit (BART) station is located approximately 2.8 miles southeast of the site in Richmond. I-80 is located approximately 1.75 miles east of the project site. I-580 is located approximately 2.5 miles south of the project site and the Richmond-San Rafael Bridge is located approximately 3 miles southwest.

2.1.2 - Existing Project Site Characteristics

The 31.48-acre project site consists of 19 parcels, as shown in Exhibit 2-3 and listed in Table 2-1. The applicant has submitted a minor subdivision application (tentative map) to consolidate the 19 parcels within the project site into three parcels.

Table 2-1: Project Site Parcels

Assessor's Parcel Numbers	Addresses
408-201-033	Brookside Drive—Richmond
408-204-013	Fred Jackson Way—Richmond
408-204-002	Brookside Drive—Richmond
408-204-003	Brookside Drive—Richmond
408-204-004	Brookside Drive—Richmond
408-204-005	Brookside Drive—Richmond
408-204-010	Brookside Drive—Richmond
408-204-011	Brookside Drive—Richmond
408-204-012	Brookside Drive—Richmond
408-210-001	Brookside Drive—Richmond
408-210-002	Brookside Drive—Richmond
408-210-003	Brookside Drive—Richmond
408-210-004	Brookside Drive—Richmond

Assessor's Parcel Numbers	Addresses
408-210-007	Niemeyer Avenue—Richmond
408-210-008	Niemeyer Avenue—Richmond
408-210-009	Niemeyer Avenue—Richmond
408-210-010	Brookside Drive—Richmond
408-210-011	Brookside Drive—Richmond
409-300-037	Fred Jackson Way—Richmond

The project site is relatively flat, with elevations ranging between approximately 12 to 20 feet above mean sea level, with a gentle downward slope to the northwest, toward San Pablo Bay.[1] The project site contains the foundations of several former residential structures, barns, and greenhouse buildings, but no structures remain on-site.

Historically, since the late 1920s, the site supported the operations of several cut flower nurseries, and farmland to grow row crops. Fallow agricultural land is found on-site, consisting primarily of non-native grasses, herbaceous plants, and forbs. Additionally, the site contains several trees, including coast redwood (*Sequoia sempervirens*), Atlas cedar (*Cedrus atlantica*), deodar cedar (*Cedrus deodara*), juniper (*Juniperus*), monkey puzzle (*Araucaria araucana*), coast live oak (*Quercus agrifolia*) and southern magnolia (*Magnolia grandiflora*). These trees qualify for protection and would require a removal permit. Several ornamental trees are also present on-site, which would not require a permit for removal.[2]

2.1.3 - Existing Land Use Designation and Zoning

Land Use Designation

The Contra Costa County General Plan (General Plan)[3] designates the site as Light Industry (LI) and Heavy Industry (HI) (Exhibit 2-4). Pursuant to the General Plan Land Use Element, the LI designation allows for a floor area ratio (FAR) between 0.25 and 0.67 and maximum site coverage is allowed up to 50 percent with an average of 60 employees per gross acre. Primary land uses associated with the LI designation include research, engineering, product development and testing, sales development, light manufacturing, warehousing, distribution centers, and commercial nurseries. Support retail/service uses may also be located within this designation.

The HI designation allows a FAR between 0.1 and 0.4, and maximum site coverage is allowed up to 30 percent with an average of 45 employees per gross acre. Primary land uses associated with the HI designation include contractors' storage yards, warehouses, machine shops, commercial nurseries, metalworking, heavy equipment operation, and chemical or petroleum processing and refining. Support retail/service uses may also be located within this designation.

[1] Cornerstone Earth Group. 2018. Phase I Environmental Site Assessment Update. August.
[2] Dmitri Tioupine 2018. Tree Care and Preservation. Pre-Development Tree Assessment Report. August.
[3] Contra Costa General Plan. 2005. Chapter 3: Land Use Element (reprint 2010), page 3-84. Website: http://www.co.contra-costa.ca.us/DocumentCenter/View/30913/Ch3-Land-Use-Element?bidId=. Accessed August 25, 2020.

Zoning

The site is located within the North Richmond P-1 Zoning District (P-1) (Exhibit 2-5) on the County's Zoning Map. The P-1 Zoning District is intended to support large-scale integrated development in compliance with the General Plan designations. The Contra Costa County Ordinance Code (Ordinance Code), Title 8: Zoning,[4] allows for the following uses in the P-1 Zoning District:

- Any land uses permitted by an approved final development plan that are in harmony with each other, serve to fulfill the function of the planned unit development, and are consistent with the General Plan.
- A detached single-family dwelling on each legally established lot and the accessory structures and uses normally auxiliary to it.
- Single-room occupancy facilities that meet the requirements of Chapter 82-48.
- In a P-1 Zoning District for which residential uses are approved, the following uses are allowed:
  - Accessory dwelling units complying with the provisions of Chapter 82-24.
  - Supportive housing, operated by a person with all required State and local agency approvals and licenses, where not more than six persons reside.
  - Transitional housing, operated by a person with all required State and local agency approvals and licenses, where not more than six persons reside.
- Commercial cannabis activities that meet the requirements of Chapter 88-28.

2.2 - Project Objectives

The objectives of the proposed project are to:

- Develop industrial uses in North Richmond in accordance with the General Plan.
- Implement policies of importance to the County, as reflected in the General Plan, including the County's December 11, 2018, adopted General Plan Amendment (GPA) GP18-0004 to the Conservation Element Section 8.14, Air Resources.
- Reduce greenhouse gas emissions from transportation sources through provision of bicycle and pedestrian facilities.
- Develop an industrial business park that is economically competitive with other similar centers in the land-constrained East Bay market, which will assist the County in competing economically on a domestic and international scale through the efficient and cost-effective movement of goods.

[4] Contra Costa County Ordinance Code, Title 8: Zoning, Ch. 84-66. 2020. Website: https://library.municode.com/ca/contra_costa_county/codes/ordinance_code?nodeId=TIT8ZO_DIV84LAUSDI_CH84-66PLUNDI. Accessed August 25, 2020.

- Develop vacant or underutilized property in the County with an attractive, state-of-the-art industrial business park that meets current industry standards for operational design criteria and that complements the surrounding existing and planned uses.
- Develop warehouse/distribution buildings that meet industry standards for modern, operational design criteria and provide opportunities for warehouse/distribution building users to locate in North Richmond.
- Maximize the utility of sites in close proximity to already established industrial areas, designated truck route and freeways thereby growing the economy and providing a more equal jobs-housing balance while avoiding or shortening truck-trip lengths on other roadways.
- Develop an underutilized or blighted property that has access to available infrastructure, including roads and utilities to be used as part of the supply chain and goods movement network.
- Redevelop an underutilized or blighted property within the County with productive uses that would generate tax revenue and maximize buildout potential for employment-generating uses.
- Improve facilities to connect pedestrians and bicyclists with transit stops, parks, other community gathering places, and adjacent neighborhoods.
- Result in eventual annexation of the project site to the West County Wastewater District.

2.3 - Project Components

2.3.1 - Land Uses

The proposed project includes demolition of all existing foundations associated with former structures, as well as asphalt, concrete, fence poles, and retaining walls, and the following:

- Construction of three concrete tilt-up warehouse buildings totaling 555,537 square feet.
- Installation of approximately 129,719 square feet of landscaped areas (including bioretention areas).
- Construction of approximately 438 auto parking spaces and 266 trailer parking spaces.
- Construction of off-site improvements such as roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, bioretention swales, utility connections, and traffic calming improvements.
- Removal of seven code protected trees.
- Annexation into the West County Wastewater District would also occur as part of the proposed project. Annexation is anticipated to occur immediately upon project approval and California Environmental Quality Act (CEQA) certification.

The site plan for the proposed project is shown in Exhibit 2-6.

Industrial Uses

The proposed project would consolidate the existing 19 parcels into three new parcels to accommodate the development of three warehouses of concrete tilt-up construction totaling 555,537 square feet. In total, Buildings 1, 2 and 3 would cover approximately 12.75 acres of the 31.48-acre project site, or 41 percent. Although the future occupants are unknown at this time, it is assumed that the overall property will be occupied by warehousing, research and development, or similar light industrial uses consistent with the P-1 Zoning District. Table 2-2 summarizes the proposed project building components.

Table 2-2: Project Building Components

Building	General Plan/ Maximum Lot Coverage	Square Feet		Proposed Parcel Size (acres)	Lot Coverage (percentage)
1	Heavy Industry/ 30 percent	Warehouse	222,905	12.54	43 percent
		Office	11,732		
		Total	**234,637**		
2	Heavy Industry/ 30 percent	Warehouse	198,482	12.03	40 percent
		Office	10,446		
		Total	**208,928**	–	–
3	Light Industry/ 50 percent	Warehouse	106,373	5.43	47 percent
		Office	5,599		
		Total	**111,972**	–	–
		Grand Total	**555,537**		

Notes:
* Pursuant to the North Richmond P-1 Development Standards, approved February 11, 2003, with additional mitigation for cumulative traffic impacts, the floor area ratio (FAR) may be increased to 0.67.
* Pursuant to the North Richmond P-1 Development Standards, approved February 11, 2003, 50 percent lot coverage is allowed for Light Industrial uses within Heavy Industrial land use designation.

Source: Compiled by FirstCarbon Solutions (FCS) 2021, from the 2005 – 2020 Contra Costa County General Plan.

Building 1 would be located at the northwest portion of the property and would consist of 222,905 square feet of warehouse space and two potential offices totaling 11,732 square feet, for a total of approximately 234,637 square feet.

Building 2 would be located on the eastern portion of the site and would consist of 198,482 square feet of warehouse space and two potential offices totaling 10,446 square feet, for a total of approximately 208,928 square feet.

Building 3 would be located at the southern portion of the site and would consist of 106,373 square feet of warehouse space and one potential office totaling 5,599 square feet, for a total of approximately 111,972 square feet.

The three buildings could employ up to 573 people. The buildings would be built to Leadership in Energy and Environmental Design (LEED™) standards and would include photovoltaic panels on the roof.

Parking Uses

The proposed project would provide parking throughout the site for standard vehicles, trailers and bicycles for each building. A total of 438 auto parking spaces and 266 trailer parking spaces would be provided. Table 2-3 summarizes the type and number of on-site parking spaces that would be provided for each building.

Table 2-3: Project Parking Per Building by Type

Building	Standard Parking	Accessible Parking*	Accessible Van Parking	EV Parking	EV Accessible Parking	EV Van Parking	Clean Air Vehicle	Total Auto Parking	Trailer Parking	Bicycle Parking
1	120	6	1	5	1	1	11	145	90	10 (two 5-bike capacity racks inside of building)
2	140	6	1	8	1	1	16	173	149	10 (two 5-bike capacity racks inside of building)
3	99	2	1	5	1	1	11	120	27	10 (two 5-bike capacity racks inside of building)
Total Project Parking Provided								**438**	**266**	**30**

Note:
EV = Electric Vehicle
* Americans with Disabilities Act (ADA) compliant.

2.3.2 - Land Use Designation and Zoning

As described previously and shown on Exhibit 2-4, the project site is zoned as P-1, and is designated as LI and HI in the General Plan, both of which allow warehousing (Exhibit 2-5). The proposed project would be consistent with the existing General Plan land use and Ordinance Code designations.

As stated in Section 84-66.204, the intent of the P-1 Zoning District is to allow "diversification in the relationship of various uses, buildings, structures, lot sizes and open space while insuring (*sic*) substantial compliance with the General Plan and the intent of the Ordinance Code in requiring adequate standards necessary to satisfy the requirements of the public health, safety and general welfare. These standards shall be observed without unduly inhibiting the advantages of large-scale or special area planning."[5]

[5] Contra Costa County. Contra Costa County Ordinance Code, Section 84-66.204 - Intent and purpose. Website:

Table 2-4 identifies the development standards for land uses, structures, and site development within the P-1 Zoning District for Heavy Industrial and Light Industrial.

Table 2-4: P-1 North Richmond Zoning District Development Standards for Heavy Industrial and Light Industrial

Development Feature	Heavy Industrial Requirement	Light Industrial Requirement
Minimum Lot Area	10 acres (per Section 84-66.602)	7,500 square feet
Minimum Lot Width	N/A	N/A
Maximum Building Height	40 feet	50 feet
Floor Area Ratio (FAR)	0.67	0.67
Maximum Lot Coverage	30 percent	50 percent
Parking	1 parking space/1,000 square feet (warehouse) 5 parking spaces/1,000 square feet (office)	1 parking space/1,000 square feet (warehouse) 5 parking spaces/1,000 square feet (office)
Minimum Landscaped Area	10 percent	10 percent

Notes:
* Pursuant to the North Richmond P-1 Development Standards, approved February 11, 2003, with additional mitigation for cumulative traffic impacts, the floor area ratio (FAR) may be increased to 0.67.
* Pursuant to the North Richmond P-1 Development Standards, approved February 11, 2003, 50 percent lot coverage is allowed for Light Industrial uses within Heavy Industrial land use designation.

Source: Contra Costa County North Richmond P-1 Development Standards. Approved February 11, 2003.

Section 84-66.1402 of the Contra Costa County Ordinance Code establishes the following Design Objectives for the P-1 Zoning District:

- Building bulk, height, land coverage, visual appearance from adjacent land, and design compatibility with existing adjoining development and land which will remain, shall be considered and controlled.
- A development's design should successfully integrate individual buildings and building groups with the surrounding development, other physical features in the area, and existing development which will remain.
- The design of structures should provide for harmonious composition of mass, scale, color, and textures, with special emphasis on the transition from one building type to another, termination of groups of structures, relationships to streets, exploitation of views, and integration of spaces and building forms with the topography of the site and the urban or suburban character of the area.

https://library.municode.com/ca/contra_costa_county/codes/ordinance_code?nodeId=TIT8ZO_DIV84LAUSDI_CH84-66PLUNDI. Accessed April 2, 2020.

- Provisions are to be made for an efficient, direct and convenient system of pedestrian circulation, together with landscaping and appropriate treatment of any public areas or lobbies.
- Off-street parking and loading areas should be integrated into the overall vehicular circulation system.

2.3.3 - Circulation and Access

Vehicle

Brookside Drive is a two-lane public street that runs east/west along the northern portion of the project site. Fred Jackson Way is also a two-lane public street that runs north/south along the western portion of the site. Primary access to the project site would be available via three driveways along Brookside Drive and three driveways along Fred Jackson Way. All driveways would be designed for truck access (40-50 feet wide), with the exception of the 26-foot-wide driveway along Fred Jackson Way directly west of Building 1, which would be used for standard automobile access only. Additionally, a 26-foot-wide fire lane would be included throughout the site to provide emergency access.

Off-site Improvements

The proposed project would include construction of the following off-site improvements:

- Installation of a traffic signal at the Fred Jackson Way/Brookside Drive intersection, including permitted left turns on all approaches.
- Installation of a traffic signal at the Fred Jackson Way/Pittsburgh Avenue intersection, including permitted left turns on the northbound and southbound approaches and split phases on the eastbound and westbound approaches.
- Roadway improvements along Fred Jackson Way include extension of curb bump-out at Fred Jackson Way and Pittsburg Avenue, as well as porkchop medians[6] in Fred Jackson Way near the middle driveway and in front of the southernmost driveway. These roadway improvements would prevent left-turnout movements from the project site driveways, and direct traffic north along Fred Jackson Way, toward Richmond Parkway.
- Roadway improvements along Brookside Drive via angled driveways (at all three project driveways) and porkchops in Brookside Drive at the westernmost driveways. These roadway improvements would prevent left-turnout movements from the project site driveways, and direct traffic north, toward Richmond Parkway.
- Sidewalks, curbs, gutters, and landscaping on the Brookside Drive frontage.
- New storm drain main on Brookside Drive to tie into the existing line running north to San Pablo Creek.

[6] Roadway or driveway channelization in the form of a somewhat-triangular island.

- New storm drain line from the southern portion of the project site to tie into the existing main on Fred Jackson Way running south to Wildcat Creek.
- Extension of waterlines to the project site.
- Bioretention swales totaling 3,301 square feet along the proposed project boundaries of both Fred Jackson Way and Brookside Drive.
- One of the off-site improvements required by Mitigation Measure (MM) TRANS-2b in Section 3.13, Transportation, which would deter truck traffic from cutting through the local neighborhood to the south. The list of potentially qualifying traffic calming measures include, but is not limited to, bulb outs, elevated crosswalks, speed tables, or chicanes on the main routes of Fred Jackson Way, Market Avenue, and Chesley Avenue.
- Pedestrian improvements required by MM TRANS-4a in Section 3.13, Transportation:
  - Pedestrian crossings on all four approaches of Fred Jackson Way and Brookside Drive (including ADA-compliant pedestrian landing islands); and
  - Pedestrian crossings on all four approaches of Fred Jackson Way and Pittsburg Avenue (including ADA-compliant pedestrian landing islands).

In addition, the applicant will provide a fair share contribution to the County's Road Trust Account (8192), which may be used to fund the West County Corridor Study of freight/goods movement, multimodal Richmond Parkway corridor improvements, environmental analysis, design and/or construction of the resulting capital improvement(s) resulting from the West County Corridor Study.

Transit

Bus

Major County bus transit services in North Richmond include the AC Transit, Golden Gate Transit, and Western Contra Costa Transit Authority (WestCAT). The major bus line that serves the North Richmond area near the project site is AC Transit. The nearest AC Transit lines that would provide local bus service to the project site are 71, 76 and 376, which run along Fred Jackson Way. The nearest bus stop to the project site is located at the intersection of Fred Jackson Way and Market Avenue, approximately 0.4 mile south of the project site.

Rail

BART is a regional rail transit service that operates within the County and provides connections to Alameda, San Francisco, and San Mateo Counties. There are two lines that service the City of Richmond—the Daly City/Millbrae to Richmond line and the Warm Springs to Richmond line. Richmond Station is the nearest BART and Amtrak station to the project site, located approximately 2.8 miles southeast.

Bicycle

The proposed project would include a new bicycle lane along the Brookside Drive project site frontage and would include bicycle parking within each of the three parcels. Currently, there are no existing bicycle lanes along the roadway segments that front the project site (Brookside Drive or Fred

Jackson Way). The Wildcat Creek Trail, a Class I bikeway,[7] is located along the north side of Wildcat Creek, extending from Richmond Parkway to Giaramita Street, and also extending along Richmond Parkway between Goodrick Avenue and West Ohio Avenue. Class II bike lanes are provided along Fred Jackson Way south of Wildcat Creek to Grove Avenue.

Pedestrian

There are currently no existing sidewalk facilities along the project site's frontage (i.e., the southern side of Brookside Drive and eastern side of Fred Jackson Way). The proposed project would include a sidewalk and landscaping along the project site frontage with Brookside Drive for pedestrian access.

2.3.4 - Air Quality

The proposed project will include the following:

- Construction Best Practices to reduce emissions and improve air quality, discussed in greater detail in Section 3.2, Air Quality.
- Operational Best Practices to reduce emissions and improve air quality.
  - Use of zero emission equipment and vehicles (e.g., yard hostlers, yard equipment, forklifts, yard trucks and tractors, and pallet jacks) on the project site from start of operations.
  - For vehicles, delivery vans, and trucks (Class 2 through 6) domiciled at the project site: (i) 33 percent of the fleet will be zero emission vehicles at the start of operations, (ii) 65 percent of the fleet will be zero emission vehicles by December 31, 2023, (iii) 80 percent of the fleet will be zero emission vehicles by December 31, 2025, and (iv) 100 percent of the fleet will be zero emission vehicles by December 31, 2027. This requirement would not apply to common carriers operating under their own authority that provide delivery services to or from the project site.
    - "Domiciled at the project site" shall mean the vehicle is either (i) parked or kept overnight at the project site more than 70 percent of the calendar year or (ii) dedicated to the project site (defined as more than 70 percent of the routes (during the calendar year) that start at the project site even if parked or kept elsewhere).
  - For heavy-duty trucks (Class 7 and 8) domiciled at the project site, use model year 2014 or later from start of operations, with a transition of all such heavy-duty trucks (Class 7 and 8) domiciled at the project site to be zero-emission by December 31, 2025, or when commercially available for the intended application, whichever date is later.
- Electric Vehicle (EV) charging stations.

2.3.5 - Design, Landscaping, and Lighting

Building Design and Height

Building 1, Building 2, and Building 3 would each be 1-story tall, approximately 42 feet in height, and would be comprised of tilt-up concrete material. Additional building materials would consist of

[7] A Class I bikeway provides a completely separate right-of-way and is designated for the exclusive use of bicycle and pedestrians with vehicle and pedestrian cross-flow minimized.

metal, aluminum, and glass. An 8-foot-high black tubular metal fence would be installed around the perimeter of the entire site.

Landscaping

There are several species of trees found on-site, including coast redwood, Atlas cedar, deodar cedar, juniper, monkey puzzle, coast live oak, and southern magnolia. The proposed project would remove all on-site trees, including seven trees identified as protected under the Ordinance Code.

The areas surrounding each building would include landscaping as follows: Building 1 (51,733 square feet); Building 2 (63,183 square feet); and Building 3 (14,803 square feet). Landscaping would include a mix of trees, shrubs, groundcover, and grasses. The proposed project would include bioretention treatment areas along Brookside Drive, Fred Jackson Way, and along the southern portion of the site directly south of Building 3 to capture stormwater runoff.

Lighting and Signage

A monument sign is proposed at the corner of Brookside Drive and Fred Jackson Way. Future tenants may use wall-mounted signs. Proposed lighting would include exterior lighting for the buildings and pole-mounted lighting throughout the parking areas.

2.3.6 - Infrastructure Improvements

Domestic Water

East Bay Municipal Utility District (EBMUD) would supply the project site with potable water. The proposed project would include potable water and fire water lines on the project site that would connect to existing lines within Fred Jackson Way and Brookside Drive.

Stormwater Drainage

The proposed project would connect to existing stormwater facilities located on and adjacent to the project site. Runoff from the northern portion of the site currently flows northwest, where it is collected by a series of open channel ditches and pipe culverts and flows into an existing 48-inch storm drain at the corner of Brookside Drive and Fred Jackson Way.[8] The water ultimately discharges to San Pablo Creek. Runoff from the southern portion of the site flows from east to west, where it is collected along Fred Jackson Way, and conveyed into an existing 36-inch storm drain that ultimately discharges into Wildcat Creek.[9]

The proposed project would install a new on-site storm drain system. In addition, new storm drains would be installed within Brookside Drive and Fred Jackson Way. The proposed project would install on-site bioretention facilities that would collect stormwater runoff within the project site that allow for infiltration and treatment before being discharged into the new storm drain system, and would ultimately discharge into San Pablo and Wildcat Creeks.

[8] Kier & Wright Civil Engineers & Surveyors. 2018. Preliminary Hydrology and Hydraulics Report. August.
[9] Ibid.

Sanitary Sewer

The West County Wastewater District (WCWD) serves the areas adjacent to the project site; however, the project site is not currently within the boundaries of the WCWD service area. The project proposes annexation into the WCWD boundaries, which requires approval from the Contra Costa Local Agency Formation Commission (LAFCo). Exhibit 2-7 depicts the project site in relation to the SOI of affected cities and special districts. Exhibit 2-8 illustrates the annexation area in relation to the WCWD boundaries. The proposed project would include wastewater infrastructure and connections to the existing sanitary sewer lines within Fred Jackson Way and Brookside Drive.

Solid Waste and Recycling Collection

Republic Services of West Contra Costa County provides solid waste and residential recycling services for cities and unincorporated communities in the West County area. Republic Services provides a range of services including municipal solid waste, household hazardous waste, organics, industrial recycling, and others.

Power and Telecommunications

Electricity and natural gas services for the proposed project would be provided by Pacific Gas and Electric Company (PG&E). Overhead utilities currently exist along Brookside Drive and Fred Jackson Avenue. These would be required to be undergrounded to serve the proposed project. Phone and internet services would be provided by various companies, including AT&T.

The proposed project would include the installation of solar panels on all buildings as a renewable energy source to generate as much solar power as possible with commercially available photovoltaic panels.

2.3.7 - Phasing and Construction

For the purpose of this analysis, it was assumed that construction would occur over a period of 13 months starting in November 2020 and ending in December 2021. Construction is now expected to commence in late 2021 and would still occur over a 13-month period. Construction activities would consist of the removal of building foundations, impervious surfaces, trees, and other vegetation. Following demolition activities, construction would include grading, utility installation, building construction, and paving. The demolition of the existing building foundations, impervious surfaces, and vegetation on the project site are anticipated to generate approximately 2,000 cubic yards of material, which would be removed from the project site. Approximately 131,415 cubic yards of soil would be imported.

2.4 - Required Actions and Approvals

Discretionary approvals and permits are required by the lead agency, Contra Costa County, for implementation of the proposed project and include the following:

- EIR Certification
- Final Development Plan
- Removal of on-site trees with required removal permits

- Exception to drainage requirements
- Approval of Minor Subdivision Application (Tentative Map)
- Annexation of subject parcels into Community Facilities District (CFD) 2010-1 formed for the Countywide Street Light Financing to be approved by the Contra Costa County Local Agency Formation Commission (Contra Costa County LAFCo)
- Annexation of subject parcels into WCWD boundaries to be approved by the Contra Costa County LAFCo.

In addition, the following ministerial actions would be required by Contra Costa County for implementation of the proposed project:

- Demolition permits
- Grading permits
- Building permits

Several other agencies in addition to the County will serve as Responsible and Trustee Agencies, pursuant to 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:

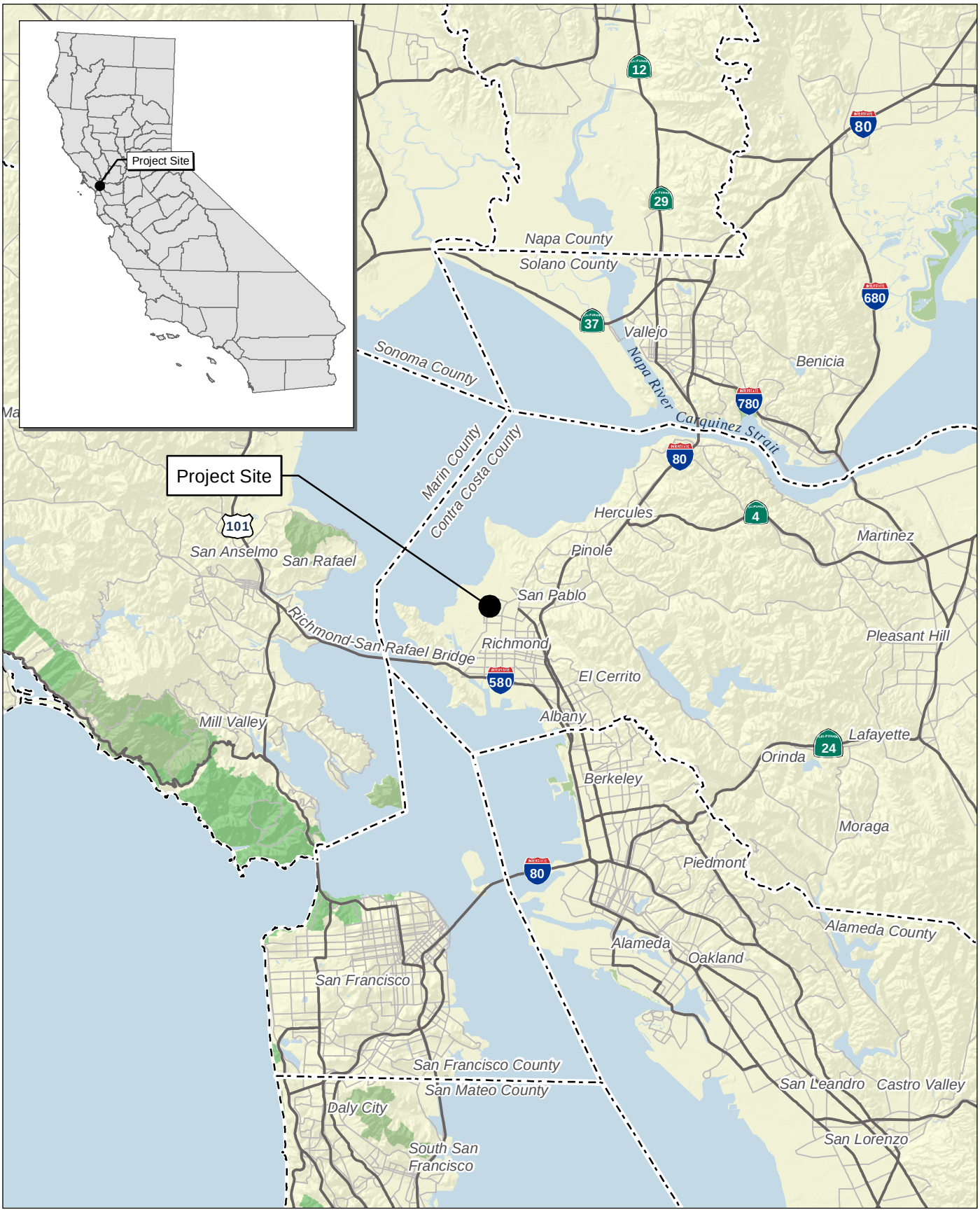
- California Department of Transportation
- California Department of Fish and Wildlife
- City of Richmond
- Contra Costa County Fire Protection District
- Contra Costa County LAFCo
- East Bay Municipal Utility District
- Bay Area Air Quality Management District
- San Francisco Bay Regional Water Quality Control Board
- Pacific Gas & Electric Company

2.5 - Intended Uses of This Draft EIR

This Draft EIR is being prepared by the County to assess the potential environmental impacts that may arise in connection with actions related to implementation of the proposed project. Pursuant to CEQA Guidelines Section 15367, Contra Costa County is the lead agency for the proposed project and has discretionary authority over the project and project approvals. The Draft EIR is intended to address proposed public infrastructure improvements and all future development that are within the parameters of the proposed project. This document will also serve as a basis for soliciting comments and input from members of the public and public agencies regarding the proposed project. The Draft EIR will be circulated for 45 days, during which period comments concerning the analysis contained in the Draft EIR should be sent to:

Francisco Avila, Principal Planner
Contra Costa County
Department of Conservation and Development
Community Development Division
30 Muir Road
Martinez, CA 94553
Tel: 925.655.2866
Fax: 925.674.2758
Email: Francisco.Avila@dcd.cccounty.us

THIS PAGE INTENTIONALLY LEFT BLANK



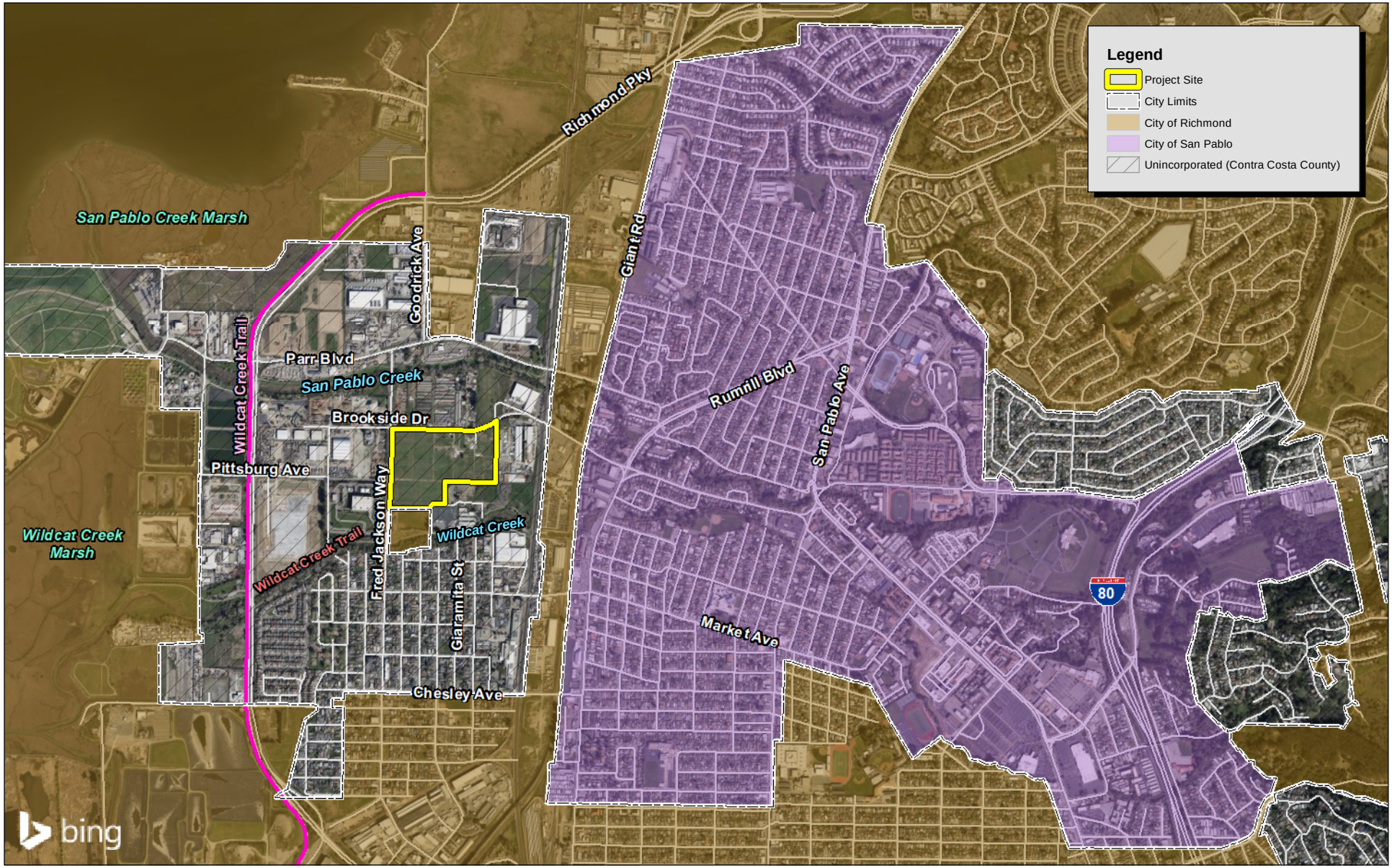
Source: Census 2000 Data, The CaSIL

FIRSTCARBON SOLUTIONS™

5 2.5 0 5 Miles

Exhibit 2-1
Regional Location Map

THIS PAGE INTENTIONALLY LEFT BLANK



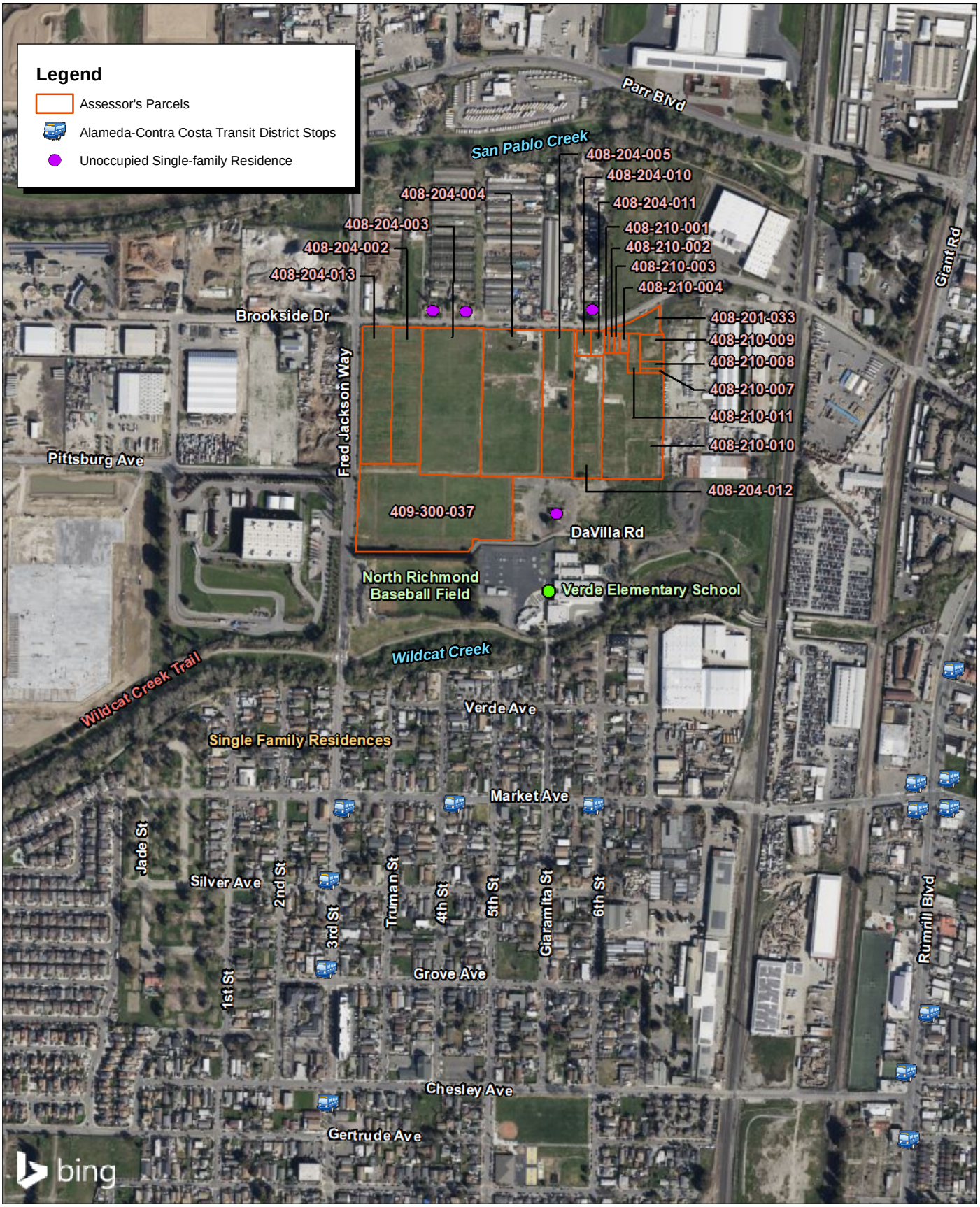
Source: bing Aerial Imagery.

FIRSTCARBON SOLUTIONS™

2,000 1,000 0 2,000 Feet

Exhibit 2-2
Local Vicinity Map

THIS PAGE INTENTIONALLY LEFT BLANK



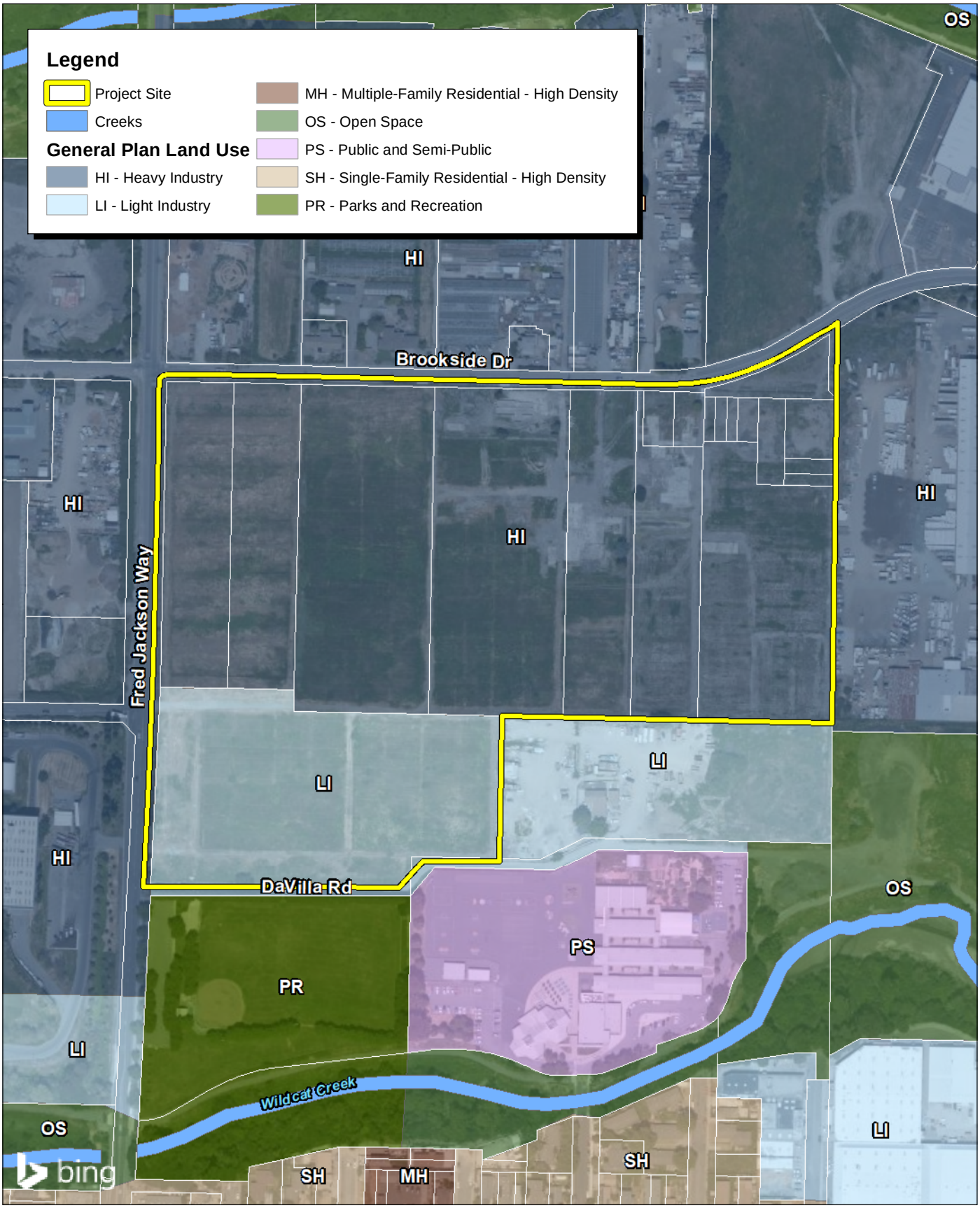
Source: bing Aerial Imagery. County of Contra Costa Parcel Data.

FIRSTCARBON SOLUTIONS™

680 340 0 680 Feet

Exhibit 2-3
Parcel Map

THIS PAGE INTENTIONALLY LEFT BLANK



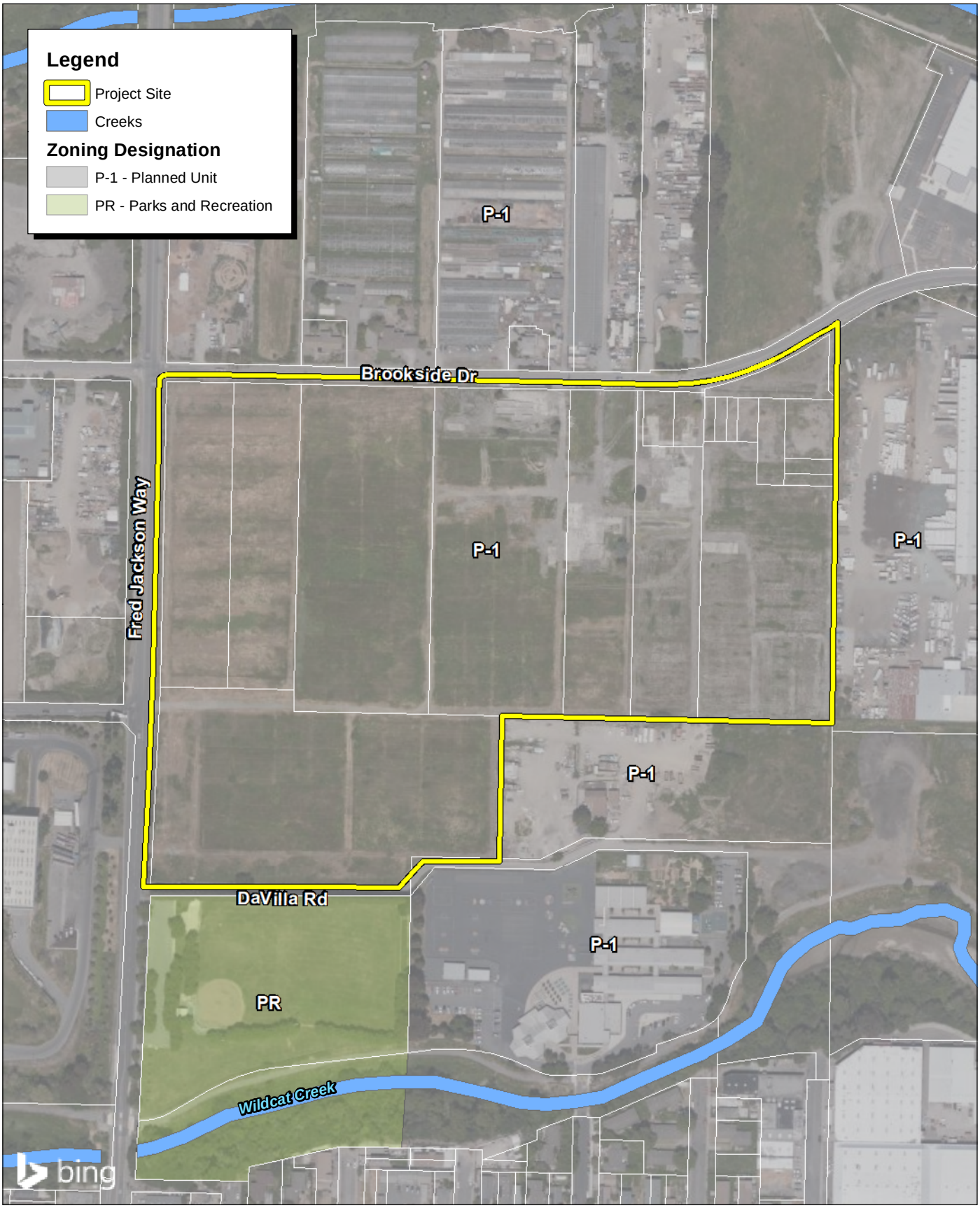
Source: bing Aerial Imagery. County of Contra Costa General Plan Land Use Data.

FIRSTCARBON SOLUTIONS™

300 150 0 300
Feet

Exhibit 2-4
Existing General Plan Land Use Designations

THIS PAGE INTENTIONALLY LEFT BLANK



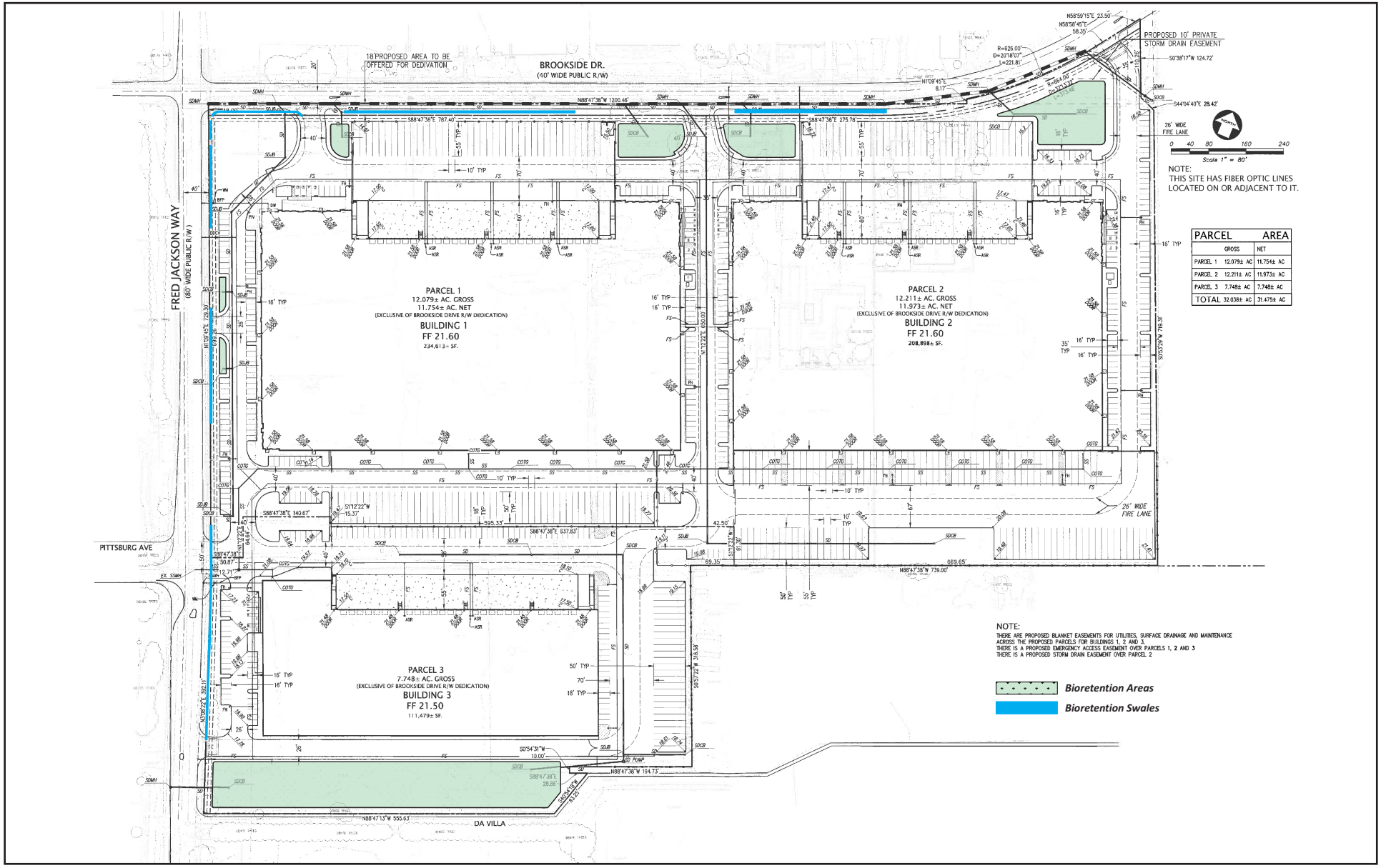
Source: bing Aerial Imagery. County of Contra Costa Zoning Data.

FIRSTCARBON SOLUTIONS™

300 150 0 300
Feet

Exhibit 2-5
Existing Zoning Code Designations

THIS PAGE INTENTIONALLY LEFT BLANK

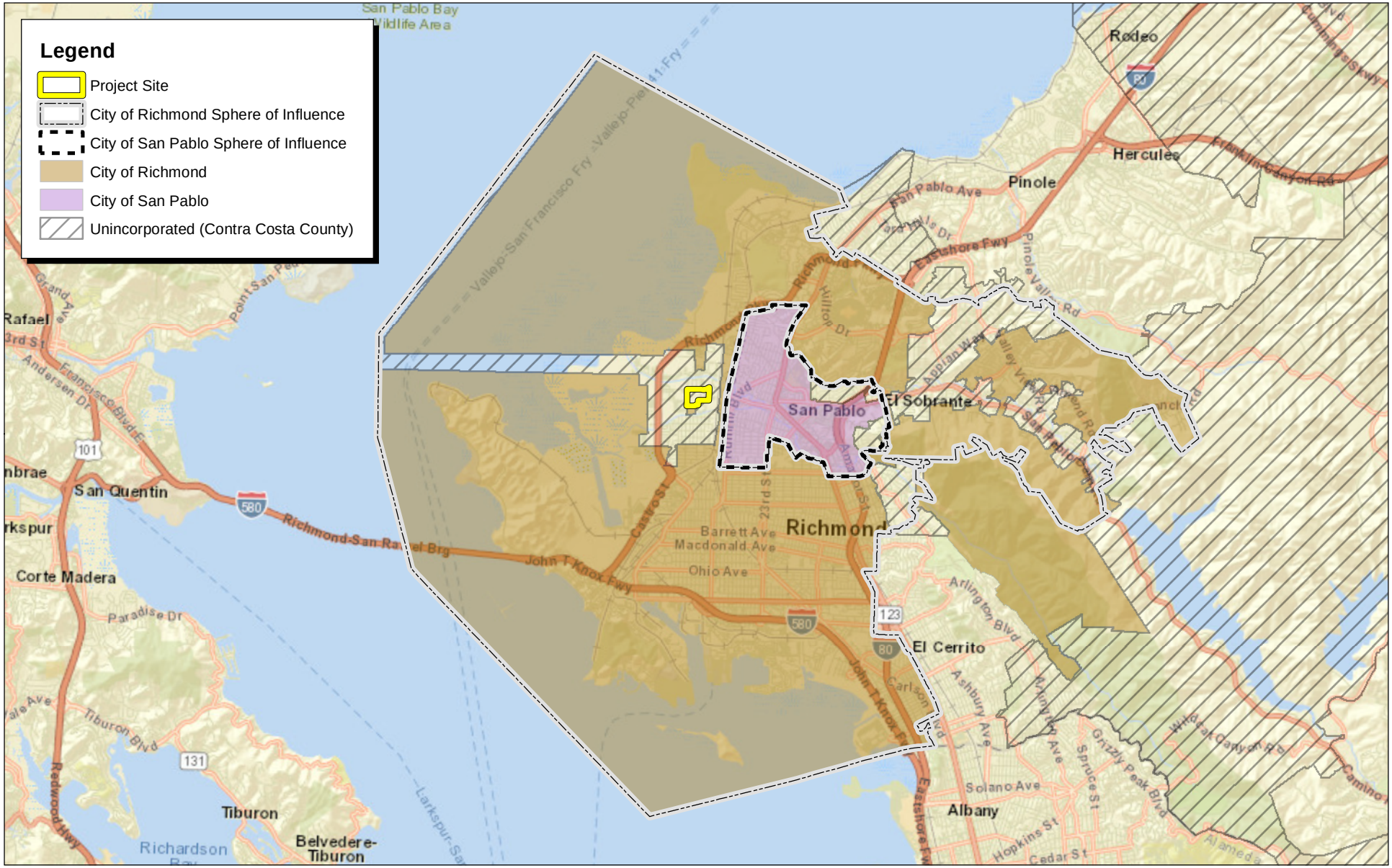


Source: KIER & WRIGHT Civil Engineers & Surveyors, Inc., January 2019.

FIRSTCARBON SOLUTIONS™

Exhibit 2-6
Site Plan

THIS PAGE INTENTIONALLY LEFT BLANK



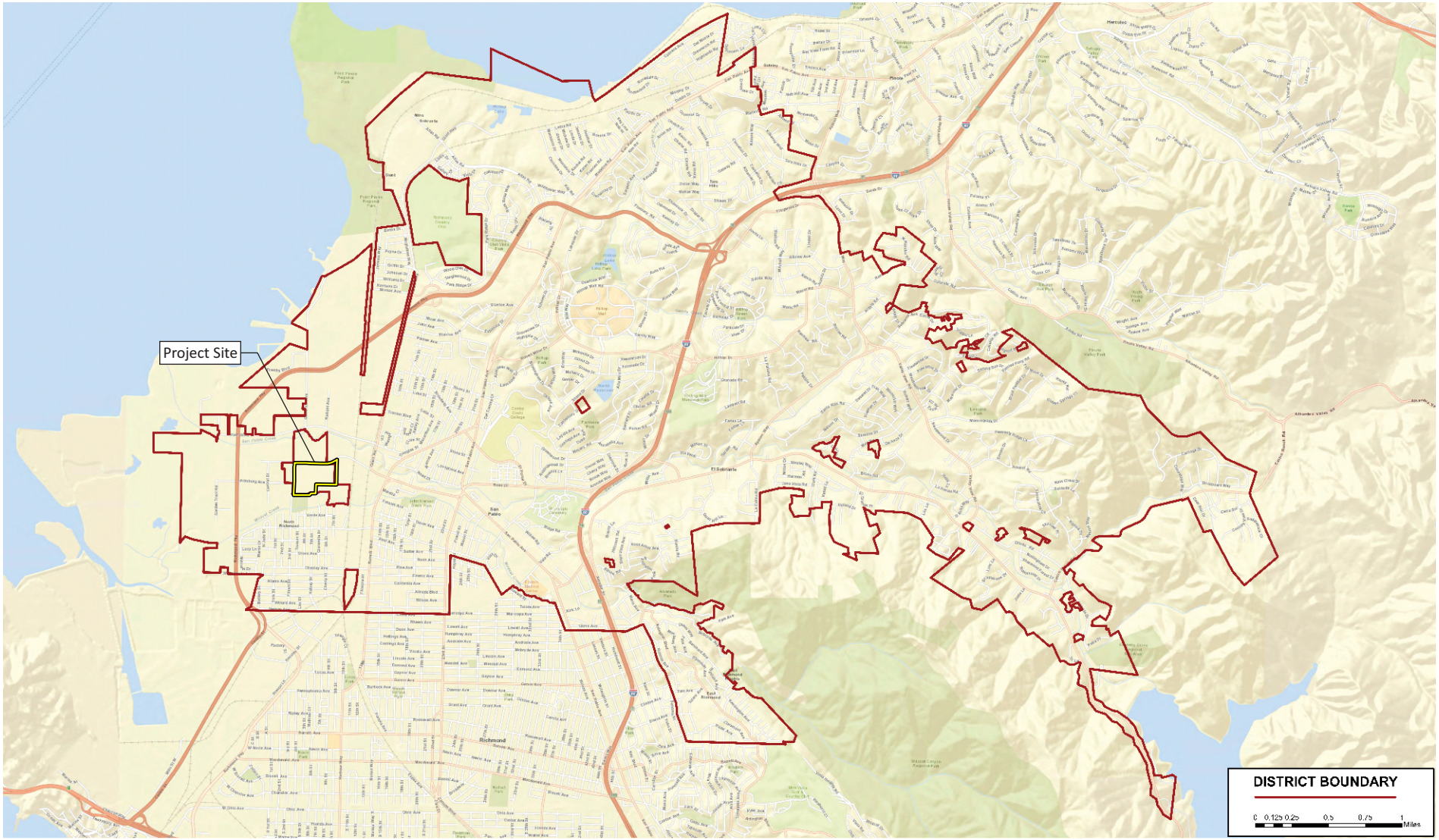
Source: ESRI Street Map Imagery. Contra Costa County.

FIRSTCARBON SOLUTIONS™

9,600 4,800 0 9,600 Feet

Exhibit 2-7
Spheres of Influence of Affected Cities

THIS PAGE INTENTIONALLY LEFT BLANK



Source: WCWD, 05/21/2014.

FIRSTCARBON SOLUTIONS™

Exhibit 2-8
Annexation Area in Relation to the WCWD Boundaries

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 3: ENVIRONMENTAL IMPACT ANALYSIS

Organization of Issue Areas

This Chapter sets forth the physical and regulatory environmental setting and addresses the environmental impacts of the proposed project with respect to 15 environmental resource areas. The discussions of the environmental setting describe the present physical conditions, or baseline conditions, in the project area. The baseline used for the analysis of environmental impacts under the California Environmental Quality Act (CEQA) reflects the conditions present at the time the Notice of Preparation (NOP) for this Draft Environmental Impact Report (Draft EIR) was published. The potential impacts of the proposed project are compared against the existing baseline conditions for each environmental resource.

Environmental Topics Addressed in this Draft EIR

The proposed project is analyzed in this Draft EIR from the perspective of the following 15 environmental resource areas:

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

Format of the Environmental Analysis

Each resource area analyzed in this Chapter includes the subsections summarized below.

Introduction

This subsection summarizes what will be discussed in the respective environmental topic section, states what informational documents are used as the basis for the section, and indicates what related comments, if any, were received during the EIR public scoping period.

Environmental Setting

This subsection describes the existing, baseline physical conditions of the project site and surroundings (e.g., existing land uses, transportation conditions, noise environment) with respect to each resource topic at the time the NOP was issued. Conditions are described in sufficient detail and breadth to allow a general understanding of the environmental impacts of the proposed project.

Regulatory Framework

This subsection describes the relevant federal, State, and local regulatory requirements that are directly applicable to the environmental topic being analyzed.

Impacts and Mitigation Measures

This subsection evaluates the potential for the proposed project to result in direct and indirect adverse impacts on the existing physical environment, with consideration of both short-term and long-term impacts. The analysis covers all phases of the proposed project, including construction and operation. The significance thresholds for environmental impacts are defined at the beginning of this subsection, and the discussion of the approach to the analysis explains how the significance thresholds have been applied to evaluate the impacts of the proposed project.

Indirect impacts are discussed only for those resources for which they have the potential to occur (e.g., cultural resources, air quality, and biological resources). Both project-level and cumulative impacts are analyzed. Project-level impacts could result from actions related to implementation of the project. Cumulative impacts could result from implementation of the proposed project in combination with other cumulative projects in the study area. As discussed in "Cumulative Impacts," below, the projects listed in Table 3-1, in conjunction with the proposed project, are considered the cumulative scenario for the analysis of cumulative impacts.

Impacts are analyzed and the respective assessment and findings are included in this Draft EIR, applying the following levels of significance:

- **No impact.** A conclusion of No Impact is reached if no potential exists for impacts or if the environmental resource does not occur in the project area or the area of potential impacts.
- **Less than significant impact.** This determination applies if the impact does not exceed the defined significance criteria or would be eliminated or reduced to a less than significant level through compliance with existing local, State, and federal laws and regulations. No mitigation is required for impacts determined to be less than significant.
- **Less than significant impact with mitigation.** This determination applies if the proposed project would result in a significant impact, exceeding the established significance criteria, but feasible mitigation is available that would reduce the impact to a less than significant level.
- **Significant and unavoidable impact.** This determination applies if the proposed project would result in an adverse impact that exceeds the established significance criteria, and no feasible mitigation is available to reduce the impact to a less than significant level. Therefore, the residual impact would be significant and unavoidable.
- **Significant and unavoidable impact with mitigation.** This determination applies if the proposed project would result in an adverse impact that exceeds the established significance criteria, and although feasible mitigation might lessen the impact, the residual impact would be significant, and, therefore, the impact would be unavoidable.

Impacts are defined in terms of their context and intensity. Context is related to the uniqueness of a resource; intensity refers to the severity of the impact. Where applicable, Best Management Practices (BMPs) or project improvement measures, or both, are incorporated into the proposed project to limit the potential for a significant impact. Where necessary, mitigation measures are identified for significant impacts to limit the degree or lower the magnitude of the impact; rectify the impact by repairing, rehabilitating, or restoring the affected environment; or compensate for the impact by replacing or providing substitute resources or environments. These impacts conclude with a finding of *less than significant impact with mitigation*. Where no mitigation measures are necessary, relevant impacts are concluded to be a *less than significant impact* or to have *no impact*.

As part of the impact analysis, mitigation measures are identified, where feasible, for impacts considered significant or potentially significant consistent with CEQA Guidelines Section 15126.4, which states that an EIR "shall describe feasible measures which could minimize significant adverse impacts." CEQA requires that mitigation measures have an essential nexus and be roughly proportional to the significant impact identified in the EIR. The project sponsor is required to implement all identified mitigation measures identified in this Chapter, and the lead agency (in this case, Contra Costa County) is responsible for overseeing the project sponsor's implementation of such mitigation measures. Pursuant to CEQA Guidelines Section 15126.4, mitigation measures are not required for environmental impacts that are found not to be significant.

Impacts are numbered and shown in bold type. The corresponding mitigation measures, where identified, are numbered and indented, and follow the impact statements. Impacts and mitigation measures are numbered consecutively within each topic and include an abbreviated reference to the impact section (e.g., "LAND" for Land Use and Planning). The following abbreviations are used for individual topics:

- Aesthetics (AES)
- Air Quality (AIR)
- Biological Resources (BIO)
- Cultural-Tribal Cultural Resources (CUL)
- Energy (ENER)
- Geology and Soils (GEO)
- Greenhouse Gas Emissions (GHG)
- Hazards and Hazardous Materials (HAZ)
- Hydrology and Water Quality (HYD)
- Land Use and Planning (LAND)
- Noise (NOI)
- Public Services (PUB)
- Transportation (TRANS)
- Utilities and Service Systems (UTIL)
- Wildfire (WILD)

Cumulative Impacts

The discussion of cumulative impacts in this subsection analyzes the cumulative impacts of the project, taken together with other past, present, and reasonably foreseeable future projects producing related impacts. The goal of this analysis is to determine whether the overall long-term impacts of all such projects would be cumulatively significant, and to determine whether the proposed project itself would cause a "cumulatively considerable" incremental contribution to any such cumulatively significant impacts. To determine whether the overall long-term impacts of all such projects would be cumulatively significant, the analysis generally considers the following:

- The area in which impacts of the project would be experienced;
- The impacts of the project that are expected in the area;
- Other past, proposed, and reasonably foreseeable projects that have had or are expected to have impacts in the same area;
- The impacts or expected impacts of these other projects; and
- The overall impact that can be expected if the individual impacts from each project are allowed to accumulate.

"Cumulative impacts" refers to two or more individual impacts that, when considered together, are considerable, or that compound or increase other environmental impacts (CEQA Guidelines § 15355). Cumulative impacts can result from individually minor but collectively significant impacts taking place over time (40 Code of Federal Regulations [CFR] § 1508.7). If the analysis determines that the potential exists for the project, taken together with other past, present, and reasonably foreseeable future projects, to result in a significant or adverse cumulative impact, the analysis then determines whether the proposed project's incremental contribution to any significant cumulative impact is itself significant (i.e., "cumulatively considerable"). The cumulative impact analysis for each individual resource topic is presented in each resource section of this Chapter immediately after the description of the direct project impacts and identified mitigation measures.

Table 3-1 lists the relevant cumulative projects considered for the environmental analysis, and Exhibit 3-1 shows the locations of the cumulative projects (projects 1 through 47).

Table 3-1: Cumulative Projects

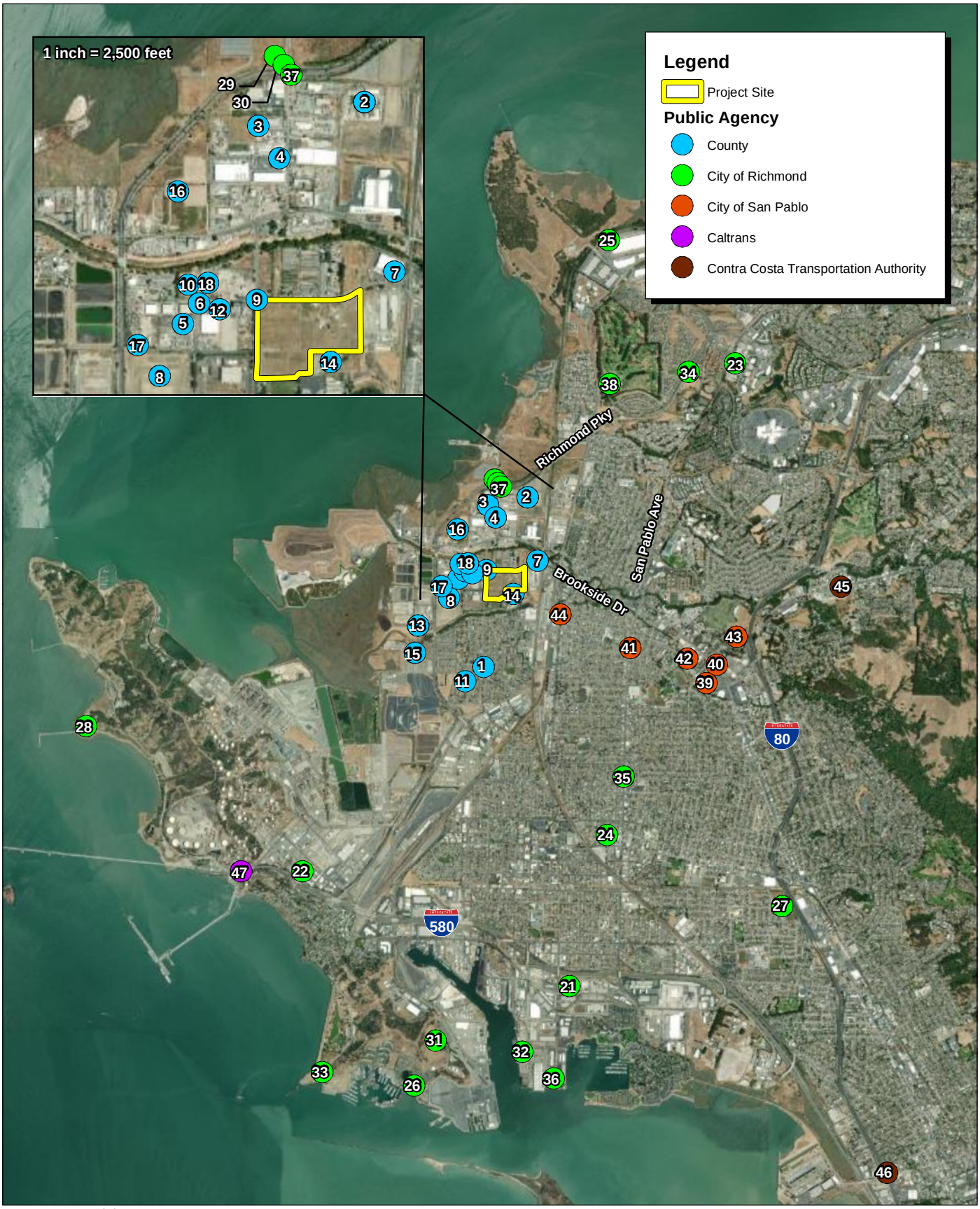
No.	Project	Characteristics	Project Development			
			Residential Units	Non-Residential Building Square Footage	Location	Status
Contra Costa County						
1	Heritage Point	4-story, multi-family affordable housing development with retail and office uses	42	—	Chesley Avenue/Fred Jackson Way	Under Construction
2	Oliver's Tow Yard	New auto shredder	—	—	2800 Radiant Avenue	Under Review
3	Sign Production Business	New building	—	—	2217 Goodrick Avenue	Approved
4	Industrial Buildings	Two, 1-story, industrial buildings	—	171,000	2601 Goodrick Avenue	Construction Complete
5	Light Industry Commercial Condominiums	Nine-parcel commercial subdivision/commercial condominium conversion	—	—	2200 Central Street	Approved
6	Commercial Greenhouse	New commercial greenhouse facility	—	72,417	112 Brookside Drive	Under Construction
7	Glass Door Production Facility Expansion	Expansion to existing glass door production facility	—	50,820	775 Brookside Drive	Approved
8	Warehouse	New distribution facility	—	500,000	500 Pittsburg Avenue	Approved
9	Urban Tilth Farm	Agricultural production farm, community learning center, and farm stand	—	—	Brookside Drive/Fred Jackson Way	Approved
10	Wood Recycling Facility	Wood recycling, chipping and grinding facility	—	—	109 Brookside Drive	Approved
11	Residential Addition	Residential garage addition	—	—	16 Alamo Avenue	Under Review
12	Trucking Yard	New trucking yard	—	—	150 Brookside Drive	Under Review
13	Commercial Water Treatment Facility	Centralized commercial water treatment facility within an existing warehouse building	—	—	1850 Garden Tract Road	Under Review
14	Contractor's Yard (Mauri Concrete Inc.)	Legalization of a contractor's yard	—	—	541 DaVilla Road	Under Review
15	Contractor's Yard	New multiple storage structures	—	—	560 West Gertrude Avenue	Under Review

No.	Project	Characteristics	Project Development			
			Residential Units	Non-Residential Building Square Footage	Location	Status
16	Scannell Properties	Two new warehouse buildings	—	327,207	81, 155 and 177 Parr Boulevard	Approved
17	Hoovestol Trucking Yard and Maintenance Facility	New truck maintenance facility and remodel of existing industrial office building	—	11,136	320 Pittsburg Avenue	Under Review
18	Material Recovery Facility	New material recovery facility	—	—	113 Brookside Drive	Under Review
19	Ghilotti Contractor's Yard	New contractor's yard	—	—	2800 Radiant Avenue	Under Review
20	Contractor's Yard (Orton Construction)	New contractor's yard with six storage containers	—	—	Garden Tract Road	Under Review
City of Richmond						
21	Bay Walk Mixed-Use Project	3-story mixed-use development with residential uses and tenant amenities	255	—	830 Marina Way South	Approved
22	Chevron Refinery Modernization Project	Infrastructure and facility improvements	—	—	841 Chevron Way	Under Construction
23	Making Waves Academy Expansion	Expansion and redevelopment for academic facilities to accommodate 2,050 new students	—	208,986	4075-4301 Lakeside Drive	Under Construction
24	Nevin Homes Residential Project	Multi-family residential dwellings	289	—	Nevin Avenue, 21st Street	Under Construction
25	Atlas Road Industrial Building Project	New logistics building and associated parking and loading	—	700,000	2995 Atlas Road	Constructed
26	Bottoms Property Residential Project	Market-rate condominiums within nine buildings	60	—	Waterline Place	Under Construction
27	Miraflores Residential Development	22 detached multi-story buildings containing residential units	190	—	Wall Avenue	Approved
28	Point Molate Mixed-Use Project	Mixed-use project with residential uses, commercial, and retail uses	1,000	624,572	Point Molate	Under Review
29	Power Plant Park Project	Cannabis production facility with 45 greenhouses, nursery, and processing center	—	—	Goodrick Avenue/ Richmond Parkway	Approved

No.	Project	Characteristics	Project Development			
			Residential Units	Non-Residential Building Square Footage	Location	Status
30	Goodrick Avenue Bay Trail Gap Closure Project	0.3-mile Class I bicycle and pedestrian trail along eastern side of Goodrick Avenue, north of Richmond Parkway	—	—	Goodrick Avenue	Under Review
31	Quarry Residential Project	Condominiums, tenant amenities, and open space	200		1135 Canal Boulevard	Under Review
32	RJJ Log Export Facility	Minor repairs to existing Terminal 3 building and improvements for log processing and export facility	—	—	1411 Harbour Way South	Under Review
33	Terminal One Project	Residential and open space uses	316		1500 Dornan Drive	Under Review
34	Making Waves Academy Hilltop Sports Facility	Development of a sports facility	—	—	Hilltop Drive/ Richmond Parkway	Under Review
35	23rd Street Streetscape Improvements	Improvement to 23rd Street from Costa Avenue to Bissell Avenue	—	—	23rd Street	Under Review
36	Marina Way South Residential Project	New residential development with retail space	399	1,811	Marina Way South	Under Review
37	Shea Properties Eco-Industrial Center	Three new buildings ranging from 166,400 to 179,400 square feet for light industrial uses and office space	—	537,056	Goodrick Avenue/Richmond Parkway	Under Review
38	102 Lot Subdivision	Planned Area and Design Review for new single-family residential units	102	—	3900 Giant Road	Application Incomplete
City of San Pablo						
39	Casino Parking Lot Project	Demolish existing parking lot and construct new parking lot with 998 spaces	—	—	2000 Vale Road	Approved
40	Kidney Dialysis Center	New 2-story building	—	13,591	13352 San Pablo Avenue	Approved
41	Fire Station 70	New 2-story fire station comprised of three apparatus bays, office space, dormitories	—	13,775	1800 23rd Street	Constructed
42	City Hall	New 2-story building	—	42,000	Plaza San Pablo	Under Construction

No.	Project	Characteristics	Project Development			
			Residential Units	Non-Residential Building Square Footage	Location	Status
43	Wildcat Creek Restoration and Greenway Trail Project	Restore 2,200 linear feet of Wildcat Creek and construct a Class I shared-use path for cyclists and pedestrians	—	—	Vale Road and Church Lane	Anticipated Construction Spring 2020–Spring 2021
44	Rumrill Boulevard Complete Streets Project	Improvements along Rumrill Boulevard to encourage multiple modes of transportation	—	—	Rumrill Boulevard	Anticipated Construction Fall 2020–Fall 2021
Contra Costa Transportation Authority						
45	I-80/San Pablo Dam Road Interchange Improvements	Reconstruct existing I-80/San Pablo Dam Road interchange (including modifications to the El Portal Drive and McBryde Avenue ramps) and provide improved pedestrian and bicycle facilities	—	—	I-80/San Pablo Dam Road	Phase 1 constructed; Phase 2 construction 2022–2024
46	I-80/Central Avenue Interchange Improvements	Improve overall traffic operations at the I-80/Central Avenue interchange and along Central Avenue between Rydin Road and San Pablo Avenue	—	—	I-80/Central Avenue	Phase 1 constructed; Phase 2 construction 2022–2023
Caltrans						
47	Richmond-San Rafael Bridge Access Improvements	Third eastbound traffic lane opened April 2018 and pedestrian/bicycle path opened November 2019	—	—	Richmond-San Rafael Bridge	Constructed

Sources:
Contra Costa County Department of Conservation and Development. 2019. North Richmond Projects.
City of Richmond. 2019. Major Projects. Website: http://www.ci.richmond.ca.us/1404/Major-Projects. Accessed December 10, 2019.
City of Richmond. 2019. Project Lists. Website: http://www.ci.richmond.ca.us/DocumentCenter/View/30802/Projects-List-by-Neighborhood?bidId=. Accessed December 12, 2019.
City of San Pablo. 2019. Planning Commission Minutes 2019. Website: https://www.sanpabloca.gov/ArchiveCenter/ViewFile/Item/1981. Accessed December 10, 2019.
City of San Pablo. 2019. Planning and Zoning. Website: https://www.sanpabloca.gov/1177/Planning-Zoning. Accessed December 10, 2019.
City of San Pablo. 2019. Public Works Projects. Website: https://www.sanpabloca.gov/879/Public-Works-Projects. Accessed December 10, 2019.
Contra Costa Transportation Authority. 2019. Quarterly Project Status Report July–September 2019.
California Department of Transportation (Caltrans). 2019. District 4 Current Projects. Website: https://dot.ca.gov/caltrans-near-me/district-4/d4-projects. Accessed December 12, 2019.
Compiled by FirstCarbon Solutions (FCS) 2021.



Source: ESRI Aerial Imagery.

FIRSTCARBON SOLUTIONS™

1 0.5 0 1 Miles

Exhibit 3-1
Cumulative Projects Location Map

THIS PAGE INTENTIONALLY LEFT BLANK

3.1 - Aesthetics

This section describes the existing aesthetics, light, and glare conditions in the project area as well as the relevant regulatory framework. This section also evaluates the possible impacts related to aesthetics that could result from implementation of the proposed project. Information included in this section is based upon on-site reconnaissance and photo inventory, as well as the Contra Costa County General Plan (General Plan) and the Contra Costa County Ordinance Code. No public comments were received in response to the Notice of Preparation (NOP) related to aesthetics.

3.1.1 - Environmental Setting

Visual Character

Visual character in the California Environmental Quality Act (CEQA) context is an impartial description of the defining physical features, landscape patterns, and distinctive physical qualities within a landscape. Visual character is informed by the composition of land, vegetation, water, and structure and their relationship (or dominance) to one another, and by prominent elements of form, line, color, and texture that combine to define the composition of views. Visual character-defining resources and features within a landscape may derive from notable landforms, vegetation, land uses, building design and façade treatments, transportation facilities, overhead utility structures and lighting, historic structures or districts, or panoramic open space.

Contra Costa County

Contra Costa County (County) covers a total of 805 square miles of land and water, with elevations ranging from 30 feet below sea level in eastern Contra Costa County to low-lying and relatively flat coastal terrain along the San Francisco-San Pablo Bay, to major ridgelines along the Diablo Range, a subdivision of the Pacific Coast Ranges, including the summit of Mount Diablo, which rises to an elevation of 3,849 feet above mean sea level, making it the most prominent topographical feature in the County.

The physical environment of the County ranges from urban to rural. The western and central County areas are characterized by urban and suburban city development. The eastern County area is characterized primarily by agricultural and open space areas.

Project Site

The project site is in western Contra Costa County on the southeast corner of Brookside Drive and Fred Jackson Way. The project site is relatively flat (approximately 12 to 20 feet above mean sea level) and contains the foundations of several former residential structures, barns, and former greenhouse buildings but no structures remain on-site. Fallow agricultural land is found on-site, consisting primarily of non-native grasses and herbaceous plants and forbs. Additionally, the site contains several trees, including coast redwood (*Sequoia sempervirens*), Atlas cedar (*Cedrus atlantica*), deodar cedar (*Cedrus deodara*), juniper (*Juniperus*), monkey puzzle (*Araucaria araucana*), coast live oak (*Quercus agrifolia*), southern magnolia (Magnolia grandiflora), and several ornamental trees.[1]

[1] Dmitri Tioupine 2018. Tree Care and Preservation. Pre-Development Tree Assessment Report. August.

The project site is bound to the west by Fred Jackson Way, as well as the West County Recycling Center and Household Hazardous Waste Facility, and commercial nurseries; to the north by Brookside Drive, commercial greenhouses, a nursery, Urban Tilth's North Richmond Farm, and a solar panel manufacturer; to the east by S & S RV Repairs and Lantier Tent Structures; and to the south by the Quarry House (an unoccupied single-family residence proposed to be converted to an office that stores numerous trucks), DaVilla Road (a minor side street), North Richmond Baseball Field, and Verde Elementary School.

Wildcat Canyon Regional Park is the eastern backdrop to the project site and San Pablo Bay and its shoreline are to the north and northwest.

Scenic Resources

Scenic resources typically involve prominent, unique, and identifiable natural features in the environment (e.g., trees, rock outcroppings, islands, ridgelines, channels of water, and aesthetically appealing open space) and cultural features or resources (e.g., regional or architecturally distinctive buildings, or structures that serve as a focal point of interest).

Contra Costa County

The Open Space Element of the General Plan identifies the main scenic resources within the County as the scenic ridges, hillsides, and rock outcroppings, such as San Pablo Ridge, Pinole Ridge, Sobrante Ridge, Lime Ridge, and Shell Ridge, as well as the San Francisco-San Pablo estuary system.[2]

Project Site

There are no scenic resources, as defined by the General Plan, located on the project site. The nearest designated scenic resources to the project site are San Pablo Bay, located approximately 0.75 mile to the northwest, and San Pablo Ridge located approximately 2.75 miles to the southeast.

Views

Views may be generally described as panoramic vistas from publicly accessible locations of a large geographic area for which the field of vision may be wide and/or may extend into the distance. Examples of distinctive views include urban skylines, valleys, mountain ranges, or large bodies of water.

Contra Costa County

State Route 24 (SR-24) and the portion of Interstate 680 (I-680) located south of the SR-24 junction, are officially designated State Scenic Highways and are identified as such in Figure 5-4 of the General Plan.[3,4] Interstate 580 (I-580) from the western Contra Costa County line to the Albany City Limits and SR-4 from Hercules to Bay Point are eligible State Scenic Highways and designated as Scenic Highways in Figure 5-4 of the General Plan. Mount Diablo, rising to an elevation of 3,849 feet, is the most prominent topographical feature in the County. San Pablo Ridge, Pinole Ridge, and Sobrante

[2] Contra Costa County Department of Conservation and Development. 2005. Contra Costa County General Plan. January 18.
[3] California Department of Transportation (Caltrans). 2019. List of eligible and officially designated State Scenic Highways. August.
[4] Contra Costa County. 2005. Contra Costa County General Plan 2005–2020, Transportation and Circulation Element.

Ridge are all designated as scenic ridgeways by the General Plan. The San Francisco-San Pablo Bay are designated scenic waterways by the General Plan.

Project Site

In August 2019, FirstCarbon Solutions (FCS) conducted a field visit of the project site to observe and document the existing visual quality and character of the area. Photographs depicting existing views are shown in Exhibit 3.1-1. San Pablo Ridge is located approximately 2.75 miles to the southeast and is slightly visible along the horizon, although existing development, such as buildings, roadways, and vegetation partially obstruct this view. Sobrante Ridge, located approximately 5.25 miles east, and Pinole Ridge, located approximately 5.5 miles to the east, are scarcely visible along the horizon due to development, such as buildings and roadways. Views of San Pablo Bay, located approximately 0.75 mile from the project site, are blocked by intervening industrial buildings, Richmond Parkway, and vegetation surrounding the site.

Light and Glare

In the context of the CEQA Guidelines, light is nighttime illumination that stimulates sight and makes things visible, and glare is difficulty seeing in the presence of bright light such as direct or reflected sunlight.

Project Site Vicinity

The primary sources of nighttime light in the surrounding area are from vehicle headlights traveling along Fred Jackson Way, Brookside Drive, and surrounding roadways, as well as exterior lighting associated with surrounding businesses and homes. Surrounding buildings contribute to daytime glare within the project area.

Project Site

There are no streetlights on the project site or on Brookside Drive or Fred Jackson Way. The project site does not contain existing sources of glare as there are no longer structures on the project site. The existing structures adjacent to the project site include exterior nighttime lighting; however, such lighting is minimal.

3.1.2 - Regulatory Framework

Federal

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

State

California Scenic Highway Program

The State Legislature created the California Scenic Highway Program, maintained by the California Department of Transportation (Caltrans), in 1963. The purpose of the State Scenic Highway Program is to protect and enhance the natural scenic beauty of California highways and adjacent corridors, through special conservation treatment. The State laws governing the Scenic Highway Program are found in the Streets and Highways Code, Sections 260 through 263. A highway may be designated

scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been officially designated. The status of a proposed State Scenic Highway changes from eligible to officially designated when the local governing body applies to Caltrans for Scenic Highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a Scenic Highway.

Title 24 of the California Code of Regulations Building Energy Efficiency Standards

California Building Code (California Code of Regulations [CCR], Title 24)–including Title 24, Part 6–includes Section 132 of the Building Energy Efficiency Standards, which regulates lighting characteristics, such as maximum power and brightness, shielding, and sensor controls to turn lighting on and off. Different lighting standards are set by classifying areas by lighting zone. The classification is based on population figures of the 2000 Census. Areas can be designated as LZ1 (dark), LZ2 (rural), or LZ3 (urban). Lighting requirements for dark and rural areas are stricter in order to protect the areas from new sources of light pollution and light trespass.

Local

Contra Costa County General Plan

Land Use Element

The Contra Costa County General Plan Land Use Element establishes the following goals and policies related to aesthetics:

Goal 3-C To encourage aesthetically and functionally compatible development, which reinforces the physical character and desired images of the county.

Goal 3-J To encourage a development pattern that promotes the individuality and unique character of each community in the county.

Policies

Policy 3-18 Flexibility in the design of projects shall be encouraged in order to enhance scenic qualities and provide for a varied development pattern.

Policy 3-188 Achieve an upgrading of the visual appearance and unity of the area through architectural and landscape requirements and utility undergrounding.

Policy 3-188-b Limit activities which may result in noise, glare, or vibrations beyond the designated industrial areas.

Open Space Element

The Contra Costa County General Plan Open Space Element establishes the following goals and policies related to aesthetics:

Policies

Policy 9-4 Where feasible and desirable, major open space components shall be combined and linked to form a visual and physical system in the county.

Policy 9-5 The visual identities of urban communities shall be preserved through the maintenance of existing open space areas between cities and/or communities.

Policy 9-12 In order to conserve the scenic beauty of the county, developers shall generally be required to restore the natural contours and vegetation of the land after grading and other land disturbances. Public and private projects shall be designed to minimize damage to significant trees and other visual landmarks.

Policy 9-14 Extreme topographic modification, such as filling in canyons or removing hilltops shall be avoided. Clustering and planned unit development approaches to development shall be encouraged. All future development plans, whether large or small scale, shall be based on identifying safe and suitable sites for buildings, roads and driveways. Exemptions to this policy are appropriate for mining, landfill, and public projects in open space areas.

Policy 9-24 The appearance of the county shall be improved by eliminating negative features such as non-conforming signs and overhead utility lines, and by encouraging aesthetically designed facilities with adequate setbacks and landscaping.

Policy 9-25 Maintenance of the scenic waterways of the county shall be ensured through public protection of the marshes and riparian vegetation along the shorelines and delta levees, as otherwise specified in this Plan.

Contra Costa County Ordinance Code

The site is located within the P-1 Zoning District (Exhibit 2-5) on the County's Zoning Map.

P-1 Zoning District

As stated in Section 84-66.204, the intent of the P-1 Zoning District is to allow "diversification in the relationship of various uses, buildings, structures, lot sizes and open space while insuring (*sic*) substantial compliance with the General Plan and the intent of the Ordinance Code in requiring adequate standards necessary to satisfy the requirements of the public health, safety and general welfare. These standards shall be observed without unduly inhibiting the advantages of large-scale or special area planning."[5]

Table 3.1-1 identifies the development standards for land uses, structures, and site development within the P-1 Zoning District for Heavy Industrial and Light Industrial.

[5] Contra Costa County. Contra Costa County Ordinance Code, Section 84-66.204 - Intent and purpose. Website: https://library.municode.com/ca/contra_costa_county/codes/ordinance_code?nodeId=TIT8ZO_DIV84LAUSDI_CH84-66PLUNDI. Accessed April 2, 2020.

Table 3.1-1: P-1 North Richmond Zoning District Development Standards for Heavy Industrial and Light Industrial

Development Feature	Heavy Industrial Requirement	Light Industrial Requirement
Minimum Lot Area	10 acres (per Section 84-66.602)	7,500 square feet
Minimum Lot Width	N/A	N/A
Maximum Building Height	40 feet	50 feet
Floor Area Ratio (FAR)	0.67	0.67
Maximum Lot Coverage	30 percent	50 percent
Parking	1 parking space/1,000 square feet (warehouse) 5 parking spaces/1,000 square feet (office)	1 parking space/1,000 square feet (warehouse) 5 parking spaces/1,000 square feet (office)
Minimum Landscaped Area	10 percent	10 percent

Notes:
* Pursuant to the North Richmond P-1 Development Standards, approved February 11, 2003, with additional mitigation for cumulative traffic impacts, the floor area ratio (FAR) may be increased to 0.67.
* Pursuant to the North Richmond P-1 Development Standards, approved February 11, 2003, 50 percent lot coverage is allowed for Light Industrial uses within Heavy Industrial land use designation.

Source: Contra Costa County North Richmond P-1 Development Standards. Approved February 11, 2003.

Section 76-4.612—Public Nuisance Lighting

The Public Nuisance Lighting Ordinance requires that lighting fixtures be installed, controlled, or directed so that the light will not glare or be blinding to pedestrians or vehicular traffic or on adjoining property.[6]

3.1.3 - Impacts and Mitigation Measures

Significance Criteria

According to the CEQA Guidelines Appendix G Environmental Checklist, to determine whether impacts to aesthetics are significant environmental effects, the following questions are analyzed and evaluated.

Except as provided in Public Resources Code Section 21099, would the project:

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?

[6] Contra Costa County. Contra Costa County Ordinance Code, Section 76-4.612 - Public nuisance lighting. Website: https://library.municode.com/ca/contra_costa_county/codes/ordinance_code?nodeId=TIT7BURE_DIV76ELCO_CH76-4MO_ART76-4.2RE_76-4.612PUNULI. Accessed September 3, 2020.

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, would the project 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?

Approach to Analysis

This analysis provides a discussion of the visual impacts associated with the proposed project and the area surrounding the project site. Several variables affect the degree of visibility, visual contrast, and ultimately project impacts: (1) scale and size of facilities, (2) viewer types and activities, (3) distance and viewing angle, and (4) influences of adjacent scenery or land uses. Viewer response and sensitivity vary depending on viewer attitudes and expectations.

As part of this analysis, FCS conducted a field visit of the project site to observe and document the existing visual quality and character of the project site as well as the surrounding areas. Photographs depicting existing views of the project site are shown in Exhibit 3.1-1. The General Plan and Contra Costa County Ordinance Code were also evaluated to determine applicable policies and design requirements for the proposed project.

Light and Glare

The analysis of light and glare impacts in this section focuses on the nature and magnitude of changes in light and glare conditions of the project site and surrounding area. If the light and glare conditions of the proposed project and the existing environment are similar, then the visual compatibility would be high. If the light and glare conditions of the proposed project strongly contrast with the existing light and glare or applicable policies and guidelines, then light and glare compatibility would be low and significant impacts may result. Relevant urban design policies and guidelines are used to provide conclusions regarding the significance of project- and cumulative-level light and glare impacts.

Specific Thresholds of Significance

The County does not have quantitative thresholds for evaluation of aesthetics; however, the following qualitative thresholds are used to evaluate the significance of aesthetics impacts resulting from implementation of the proposed project.

- Block existing views from a County-designated scenic roadway toward a County-designated scenic resource (e.g., ridgeline).
- Be inconsistent with the character of the plan area or existing development in the surrounding area or would substantially alter existing natural topography.
- Increase existing nighttime light or daytime glare sources in the plan area or vicinity in a manner that would substantially affect nighttime or daytime views.

- Reduce sunlight or introduce shadows to public parks and plazas, routinely usable outdoor spaces associated with recreational land uses, pedestrian-oriented commercial spaces such as outdoor eating areas, and existing solar facilities.

Impact Evaluation

Scenic Vistas

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

There are no scenic resources, as defined by the General Plan, located on the project site. The nearest designated scenic resources to the project site are San Pablo Bay, located approximately 0.75 mile to the northwest, and San Pablo Ridge located approximately 2.75 miles to the southeast. A significant impact would occur if construction of the proposed project would have a substantial adverse effect on a scenic vista,[7] as defined and identified in the General Plan.

The General Plan, in lieu of identifying scenic vistas, identifies scenic roads as they also afford publicly available views. A scenic road is defined as having a highway, road, drive, or street that, in addition to its transportation function, provides opportunities for the enjoyment of natural and human-made scenic resources. Scenic roads direct views to areas of exceptional beauty, natural resources or landmarks, or historic or cultural interest. In the General Plan, the nearest scenic route is I-580, located approximately 2.5 miles south of the site. Due to the distance and intervening development, the project site is not visible from this scenic route.[8]

Construction

Construction equipment would be present on the project site intermittently throughout the construction period and could be visible from scenic vistas, although since its presence would be temporary, it would not result in a substantial impact to any scenic vistas. As the project site does not contain any designated scenic resources and is not visible from the nearest designated scenic route, I-580, which is located approximately 2.5 miles to the south, removal of the existing trees and vegetation would not adversely impact existing views of scenic vistas within the project vicinity. Therefore, impacts due to construction would be less than significant.

Operation

The General Plan's Open Space Element includes provisions to prohibit development on scenic ridges, hillsides and rock outcroppings where structures would interrupt the skyline and alteration of slopes greater than 26 percent. There are no scenic ridges, hillsides and rock outcroppings on the project site.

The proposed buildings would each be 1-story tall, approximately 42 feet in height, and would be comprised of tilt-up concrete material. Additional building materials would consist of metal, aluminum, and glass. The existing buildings adjacent to the project site consist of 1-story warehouses and 1-story buildings constructed of similar materials as the proposed buildings. As such, the

[7] A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public.
[8] Contra Costa County Department of Conservation and Development. 2005. Contra Costa County General Plan. January 18.

proposed buildings would be consistent with Section 84-66.1402 of Contra Costa County Ordinance Code related to the P-1 Zoning District, which requires that the height and visual appearance of the buildings be compatible with existing adjoining development. The off-site improvements, including the installation of a traffic signal, porkchop medians, bicycle lane, sidewalks, curbs, gutters, storm drain lines, landscaping, and bioretention swales would be located along the project site frontages of Brookside Drive and Fred Jackson Way, as well as locations within public rights-of-way in the project vicinity, and would not significantly impact designated scenic resources. Thus, the proposed project would not significantly impact designated scenic resources, including views of and views from scenic ridgelines located in the project vicinity. Therefore, impacts related to scenic vistas would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation required.

Level of Significance After Mitigation

Less than significant impact.

Scenic Highways

Impact AES-2:	**The proposed project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a State Scenic Highway.**

Construction

A significant impact would occur if construction of the proposed project would substantially damage scenic resources as seen from a designated scenic highway. The nearest officially Designated State Scenic Highway is SR-24, located approximately 10 miles southeast of the site. The nearest eligible State Scenic Highway, which is also designated as a Scenic Highway in the General Plan, is I-580, located approximately 2.5 miles south of the site. In addition, there are no scenic resources, as designated by the General Plan located on the project site. Thus, demolition, grading, and other construction activities would not result in adverse impacts to scenic resources. Therefore, no temporary construction impact related to scenic resources within a State Scenic Highway would occur.

Operation

A significant impact would occur if operation of the proposed project would substantially damage scenic resources as seen from a designated scenic highway.

There are no officially designated State Scenic Highways or County scenic roadways in or adjacent to the project site. The project site is located approximately 1.75 miles west of I-80, which is not designated as a State Scenic Highway. The nearest eligible State Scenic Highway, which is also designated as a Scenic Highway in the General Plan, is I-580, located approximately 2.5 miles south of the site. The nearest officially Designated State Scenic Highway is SR-24, located approximately 10

miles southeast of the project site. There are no scenic resources, as defined by the General Plan, located on the project site, of which a view would be available from a scenic highway or roadway. Given the absence of scenic highways proximate to the project site, the lack of designated scenic resources (i.e., ridgelines, hillsides, rock outcroppings) on the project site, and the presence of intervening development between the project site and the nearest scenic highways, the proposed project would not adversely affect views from a State Scenic Highway. Thus, impacts related to scenic resources within a State Scenic Highway would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation required.

Level of Significance After Mitigation

Less than significant impact.

Visual Character

Impact AES-3:	**The proposed project is in an urbanized area and would not conflict with applicable zoning and other regulations governing scenic quality.**

Construction

Construction of the proposed project would include removal of existing building foundations, impervious surfaces, on-site trees, and other vegetation. Construction would also include off-site improvements within public right-of-way and along the project site frontages of Brookside Drive and Fred Jackson Way. Thus, the construction could temporarily affect the existing visual character or quality of the project site and area. However, the area surrounding the project site has an industrial character with most surrounding land uses occupied by businesses. Therefore, although construction of the proposed project would temporarily affect the visual character and quality of the area, construction-related impacts related to degradation of the existing visual character or quality of the project site and area would be temporary and less than significant.

Operation

The analysis of operational impacts addresses both consistency with zoning and other regulations governing scenic quality, as well as changes to the existing visual character and quality.

The proposed project would change the visual character of the site. The building foundations, impervious surfaces, on-site trees, and other vegetation would be removed and the site would be developed with three warehouse buildings (comprised of tilt-up concrete material), surface parking, and associated landscaping. The proposed buildings would be 42-feet tall and be compatible in height and visual appearance with existing adjoining development, as required by Section 84-66.1402 of the Contra Costa County Ordinance Code for the P-1 Zoning District. Exterior building materials would consist of concrete, metal, aluminum, and glass. An 8-foot-high black tubular metal fence would be installed around the perimeter of the property. The off-site improvements, which

include roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would not conflict with any regulations governing scenic quality.

The proposed project is located within an urbanized portion of the County and is surrounded by agricultural and industrial businesses, as well as an elementary school and ballpark. As such, the proposed project would be located within an urban area primarily containing industrial uses and would be compatible with existing surrounding development.

The General Plan designates the site as Light Industrial (LI) and Heavy Industrial (HI). Pursuant to the General Plan Land Use Element, the LI designation allows for a floor area ratio (FAR) between 0.25 and 0.67 and maximum site coverage is allowed up to 50 percent with an average of 60 employees per gross acre. One of the primary land uses associated with the LI designation is warehousing. The HI designation allows a FAR between 0.1 and 0.4, and maximum site coverage is allowed up to 30 percent with an average of 45 employees per gross acre. One of the primary land uses associated with the HI designation is warehouses. The proposed project would not require a General Plan Amendment and would be consistent with the LI and HI land use designations.

In addition, the site is located within the P-1 Zoning District on the County's Zoning Map. The P-1 Zoning District is intended to support large-scale integrated development in compliance with the General Plan designations. The proposed project would be consistent with the Design Objectives identified in Section 84-66.1402 of Contra Costa County Ordinance Code related to the P-1 Zoning District. For example, the building bulk, height, land coverage, and visual appearance is compatible with existing adjoining development. In addition, the design of the buildings provides for harmonious composition of mass, scale, color, and textures. The proposed project would not require a rezone because the proposed project components would be consistent with the P-1 Zoning District designation.

The proposed project would result in the construction of three warehouse buildings and associated off-site improvements, which would be consistent with the existing land uses within the surrounding area. The proposed project would be consistent with scenic quality regulations and reinforce visual character of the area. Therefore, impacts related to consistency with applicable scenic quality regulations and visual quality and character would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation required.

Level of Significance After Mitigation

Less than significant impact.

Light and Glare

Impact AES-4: The proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Construction

Impacts related to degradation of existing visual character or quality of the project site and area are limited to operational impacts. No respective construction impacts would occur.

Operation

The proposed project would have a significant impact if substantial light or glare would adversely affect nighttime or daytime views, respectively, in the area. The proposed project would result in the development of three new buildings with associated windows, as well as exterior lighting and signage. Additional vehicle traffic would also be associated with the proposed project. As such, the proposed project would create an increase of nighttime light and daytime glare, due to the increase of lighting and reflective surfaces from the new buildings and new vehicle headlights in the area. The increase in nighttime lighting represents a potentially significant impact.

Potential sources of light associated with the proposed project would consist of lighting from the industrial buildings and from vehicles traveling to and from the project site. A monument sign is proposed at the corner of Brookside Drive and Fred Jackson Way. Exterior lighting would be located around and within the project site and would include 22-foot tall lampposts primarily located within the parking areas and building frontages. Safety lighting would be provided throughout the project site as needed. However, the lighting would be consistent with that of adjoining land uses and is not expected to substantially alter the ambient light conditions. Light spillage from these locations would be limited by existing trees along the adjacent properties and proposed landscaping on the project site. In addition, all proposed project lighting would be required to shield and direct light downward and prevent light from affecting adjacent properties consistent with the Contra Costa County Ordinance Code. Furthermore, Mitigation Measure (MM) AES-4 would require the applicant to prepare a Final Lighting Plan to ensure that lighting does not spill over onto adjacent properties. Therefore, impacts related to lighting would be less than significant with mitigation.

Potential sources of glare associated with the proposed project would consist of glazing (windows) and other reflective materials used in the façades of the proposed buildings. Glare may also occur from on-site vehicles or vehicles traveling within and around the project site; however, such glare would be transient, depending upon the time of day and location of the vehicle. Glare resulting from the proposed warehouse buildings' windows would be minimal and would be partially obscured by landscaping, depending on the time of day and the location of the reflecting light source. Therefore, glare impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AES-4 Prepare Final Lighting Plan

At least 30 days prior to applying for a building permit, the applicant shall submit for review and approval by the Contra Costa County Department of Conservation and Development staff a Final Lighting Plan. Light standards shall be low-lying and exterior lights on the buildings shall be deflected so that lights shine onto the applicant's property.

Level of Significance After Mitigation

Less than significant impact.

3.1.4 - Cumulative Impacts

The geographic scope of the cumulative aesthetics analysis is the visible area surrounding the project site. The analysis also considers the foreseeable development projects listed in Chapter 3, Environmental Impact Analysis, Table 3-1, Cumulative Projects, in unincorporated Contra Costa County and the surrounding cities, in addition to the proposed project.

Visual Character and Views

The development projects listed in Table 3-1 are mostly industrial and commercial in nature. Of the projects listed in Table 3-1, Cumulative Projects 6, 7, 9, 12, 14, and 18 would occur in the same visible area. Cumulative Project 6, which includes a new commercial greenhouse facility, is located approximately 0.18 mile west of the project site and is currently under construction. Project 7, which would expand an existing glass door production facility, is located approximately 0.15 mile northeast of the project site. Project 9, which consists of a farm, learning center, and farm stand at Urban Tilth, is located approximately 0.02 mile north of the project site. Project 12, which would include a new trucking yard, is located approximately 0.12 mile west of the project site. Project 18, which would develop a new material recovery facility, is located approximately 0.14 mile northwest of the project site. The proposed project and Cumulative Projects 6, 7, 12, 14, and 18 would develop industrial and commercial uses in an area that currently contains vacant and industrial land uses. As such, the proposed project and Cumulative Projects would be consistent with character of the surrounding area and would not obstruct current views.

The proposed project and Cumulative Projects 6, 7, 12, 14, and 18 would be subject to the same County codes and guidelines related to building heights, setbacks, undergrounding of utilities, landscaping, signage, and permitted land uses. As such, the proposed project, in conjunction with other planned and approved projects, would result in a less than significant cumulative impact with respect to visual character and views.

Light and Glare

The development projects listed in Table 3-1 are mostly industrial and commercial in nature. Of the projects listed in Table 3-1, Projects 6, 7, 12, 14, and 18 would occur in the same visible area. The Cumulative Projects are located within 0.18 mile of the project site. The proposed project and Cumulative Projects 6, 7, 12, 14, and 18 would include streetlights, exterior lighting, safety lighting, lighting from vehicles, and sources of glare from the buildings and vehicles.

Lighting and exterior building materials associated with the proposed project and Cumulative Projects 6, 7, 12, 14, and 18 would be subject to administrative design review by the Department of Conservation and Development, Community Development Division and would ensure appropriate building materials are utilized, building windows are tinted with anti-reflective material, and the exterior lighting is designed so that it is directed downward and away from adjacent properties and public/private right-of-way (per Contra Costa County Ordinance Code). The proposed project and Cumulative Projects 6, 7, 12, 14, and 18 would increase light and glare compared to existing conditions. However, adherence to the administrative design review process and standards would minimize the light and glare impacts for the proposed project and Cumulative Projects 6, 7, 12, 14, and 18. As such, the proposed project, in conjunction with other planned and approved projects, would result in a less than significant cumulative impact with respect to light and glare.

Level of Cumulative Significance

Less than significant impact.

View northeast from the southeast corner, adjacent to Fred Jackson Way.

View west from the property fence between east and west parcels.

Source: Basin Research Associates, Archaeological Resources Assessment, Revised November 2019.

FIRSTCARBON SOLUTIONS™

Exhibit 3.1-1
Existing Views of Project Site

THIS PAGE INTENTIONALLY LEFT BLANK

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 proposed project. Information included in this section is based on the project-specific Air Quality and Greenhouse Gas Emissions Technical Report and Health Risk Assessment prepared by Placeworks in January 2021 included in Appendix B. The following comments related to Air Quality were received during the Notice of Preparation (NOP) scoping period:

- The commenter recommends the Environmental Impact Report (EIR) use a very conservative significance threshold to evaluate impacts and mitigation requirements because the site is located in the Bay Area Air Quality Management District (BAAQMD) Community Air Risk Evaluation (CARE) Program.
- The EIR should evaluate the project's consistency with the BAAQMD's 2017 Clean Air Plan.

3.2.2 - Environmental Setting

Regional Geography and Climate

Contra Costa County (County) is located within the San Francisco Bay Area Air Basin (Air Basin or SFBAAB). The Air Basin is approximately 5,600 square miles in area and consists of nine counties that surround the San Francisco Bay, including all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties; the southwestern portion of Solano County; and the southern portion of Sonoma County. The San Francisco Bay Area (Bay Area) has a Mediterranean climate characterized by mild, dry summers and mild, moderately wet winters; moderate daytime onshore breezes, and moderate humidity.

Meteorology

The Air Basin is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range[1] splits in the Bay Area, creating a western coast gap, the Golden Gate, and an eastern coast gap, the Carquinez Strait, which allow air to flow in and out of the Bay Area and the Central Valley.

The climate is dominated by the strength and location of a semipermanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below the surface because of the northwesterly flow produces a band of cold water off the California coast.

[1] The Coast Range parallels California's West Coast from Humboldt County to Santa Barbara County.

The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold water band, resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

Wind Patterns

During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately south of Mount Tamalpais in Marin County, the northwesterly winds accelerate considerably and come more directly from the west as they stream through the Golden Gate. This channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward Richmond and to the southwest toward San José where it meets the East Bay hills.

Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate, or the San Bruno gap. For example, the average wind speed at the San Francisco International Airport in July is about 17 knots (from 3:00 p.m. to 4:00 p.m.), compared with only 7 knots at San José and less than 6 knots at the Farallon Islands.

The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part upon the height and strength of the inversion. Under normal atmospheric conditions, the air in the lower atmosphere is warmer than the air above it. An inversion is a change in the normal conditions that causes the temperature gradient to be reversed or inverted. If the inversion is low and strong, hence stable, the flow of the sea breeze will be inhibited, and stagnant conditions are likely to result.

In the winter, the Air Basin frequently experiences stormy conditions with moderate to strong winds as well as periods of stagnation with very light winds. Winter stagnation episodes (i.e., conditions where there is little mixing, which occur when there is a lack of or little wind) are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the Air Basin.

Temperature

Summertime temperatures in the Air Basin are determined in large part by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a largescale gradient (differential) in temperature is often created between the coast and the Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of cold water from the ocean bottom along the coast. On summer afternoons, the temperatures at the coast can be 35°F (degrees Fahrenheit) cooler than temperatures 15 to 20 miles inland; at night, this contrast usually decreases to less than 10°F.

In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime, the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large.

Precipitation

The Air Basin is characterized by moderately wet winters and dry summers. Winter rains (November through March) account for about 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the Air Basin to another, even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys.

During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing (an upward and downward movement of air) are usually high, and thus pollution levels tend to be low (i.e., air pollutants are dispersed more readily into the atmosphere rather than accumulating under stagnant conditions). However, during the winter, frequent dry periods do occur where mixing and ventilation are low and pollutant levels build up.

Wind Circulation

Low wind speed contributes to the buildup of air pollution because it allows more pollutants to be emitted into the air mass per unit of time. Light winds occur most frequently during periods of low sun (fall and winter, and early morning) and at night. These are also periods when air pollutant emissions from some sources are at their peak, namely, commuter traffic (early morning) and woodburning appliances (nighttime). The problem can be compounded in valleys when weak flows carry the pollutants up-valley during the day and cold air drainage flows move the air mass down-valley at night. Such restricted movement of trapped air provides little opportunity for ventilation and leads to build up of pollutants to potentially unhealthful levels.

Inversions

As described above, an inversion is a layer of warmer air over a layer of cooler air. Inversions significantly affect air quality conditions because they influence the mixing depth (i.e., the vertical depth in the atmosphere available for diluting air contaminants near the ground). There are two types of inversions that occur regularly in the Air Basin. Elevation inversions[2] are more common in the summer and fall, and radiation inversions[3] are more common during the winter. The highest air pollutant concentrations in the Air Basin generally occur during inversions.

Air Pollutant Types, Sources, and Effects

Criteria Air Pollutants

Concentrations of criteria air pollutants are used as indicators of air quality conditions. Air pollutants are termed criteria air pollutants if they are regulated by developing specific public health- and

[2] When the air blows over elevated areas, it is heated as it is compressed into the side of the hill/mountain. When that warm air comes over the top, it is warmer than the cooler air of the valley.

[3] During the night, the ground cools off, radiating the heat to the sky.

welfare-based criteria as the basis for setting permissible levels. According to the United States Environmental Protection Agency (EPA), criteria air pollutants are ozone, particulate matter (PM_{10} and $PM_{2.5}$), nitrogen dioxide (NO_2), carbon monoxide (CO), lead, and sulfur dioxide (SO_2). Table 3.2-1 provides a summary of the types, sources, and effects of criteria air pollutants of national and California concern.

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 reactive organic gases (ROG), 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 (ROG and NO_X) are mobile sources (on-road and off-road vehicle exhaust).	Irritate respiratory system; reduce lung function; breathing pattern changes; reduction of 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; some immunological changes; increased mortality risk; vegetation and property damage.
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 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.	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; aggravate existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias. • Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death.

Criteria Pollutant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
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 result in particulate matter (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 woodburning, 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 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}.	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 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.	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 ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically, or one pollutant alone is the predominant factor.

Criteria Pollutant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
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 April 1, 2021.

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 April 1, 2021.

National Archives and Records Administration. 2009. Part II, Environmental Protection Agency. 40 CFR 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 April 1, 2021.

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 April 1, 2021.

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 April 1, 2021.

South Coast Air Quality Management District (SCAQMD). 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 April 1, 2021.

United States Environmental Protection Agency (EPA). 2016. Nitrogen Dioxide (NO2) Pollution. Basic Information about NO2. Website: https://www.epa.gov/no2-pollution/basic-information-about-no2#What%20is%20NO2. Accessed April 1, 2021.

United States Environmental Protection Agency (EPA). 2020. Particulate Matter (PM) Pollution. Health and Environmental Effects of Particulate Matter (PM). Website: https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm. Accessed April 1, 2021.

United States Environmental Protection Agency (EPA). 2020. Health Effects Notebook for Hazardous Air Pollutants. Website: www.epa.gov/ttn/atw/hlthef/hapindex.html. Accessed April 1, 2021.

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 April 1, 2021.

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 April 1, 2021.

Toxic Air Contaminants

Concentrations of toxic air contaminants (TACs) are also used as indicators of air quality conditions. TACs are defined as air pollutants 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 very 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). For those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which some adverse health impacts are not expected to occur. This contrasts with the criteria pollutants such as nitrogen dioxide and carbon dioxide for which acceptable levels of exposure can be determined and for which the State and federal governments have set ambient air quality standards.

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, typically 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 acceptable reference exposure levels.

To date, the California Air Resources Board (ARB) has designated nearly 200 compounds as TACs. The ARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risk from TACs can be attributed to a relatively few compounds, the most important being diesel particulate matter (DPM) from diesel-fueled engines. Common TACs of national and California concern include DPM, reactive organic gases (ROG), benzene, asbestos, hydrogen sulfide, sulfates, visibility-reducing particulates, vinyl chloride, and lead. Table 3.2-2 provides a summary of the types, sources, and effects of TACs of national and California concern.

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,	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	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

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
	which consists of compounds such as hydrocarbons and their derivatives, and polycyclic aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust.	electrical generators, and various pieces of stationary construction equipment.	those suffering from respiratory problems. Human 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.
ROGs	ROGs, or volatile organic compounds (VOC), 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 ROGs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of ROGs are from combustion and fuel evaporation. A reduction in ROG emissions reduces certain chemical reactions that contribute to the formulation of ozone. ROGs 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 ROGs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of ROGs 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 ROGs have been classified as TACs.
Benzene	Benzene is a ROG. 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 a number of 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	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-

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
	most common types of asbestos are chrysotile, amosite, and crocidolite.		cancerous 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.	(a) Decrease in ventilatory function; (b) aggravation of asthmatic symptoms; (c) aggravation of cardio-pulmonary disease; (d) vegetation damage; (e) degradation of visibility; (f) 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: reduced lung function; chronic bronchitis; changes in lung morphology; death.

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
Vinyl Chloride	Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, the ARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.	Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and 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.	Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as 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 April 1, 2021.

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 April 1, 2021.

National Archives and Records Administration. 2009. Part II, Environmental Protection Agency. 40 CFR 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 April 1, 2021.

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 April 1, 2021.

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 April 1, 2021.

South Coast Air Quality Management District (SCAQMD). 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 April 1, 2021.

United States Environmental Protection Agency (EPA). 2016. Nitrogen Dioxide (NO2) Pollution. Basic Information about NO2. Website: https://www.epa.gov/no2-pollution/basic-information-about-no2#What%20is%20NO2. Accessed April 1, 2021.

United States Environmental Protection Agency (EPA). 2020. Particulate Matter (PM) Pollution. Health and Environmental Effects of Particulate Matter (PM). Website: https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm. Accessed April 1, 2021.

United States Environmental Protection Agency (EPA). 2020. Health Effects Notebook for Hazardous Air Pollutants.

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
Website: www.epa.gov/ttn/atw/hlthef/hapindex.html. Accessed April 1, 2021. 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 April 1, 2021. 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 April 1, 2021.			

Community Risk

To reduce exposure to TACs, the ARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) to provide guidance regarding the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when siting sensitive receptors near existing pollution sources. The ARB's recommendations were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that proximity substantially increases exposure and the potential for adverse health effects. Three carcinogenic TACs constitute the majority of the known health risks from motor vehicle traffic—DPM from trucks and benzene and 1,3-butadiene from passenger vehicles. ARB recommendations are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following ARB minimum distance separations.

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 with jurisdiction for regulating air quality within the nine county SFBAAB, 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 identified 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 air quality standards for ROGs, benzene, or DPM.

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

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 ppm (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
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 part per billion (ppb). The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[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

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]

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 the implementation of 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 of 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 April 1, 2021.

Ambient air pollutant concentrations in the SFBAAB are measured at air quality monitoring stations operated by the ARB and BAAQMD. In general, the SFBAAB 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. The purpose of these designations is to 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 where there is not enough 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 3-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

The current attainment designations for the SFBAAB are shown in Table 3.2-4. The SFBAAB 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

Pollutant	State Status	National Status
Visibility-reducing Particles	Unclassified	N/A
Lead	N/A	Attainment

Notes: N/A = Not Available.
Source: Bay Area Air Quality Management District (BAAQMD). 2017. Air Quality Standards and Attainment Status. January. Website: http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status. Accessed March 17, 2021.

Air Quality Index

The health impacts of the various air pollutants of concern can be presented in a number of 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.

Air Quality Index/ 8-hour Ozone Concentration	Health Effects Description
AQI—151–200—Unhealthy Concentration 86–105 ppb	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
	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 Concentration 106–200 ppb	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
	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 March 17, 2021.	

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 pollution concentrations near the project area.

Air Pollution 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 to be 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 be exposed 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, and senior-care facilities.

Project Vicinity

The project site is surrounded by existing industrial uses to the west, north, and east of the project site. The closest off-site air pollution sensitive receptors in the vicinity of the project site include Verde Elementary School and single-family homes to the south of the project site. Specifically, the Verde Elementary School is located adjacent to the project site's southern boundary, while the closest occupied residences are located approximately 600 feet to the south of the project site.

Project Site

The project site is currently vacant of tenants and does not contain sensitive receptors.

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of project site have been documented by measurements made by the BAAQMD. The San Pablo-Rumrill Boulevard Station is the closest air quality monitoring station to the project site. Data from this monitoring station is summarized below in Table 3.2-6. The federal $PM_{2.5}$ standard has been exceeded several times in the last 5 years. The State and federal CO, O_3, PM_{10}, and NO_2 standards have not been exceeded in the last 5 years in the project vicinity.

Table 3.2-6: Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2014	2015	2016	2017	2018
Ozone (O_3)					
State 1-hour ≥ 0.09 ppm	0	0	0	3	0
State 8-hours ≥ 0.07 ppm	0	0	2	2	0
Federal 8-hours > 0.075 ppm	0	0	0	1	0
Maximum 1-hour Concentration (ppm)	0.075	0.084	0.094	0.104	0.061
Maximum 8-hour Concentration (ppm)	0.055	0.062	0.049	0.080	0.052
Carbon Monoxide (CO)					
State 8-hours > 9.0 ppm	*	*	*	*	*
Federal 8-hours ≥ 9.0 ppm	*	*	*	*	*
Maximum 8-hours Concentration (ppm)	*	*	*	*	*
Nitrogen Dioxide (NO_2)					
State 1-hour ≥ 0.18 (ppm)	0	0	0	0	0
Maximum 1-hour Concentration (ppb)	0.0516	0.0459	0.0392	0.0476	0.0600

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2014	2015	2016	2017	2018
Coarse Particulates (PM_{10})					
State 24-hours > 50 µg/m^3	0	0	0	4	2
Federal 24-hours > 150 µg/m^3	0	0	0	0	1
Maximum 24-hours Concentration (µg/m^3)	44.3	43.0	33.0	95.0	191.1
Fine Particulates ($PM_{2.5}$)					
Federal 24-hours > 35 µg/m^3	1	0	0	9	14
Maximum 24-hours Concentration (µg/m^3)	38.2	33.2	19.5	71.2	195.4

Notes:
ppm = parts per million
ppb = parts per billion
µg/m^3 = or micrograms per cubic meter
* = insufficient date
Data from the San Pablo-Rumrill Boulevard Station.
Source: California Air Resources Board (ARB). 2020. Air Pollution Data Monitoring Cards (2014, 2015, 2016, 2017, and 2018). Website: http://www.arb.ca.gov/adam/topfour/topfour1.php.California Climate Action Team.
2006, March. Climate Action Team Report to Governor Schwarzenegger and the Legislature. Accessed March 9, 2021.

Existing Air Pollutant Emissions

Project Site Vicinity

The primary sources of air pollutants (both criteria air pollutant and TACs) in the project vicinity are the building-related energy use, vehicle traffic, and stationary source equipment associated with nearby industrial warehouses. In addition, other sources of emissions include motor vehicle related trips, space and water heating, landscape maintenance, and consumer products from nearby residential uses and Verde Elementary School.

Project Site

The project site is currently vacant of tenants and does not contain existing sources of air pollutant emissions.

CalEnviroScreen 3.0

The California Communities Environmental Health Screening Tool (CalEnviroScreen) is a mapping tool developed by the California Office of Environmental Health Hazard Assessment (OEHHA) on behalf of the California Environmental Protection Agency (Cal/EPA). It identifies California communities by census tract that are disproportionately burdened by and vulnerable to multiple sources of pollution.[4] CalEnviroScreen 3.0 is the latest version and was released in January 2017. As shown in

[4] Office of Environmental Health Hazard Assessment (OEHHA). 2018b, June 28. CalEnviroScreen 3.0 (Updated June 2018). Website: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30. Accessed on March 17, 2021.

Figure 3 (Appendix B), *Pollution Burden*, according to the CalEnviroScreen 3.0, the project site is in a census track that ranks in the 70th to 80th percentile (77th percentile) for pollution burden. This metric represents the potential exposures to pollutants and the adverse environmental conditions caused by pollution. Additionally, as shown in Figure 4 (Appendix B), *Diesel Particular Matter*, the project site is in an area that ranks in the 80th to 90th percentile (84th percentile) for DPM emissions. Overall, as shown in Figure 5 (Appendix B), *CalEnviroScreen 3.0 Score*, the area ranks in the 90th to 95th percentile (94th percentile) for the CalEnviroScreen 3.0 score, which measures the relative pollution burdens and vulnerabilities in one census tract compared to others.[5]

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases. Residential areas are also considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent since the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the population.

Existing sensitive receptors proximate to the project site include Verde Elementary School to the south along DaVilla Street. Other nearby receptors include the surrounding single-family residences farther to the south, across Wildcat Creek.

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 PM, 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.[6] The federal standards are called NAAQS. The air quality standards provide benchmarks

[5] California Office of Environmental Health Hazard Assessment (OEHHA). 2018, June 28. CalEnviroScreen 3.0 (Updated June 2018). Website: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30. Accessed on March 17, 2021.

[6] United States Environmental Protection Agency (EPA). 2017. Clean Air Act Requirements and History. Website: https://www.epa.gov/clean-air-act-overview/clean-air-act-requirements-and-history. Accessed April 1, 2021.

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 standards. The SIP for the State of California is administered by the ARB, which has overall responsibility for Statewide air quality maintenance and air pollution prevention. 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 CAA will also demonstrate consistency with the CCAA.

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, the 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 both criteria pollutants and greenhouse gas (GHG) emissions for new passenger vehicles.[7]

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.[8]

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 5 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).

The 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.[9]

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.

---

[7] California Air Resources Board (ARB). 2021. California's Greenhouse Gas Vehicle Emission Standards under Assembly Bill 1493 of 2002 (Pavley). Website: http://www.arb.ca.gov/cc/ccms/ccms.htm. Accessed April 1, 2021.

[8] California Air Resources Board (ARB). 2021. The California Almanac of Air Quality and Emissions—2013 Edition. Website: http://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm. Accessed April 1, 2021.

[9] California Air Resources Board (ARB). 2014. FINAL REGULATION ORDER. Title 13, California Code of Regulations. Division 3: Air Resources Board. Chapter 1: Motor Vehicle Pollution Control Devices. Website: https://ww3.arb.ca.gov/msprog/onrdiesel/documents/tbfinalreg.pdf?_ga=2.106485507.1633282906.1617298673-611272733.1590599157. Accessed April 1, 2021.

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 application of Best Management Practices (BMPs) to control fugitive dust in areas known to have naturally occurring asbestos and requires notification to the local air district prior to commencement of ground-disturbing activities. The measure establishes specific testing, notification and engineering controls prior to 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 prior to 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.

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.[10]

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.

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, the BAAQMD administers the Carl Moyer Program, which established guidelines and criteria for the funding of emissions reduction projects and 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.[11]

Assembly Bill 617

In July of 2017, Governor Brown signed AB 617 to develop a new community-focused program to reduce exposure more effectively to air pollution and preserve public health in environmental justice communities. AB 617 directs the ARB and all local air districts to take measures to protect communities disproportionally impacted by air pollution through monitoring and implementing air pollution control strategies. In 2018, the Richmond-San Pablo community, which includes North Richmond and the project site, was selected by the ARB for a community air monitoring program in Year 1 of the AB 617 program. Subsequently, in 2019, the Richmond-San Pablo community was selected for a Community Emissions Reduction Program (CERP) in Year 2 of the program. The BAAQMD is required to prepare a CERP and implement enhanced and more robust community air monitoring, accelerated retrofitting of pollution controls on facilities, and increased fines. The Richmond-San Pablo CERP is currently in development with a draft anticipated by late summer or early fall of 2021. The final draft of the AB 617 Richmond-San Pablo Community Air Monitoring Plan was released on July 15, 2020.[12]

---

[10] 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. Accessed March 29, 2021.

[11] California Air Resources Board (ARB). 2017. 2017 Carl Moyer Program Guidelines. Website: https://ww2.arb.ca.gov/sites/default/files/classic/msprog/moyer/guidelines/2017/2017_cmpgl.pdf. Accessed January 21, 2021.

[12] California Air Resources Board (ARB). 2020. EMFAC Off-Model Adjustment Factors for Carbon Dioxide (CO_2) Emissions to Account for the SAFE Vehicles Rule Part One and the Final Safe Rule. June 26. Website: https://ww3.arb.ca.gov/msei/emfac_off_model_co2_adjustment_factors_06262020-final.pdf. Accessed March 17, 2021.

California Air Resources Board's 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 must meet PM filter requirements beginning January 1, 2012. Lighter and older heavier trucks must 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.

The 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.[13]

Regional

BAAQMD California Environmental Quality Act 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 SFBAAB 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 SFBAAB, 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 2011 Guidelines. The BAAQMD's adoption of the 2010 thresholds of significance was later challenged in court. In an opinion issued on December 17, 2015, related to the BAAQMD CEQA Guidelines, the California Supreme Court held that CEQA does not generally require an analysis of the impacts of locating development in areas subject to environmental hazards unless the project would exacerbate existing environmental hazards. The California Supreme Court also found that 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. The California Supreme Court also 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, the BAAQMD published a new version of its CEQA Guidelines in May 2017. 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

[13] 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 September 22, 2021.

contamination where such an analysis is required by CEQA or where the agency has determined that such an analysis would assist in making a decision about the 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 implementation of the thresholds are for informational purposes only, to assist local agencies.

BAAQMD Particulate Matter Plan

To fulfill federal air quality planning requirements, the 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 woodburning. 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 SFBAAB.[14] Despite this EPA action, the SFBAAB will continue to be designated as nonattainment for the national 24-hour $PM_{2.5}$ standard until the 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.

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, the BAAQMD believes that it would be premature to submit a redesignation request and $PM_{2.5}$ maintenance plan at this time. Therefore, the 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 the BAAQMD's New Source Review regulation to address $PM_{2.5}$

BAAQMD 2017 Clean Air Plan

On May 2017, the BAAQMD adopted the final Bay Area 2017 Clean Air Plan. The 2017 Clean Air Plan was prepared by the BAAQMD 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

[14] United States Environmental Protection Agency (EPA). 2013. Federal Register. 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 March 29, 2021.

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; 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, the 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 Community Air Risk Evaluation Program

The BAAQMD's CARE program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor TACs in the Bay Area. In the latest report, DPM was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant contributors: 1,3-butadiene contributed 4 percent of the cancer risk weighted emissions, and benzene contributed 3 percent. Collectively, five compounds—DPM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All of these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). A 75 percent reduction in DPM was predicted between 2005 and 2015 when the inventory accounted for the ARB's diesel regulations. Overall, cancer risk from TACs dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for State diesel regulations and other reductions.[15]

[15] Bay Area Air Quality Management District (BAAQMD). 2014. Improving Air Quality & Health in Bay Area Communities, Community Air Risk Program (CARE) Retrospective and Path Forward (2004–2013). April. Website: https://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CARE%20Program/Documents/CARE_Retrospective_April2014.ashx. Accessed March 18, 2021.

Modeled cancer risks from TACs in 2005 were highest near sources of DPM: near core urban areas, along major roadways and freeways, and near maritime shipping terminals. The highest modeled risks were found east of San Francisco, near West Oakland, and at the Maritime Port of Oakland.[16] The BAAQMD has identified North Richmond as an impacted community under the CARE program.[17]

The major contributor to acute and chronic non-cancer health effects in the air basin is acrolein (C_3H_4O). Major sources of acrolein are on-road mobile sources and aircraft near freeways and commercial and military airports.[18] Currently the ARB does not have certified emission factors or an analytical test method for acrolein. Since the appropriate tools needed to implement and enforce acrolein emission limits are not available, the BAAQMD does not conduct health risk screening analysis for acrolein emissions.[19]

BAAQMD Regulations

In addition to the plans and programs described above, BAAQMD administers a number of specific regulations on various sources of pollutant emissions that would apply to development projects. A development project that would include features or activities governed by the following BAAQMD regulations would be required to obtain a Permit to Operate after the project is built and BAAQMD engineers confirm it complies with the applicable regulations, which would require annual renewal. BAAQMD regulations which typically apply to industrial development projects are described below.

Regulation 1, Rule 301 (Odorous Emissions)

The 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, the BAAQMD sends an investigator to interview the complainant and to locate the odor source if possible. The 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.

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

---

[16] Bay Area Air Quality Management District (BAAQMD). 2014. Improving Air Quality & Health in Bay Area Communities, Community Air Risk Program (CARE) Retrospective and Path Forward (2004–2013). April. Website: https://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CARE%20Program/Documents/CARE_Retrospective_April2014.ashx. Accessed March 18, 2021..

[17] Bay Area Air Quality Management District (BAAQMD). 2020. Community Air Risk Evaluation Program. https://www.baaqmd.gov/community-health/community-health-protection-program/communityair-risk-evaluation-care-program. Accessed March 18, 2021.

[18] Bay Area Air Quality Management District (BAAQMD). 2006. Community Air Risk Evaluation Program, Phase I Findings and Policy Recommendations Related to Toxic Air Contaminants in the San Francisco Bay Area.

[19] Bay Area Air Quality Management District (BAAQMD). 2010. BAAQMD Air Toxics NSR Program, Health Risk Screening Analysis (HRSA) Guidelines. January. Website: https://www.baaqmd.gov/~/media/Files/Engineering/Air%20Toxics%20Programs/hrsa_guidelines.ashx. Accessed March 22, 2021.

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.[20] Although emergency generators are intended to be used only during periods of power outages, monthly testing of each generator is required; however, the 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, the 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 Bet 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 the 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 7, Odorous Substances

BAAQMD's Regulation 7, Odorous Substances, 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's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance.

Regulation 8, Rule 3 (Architectural Coatings)

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

[20] 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 April 1, 2021.

Regulation 8, Rule 15 (Emulsified and Liquid Asphalts)

Although this rule does not directly apply to the 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, the 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, the 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 have the potential to generate emissions of airborne asbestos are required to comply with the appropriate provisions of this regulation.

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 a number of persons. Regulation 7 specifies limits for the discharge of odorous substances where the 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 4 parts of odor-free air and specifies maximum limits on the emission of certain odorous compounds.

Finally, the 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 that 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

On July 18, 2013, ABAG and the MTC approved the Plan Bay Area. 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. 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.[21] Assumptions for land use development used are taken

[21] Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC). 2013. Plan Bay Area. Website: https://www.planbayarea.org/previous-plan/plan-bay-area. Accessed April 1, 2021.

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. The Plan Bay Area 2040 was adopted July 2017 and updates Plan Bay Area.

Plan Bay Area 2040, published by the MTC and ABAG, is a long-range integrated transportation and land use/housing strategy through 2040 for the Bay Area. Plan Bay Area 2040 functions as the sustainable communities' strategy mandated by Senate Bill (SB) 375. As a regional land use plan, Plan Bay Area 2040 aims to reduce per capita GHG emissions through the promotion of more compact, mixed-use residential and commercial neighborhoods located near transit. Plan Bay Area 2040 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.

Contra Costa County

Contra Costa Transportation Commission

The Contra Costa Transportation Authority (CCTA) is the designated congestion management agency for the County. The CCTA's Congestion Management Plan (CMP) includes traffic level-of-service standards for State highways and principal arterials; multimodal performance measures to evaluate current and future systems; a 7-year capital program of projects to maintain or improve the performance of the system or mitigate the regional impacts of land use projects; a program to analyze the impacts of land use decisions; and a travel demand element that promotes transportation alternatives to the single-occupant vehicle.[22]

Pursuant to the EPA's transportation conformity regulations and the Bay Area Conformity State Implementation Plan (also known as the Bay Area Air Quality Conformity Protocol), the CMP is required to be consistent with the MTC planning process, including regional goals, policies, and projects for the Regional Transportation Improvement Program (RTIP). The MTC cannot approve any transportation plan, program, or project unless these activities conform to the State Implementation Plan. The CMP legislation also requires each congestion management agency to prepare and maintain a computerized travel demand model, including a land use database. To meet this requirement, CCTA has developed and maintains a countywide model that runs using TransCAD® software. In 2010, CCTA undertook a comprehensive update of its land use database, consistent with the ABAG "Current Regional Plans" (also known as "Sustainable Communities Strategy Base Case") land use allocation, and in 2019 completed an update of the model with the adopted Plan Bay Area 2040 land use forecasts (Projections 2017) for use in the Transportation Expenditure Plan, the Action Plans for Routes of Regional Significance, and other planning efforts.[23]

[22] Contra Costa County Transportation Authority (CCTA). 2019. Contra Costa Congestion Management Program. Website: https://ccta.net/2018/10/17/congestion-management/. Accessed May 8, 2021.
[23] Ibid.

- The federal CAA requires that federal transportation plans be prepared for regions in nonattainment of the federal Ambient Air Quality Standards (AAQS). The CCTA provides county-level input to MTC during preparation of the Regional Transportation Plan (RTP). Plan Bay Area 2040 was adopted on July 26, 2017. Plan Bay Area was prepared by MTC and ABAG. It incorporates the region's Sustainable Communities Strategy (SCS) pursuant to SB 375.[24]

Contra Costa County General Plan

The Contra Costa County General Plan (General Plan) establishes goals, objectives, and policies associated with air quality. Those goals and policies that are relevant to this analysis are listed below.

Conservation Element

Goal 8-K To encourage the use of renewable resources where they are compatible with the maintenance of environmental quality.

Goal 8-L To reduce energy use in the County to avoid risks of air pollution and energy shortages which could prevent orderly development.

Goal 8-AA To meet Federal Air Quality Standards for all air pollutants.

Goal 8-AB To continue to support Federal, State and regional efforts to reduce air pollution in order to protect human and environmental health.

Goal 8-AC To restore air quality in the area to a more healthful level.

Goal 8-AD To reduce the percentage of Average Daily Traffic (ADT) trips occurring at peak-hours.

Policies

Policy 8-98 Development and roadway improvements shall be phased to avoid congestion.

Policy 8-101 A safe, convenient and effective bicycle and trail system shall be created and maintained to encourage increased bicycle use and walking as alternatives to driving.

Policy 8-102 A safe and convenient pedestrian system shall be created and maintained in order to encourage walking as an alternative to driving.

Policy 8-107 New housing in infill and peripheral areas which are adjacent to existing residential development shall be encouraged.

[24] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2017, March. Plan Bay Area 2040 Plan.

Policy 8-113 New commercial and industrial projects exceeding 10,000 square feet of gross floor area shall incorporate measures to reduce or eliminate otherwise preventable air quality impacts and greenhouse gas (GHG) emissions. These measures may include, but are not limited to, limiting unnecessary truck and equipment idling, reducing on-site energy consumption, increasing on-site energy generation, reducing fugitive dust emissions, and contributing toward development of renewable energy projects in impacted communities.

Transportation and Circulation Element

Goal 5-D To maintain and improve air quality above air quality standards.

Goal 5-I To encourage use of transit.

Goal 5-J To reduce single-occupant auto commuting and encourage walking and bicycling.

Goal 5-L To reduce GHG emissions from transportation sources through provision of transit, bicycle, and pedestrian facilities.

Policies

Policy 5-3 Transportation facilities serving new urban development shall be linked to and compatible with existing and planned roads, bicycle facilities, pedestrian facilities and pathways of adjoining areas, and such facilities shall use presently available public and semi-public rights of way where feasible.

Policy 5-23 All efforts to develop alternative transportation systems to reduce peak period traffic congestion shall be encouraged.

Policy 5-24 Use of alternative forms of transportation, such as transit, bike and pedestrian modes, shall be encouraged in order to provide basic accessibility to those without access to a personal automobile and to help minimize automobile congestion and air pollution.

Policy 5-25 Improvement of public transit shall be encouraged to provide for increased use of local, commuter and intercity public transportation.

Implementation Measures

Implementation Measure 8-dn

Consistent with the uses and ranges of density specified in [the General Plan], particularly those in the Land Use Element and the Growth Management Element, encourage development that would reduce long distance commuting, positively affect the desired jobs/housing balance or promote alternative forms of transportation.

3.2.4 - Impacts and Mitigation Measures

Significance Criteria

According to the CEQA Guidelines Appendix G Environmental Checklist, to determine whether impacts related to air quality are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

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?

BAAQMD Significance Criteria

The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air 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.

In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Guidelines. These thresholds are designed to establish the level at which the District believed air pollution emissions would cause significant environmental impacts under CEQA. The updated BAAQMD CEQA Air Quality Guidelines were amended in June 2011 to include a risk and hazards threshold for new receptors and modified procedures for assessing impacts related to risk and hazard impacts. However, this later amendment regarding risk and hazards was the subject of the December 17, 2015, California Supreme Court decision (*California Building Industry Association v BAAQMD (2015) 62 Cal.4th 369*), which clarified that CEQA generally does not require an evaluation of impacts of the environment on a project's future users or residents. The California Supreme Court also found that 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. Additionally, it also held that public agencies remain free to conduct this analysis regardless of whether it is required by CEQA. To account for these updates, the BAAQMD published a new version of the Guidelines dated May 2017, which includes revisions made to address the Supreme Court's opinion.[25] This latest version of the BAAQMD CEQA Guidelines was used to prepare the analysis in this Draft EIR.

[25] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed March 17, 2021.

Regional Significance Criteria

The BAAQMD's criteria for regional significance for projects that exceed the screening thresholds are shown in Table 3.2-7. Criteria for both the construction and operational phases of the project are shown.

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

Pollutant	Construction Phase	Operational Phase	
	Average DailyEmissions (pounds/day)	Average DailyEmissions (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 gas
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) 2017. May. California Environmental Quality Act Air Quality Guidelines.

If a project were to exceed the emissions in Table 3.2-7, emissions would cumulatively contribute to the nonattainment status and would contribute to elevating health effects associated with these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with PM 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 in Table 3.2-7, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment—since mass emissions are not correlated with concentrations of emissions—or how many additional individuals in the air basin would be affected by the health effects cited above.

The BAAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of emissions in the Air Basin, and at the present time, it has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health, which would allow the lead agency to reasonably evaluate how the project's air quality impacts could cause any health impacts, as required by *Sierra Club v. County of Fresno (Friant Ranch, L.P.) (2018) 6 Cal.5th 502,* Case No. S21978. Ozone concentrations are dependent upon a variety of 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 in relation to the National AAQS and California AAQS, 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 AAQS. However, if a project within the BAAQMD exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until the attainment standards are met in the Air Basin.

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; and
- 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 California AAQS for CO, which is 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average). However, with the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology, the SFBAAB is in attainment of the California and National AAQS, and CO concentrations in the SFBAAB have steadily declined. Because CO concentrations have improved, the 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 RTP, 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 intersection 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).[26]

[26] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed March 22, 2021.

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.[27] Construction-related TAC and $PM_{2.5}$ impacts should be addressed on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and proximity to off-site receptors, as applicable.[28]
- The proposed project involves 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 the County 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 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) hazard index 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 cumulative considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from

[27] Bay Area Air Quality Management District (BAAQMD). 2010. Air Toxics NSR Program, Health Risk Screening Analysis Guidelines. Website: https://www.baaqmd.gov/~/media/Files/Engineering/Air%20Toxics%20Programs/hrsa_guidelines.ashx. Accessed March 22, 2021.

[28] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed March 22, 2021.

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 hazard index (from all local sources) greater than 10.0.
- Exceeds 0.8 µg/m^3 annual average $PM_{2.5}$.

In February 2015, the OEHHA adopted new health risk assessment guidance that includes several efforts to be more protective of children's health. These updated procedures include the use of age sensitivity factors to account for the higher sensitivity of infants and young children to cancer-causing chemicals, and age-specific breathing rates.[29]

Odors

BAAQMD's thresholds for odors are qualitative based on BAAQMD's 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's Rule 1-301, the 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.[30]

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

[29] Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments. February. Website: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf. Accessed March 17, 2021.

[30] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed March 22, 2021.

Land Use/Type of Operation	Project Screening Distance
Asphalt Batch Plant	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile
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 mile
Source: Bay Area Air Quality Management District (BAAQMD) 2017.	

Approach to Analysis

Emission factors represent the emission rate of a pollutant over a given time or activity; for example, grams of NO_X per Vehicle Mile 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 are 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 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 2016.3.2 was developed in collaboration with the South Coast Air Quality Management District (SCAQMD) 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 a variety of land uses.

The modeling follows BAAQMD guidance where applicable from its CEQA Air Quality Guidelines. The models used in this analysis are summarized as follows:

- Construction criteria pollutant and precursor emissions: CalEEMod, Version 2016.3.2
- Operational criteria pollutant and precursor emissions: CalEEMod, Version 2016.3.2
- Construction TAC emission air dispersion assessment: EPA AERMOD dispersion model, Version 18081

The following criteria air pollutants and precursors are assessed in this analysis:

- Reactive organic gases (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 during the photochemical reactions of the ozone precursors.

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 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 $PM_{2.5}$).

Schedule

Construction emissions associated with the proposed project are based on the construction schedule and equipment provided by the project applicant as shown in Table 3.2-9. Modeling also includes 397 tons of building and asphalt demolition haul, approximately 100,000 cubic yards of soil import, and 2,000 cubic yards of soil export. Average daily emissions from construction activities are based on the annual construction emissions starting November 2020 through December 2021 divided by the total number of active construction days (285 workdays). It should be noted that this schedule allows for analysis of a worst-case scenario as, if the construction schedule moves to later years, construction fuel consumption will likely decrease because of improvements in technology and more stringent regulatory requirements as older, less fuel-efficient equipment is gradually replaced by newer and more fuel-efficient equipment.

Table 3.2-9: Construction Schedule and Equipment Assumptions

Construction Activity	Schedule	Equipment
Demolition and Debris Haul	23 workdays: November 2020—December 2020	one concrete/industrial saw, three excavators, two rubber-tired dozers, and one water truck
Soil Import	45 workdays: November 2020—January 2021	one excavator, one tractor/load/backhoe, and one water truck
Site Preparation and Soil Export	22 workdays: December 2020—January 2021	three rubber-tired dozers, four tractor/loader/backhoe, and one water truck
Grading	44 workdays: January 2020—March 2020	two excavators, one grader, one rubber-tired dozer, two scrapers, two tractor/loader/backhoes, and one water truck

Construction Activity	Schedule	Equipment
Building Construction	196 workdays: March 2020—December 2021	one crane, three tractor/loader/backhoes, one generator set, three forklifts, and one welder
Paving	10 workdays: November 2021—December 2021	two pavers, two paving equipment, and two rollers
Architectural Coating	10 workdays: November 2021—December 2021	one air compressor

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 were manufactured after 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 miles traveled 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 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 provided in the Transportation Impact Assessment (TIA) prepared by Fehr and Peers (see Appendix I). Per the VMT information provided, an average trip length of 20.53 miles per trip (mile/trip) is used for passenger vehicles and delivery vehicles, and an average trip length of 28.61 mile/trip is used for drayage trucks and heavy-duty trucks. The proposed project is estimated to generate up to 860 passenger vehicle trips per day and 240 heavy vehicle truck trips per day. For passenger vehicles, it is assumed that 75 percent would consist of light duty automobiles and 25

percent would be delivery vans and trucks. For heavy vehicles, it is assumed that 20 percent would be drayage trucks and 80 percent would be non-drayage heavy-duty trucks. The overall vehicle ratio is 81 percent light duty passenger vehicles, 13 percent delivery vehicles, and 6 percent heavy vehicles (i.e., drayage trucks and heavy-duty trucks).

CalEEMod is used to quantify mobile source emissions using derived vehicle emission rates based on vehicle emissions data obtained from the ARB EMFAC2017 Version 1.0.2 web database and adjusted based on methodology provided in Appendix A of the CalEEMod User's Guide.[31] Additionally, the emission rates for the light duty automobile (LDA), light duty truck 1 (LDT1), light duty truck 2 (LDT2), and medium duty vehicle (MDV) vehicle classes account for the SAFE adjustment factors released by the ARB.[32] The EMFAC2007 vehicle categories assigned to light duty passenger vehicles, delivery vehicles, drayage trucks, and heavy-duty trucks are based on the EMFAC vehicle categories and on information provided by the County, including the United States Department of Energy Vehicle Weight Classes and Categories matrix.[33] Zero-Emission Vehicles (ZEVs) are assumed to be electric vehicles. For purposes of this analysis, ZEVs would not generate running, idling, starting, and running loss emissions, but would generate PM emissions from brake wear and tire wear in addition to diurnal, resting loss, and heat soak emissions. The EMFAC2017 diurnal, resting loss, and heat soak emission rates for electric-powered LDA, LDT1, LDT2, and MDV vehicles are used for all other electric-powered vehicles.

The following provides further modeling details assumed and used for each vehicle category for the proposed project:

- Light Duty Passenger Vehicles
  - 75 percent of total passenger vehicle trips (i.e., 645 trips/day).
  - Average one-way trip length of 20.53 mile/trip.
  - Consists of the LDA and motorcycle (MCY) EMFAC2007 vehicle categories.
  - The fleet mix is based on the CalEEMod default fleet mix normalized to the overall vehicle ratio.
- Delivery Vehicles
  - 25 percent of total passenger vehicle trips (i.e., 215 trips/day).
  - Average one-way trip length of 20.53 mile/trip.
  - Consists of the LDT1, LDT2, MDV, LHD1, LHD2, and medium heavy-duty truck (MHDT) EMFAC2007 vehicle categories.
  - The fleet mix is based on the CalEEMod default fleet mix normalized to the overall vehicle ratio.

[31] California Air Pollution Control Officers Association (CAPCOA). 2017. California Emissions Estimator Model (CalEEMod). Version 2016.3.2. Prepared by: BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts.

[32] The standards set under the SAFE Rule are pending until resolution of the lawsuit filed by California and other parties against its implementation. Thus, incorporation of the ARB SAFE Rule adjustment factors provide conservative vehicle emission factors because the SAFE Rule would result in less stringent vehicle emissions standards compared to the previously adopted standards for passenger vehicle model years 2021 through 2025.

[33] United Stated Department of Energy (US Energy). 2020, August 15 (accessed). Vehicle Weight Classes and Categories. Website: https://afdc.energy.gov/data/10380. Accessed March 17, 2021.

- Drayage Trucks
  - 20 percent of total heavy vehicles vehicle trips (i.e., 48 trips/day).
  - Average one-way trip length of 28.61 mile/trip.
  - Consist of the heavy heavy-duty truck (HHDT) EMFAC2007 vehicle category. However, emissions data is based on the EMFAC2011 heavy heavy-duty diesel drayage truck (T7 POAK) vehicle category.
  - The fleet mix is based on the CalEEMod default fleet mix normalized to the overall vehicle ratio.
- Heavy-Duty Trucks
  - 80 percent of total heavy vehicles vehicle trips (i.e., 192 trips/day).
  - Average one-way trip length of 28.61 mile/trip.
  - Consist of and utilizes the emissions data for the HHDT EMFAC2007 vehicle category.
  - Emissions data obtained from EMFAC2017 are based on model year 2014 and newer trucks. The range of model years is from model year 2014 through the model year for each calendar year modeled (i.e., 2021, 2023, 2025, and 2027). The emissions data for the range of model years is used to calculate aggregated emission rates based on EMFAC methodology. The calculated aggregated emissions data is further processed based on CalEEMod methodology in converting EMFAC data for use in CalEEMod.[34]
  - The fleet mix is based on the CalEEMod default fleet mix normalized to the overall vehicle ratio.

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. Outdoor water use is based on water usage calculated from the "Water Budget Workbook for New and Rehabilitated Non-residential Landscapes." Indoor water consumption is based on CalEEMod default indoor water use rates.

Area Sources. Area and stationary sources are based on the CalEEMod defaults for use of consumer products and cleaning supplies.

Energy. Emissions from this sector are principally from use of natural gas for space and water heating at the proposed buildings. New buildings are assumed to comply with the 2019 Building Energy Efficiency Standards and are modeled to be 10.7 percent and 1 percent more energy efficient for electricity and natural gas, respectively, compared to the 2016 Building Energy Efficiency Standards.[35] Based on the default CalEEMod electricity rates adjusted to reflect the increased energy

[34] See Appendix A of the CalEEMod User's Guide.
[35] NORESCO. 2018, June 29. Impact Analysis: 2019 Update to California Energy Efficiency Standards for Residential and Non-Residential Buildings.

efficiency associated with the 2019 Building Energy Efficiency Standards, the proposed project would generate an electricity demand of 6,760,296 kilowatt-hour (kWh)/year. The proposed photovoltaic (PV) system is estimated to generate up to 8,083,000 kWh/year of renewable electricity. Thus, for purposes of this analysis, it is assumed 100 percent of the electricity demand for the proposed project would be provided by the PV system. The CO_2 intensity of electricity supplied by Pacific Gas and Electric Company (PG&E) is based on the year 2018 CO_2 intensity reported to the Climate Registry.[36] For year 2025, the PG&E CO_2 intensity is adjusted to account for the SB 100 Renewables Portfolio Standard (RPS) target of 44 percent by year 2024. For year 2027, the PG&E CO_2 intensity is adjusted to account for the SB 100 RPS target of 50 percent by year 2026.

Off-road Equipment. Per the Applicant, 12 forklifts and six yard trucks are modeled as electric-powered consistent. Emissions from forklifts are based on Contra Costa County year 2021 emissions data obtained from ARB OFFROAD2017 Version 1.0.1 web database for the Industrial-Forklifts vehicle class rated at 100 horsepower. Additionally, the forklifts are modeled to operate 12 hours per day per unit (hours/day/unit), 365 days per year.[37] Yard truck emissions are based on OFFROAD2017 emissions data for the Cargo Handling Equipment (CHE)-Rail Yard Tractor vehicle class rated at 175 horsepower. Each yard truck is modeled to operate 4 hours/day/unit and 365 days per year.[38,]

Construction- and Operation-related Toxic Air Contaminants

TACs are air pollutants in minuscule amounts in the air that, if a person is exposed to them, could increase the chances of experiencing health problems. 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.

The County assessed 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, or $PM_{2.5}$, pollution can be emitted directly or formed secondarily in the atmosphere. $PM_{2.5}$ health impacts are important because their size can be deposited deeply in the lungs causing respiratory effects. For purposes of this analysis, exhaust emissions of DPM, are represented as exhaust emissions of $PM_{2.5}$. Studies indicate that DPM poses the greatest health risk among airborne TACs. A 10-year research program conducted by the ARB demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a

[36] The Climate Registry. 2020. CRIS Public Reports: 2018 Emission Rates. Website: https://www.theclimateregistry.org/our-members/cris-public-reports/. Accessed April 1, 2021.

[37] In comparison, based on OFFROAD2017 data, the average daily hours in which a 100-horsepower Industrial – Forklift operates is 2.06 hours based on the reported 143,411 annual hours and total population of 191 units for Contra Costa County

[38] In comparison, based on OFFROAD2017 data, the average daily hours in which a 175-horsepower CHE – Rail Yard Tractor operates is 1.43 hours based on the reported 1,047 annual hours and total population of 2 units for Contra Costa County.

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 DPM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present.

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 the BAAQMD's CEQA Air Quality Guidelines, a project that involves the siting of a new odor source would consider the screening level distances and the complaint history of the odor sources, described below. Projects that would site a new odor source farther than the screening level distances provided in Table 3.2-8 would not likely result in a significant odor impact.

Impact Evaluation

Air Quality Management Plan Consistency

Impact AIR-1:	**The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.**

Impact Analysis

Construction

The BAAQMD is responsible for reducing emissions from area, stationary, and mobile sources in the SFBAAB 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 environmental efforts of the proposed project 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 regional emissions inventory for the SFBAAB is compiled by the BAAQMD. Regional population, housing, and employment projections developed by ABAG are based, in part, 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 vehicle miles traveled in the Bay Area. The 2017 Clean Air Plan strategy is based on projections from local general plans. Projects that are 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 demolish the existing buildings on-site and construct three new multitenant industrial buildings totaling approximately 555,510 square feet. The proposed project would include 72 truck bays, 522,709 square feet of industrial warehouse space, and 32,801 square

feet of office space as well as approximately 447 parking spaces for passenger vehicles and 246 spaces for trucks. The project site is in North Richmond and is zoned for heavy industry according to the General Plan. Thus, the proposed project would be consistent with the underlying general plan land use designation and would not have the potential to substantially affect housing, employment, and population projections in the region that are the basis of the 2017 Clean Air Plan projections.

Additionally, the net increase in regional emissions generated by the proposed project would not exceed the BAAQMD's emissions thresholds (see Impact AIR-2). These thresholds are established to identify projects that have the potential to generate a substantial amount of criteria air pollutants. Because the proposed project would not exceed these thresholds, the proposed project would not be considered by the BAAQMD to be a substantial emitter of criteria air pollutants. Furthermore, Table 3.2-11 identifies the control measures in the 2017 Clean Air Plan that are required by BAAQMD to reduce emissions for a wide range of both stationary and mobile sources. As shown in Table 3.2-10, the proposed project would not conflict with the plan or hinder BAAQMD from implementing the control measures in the 2017 Clean Air Plan. Overall, the proposed project would not conflict with or obstruct implementation of the 2017 Clean Air Plan and impacts would be less than significant.

Table 3.2-10: Consistency with 2017 Clean Air Plan Control Measures

Type	Measure Number/Title	Consistency Analysis
Stationary Source Control Measure	SS 1–Fluid Catalytic Cracking in Refineries SS 2–Equipment Leaks SS 3–Cooling Towers SS 4–Refinery Flares SS 5–Sulfur Recovery Units SS 6–Refinery Fuel Gas SS 7–Sulfuric Acid Plants SS 8–Sulfur Dioxide from Coke Calcining SS 9–Enhanced NSR Enforcement for Changes in Crude Slate SS 10–Petroleum Refining Emissions Tracking SS 11–Petroleum Refining Facility-Wide Emission Limits SS 12–Petroleum Refining Climate Impacts Limit SS 13–Oil and Gas Production, Processing and Storage SS 14–Methane from Capped Wells SS 15–Natural Gas Processing and Distribution SS 16–Basin-Wide Methane Strategy SS 17–GHG BACT Threshold SS 18–Basin-Wide Combustion Strategy SS 19–Portland Cement SS 20–Air Toxics Risk Cap and Reduction from Existing Facilities SS 21–New Source Review for Toxics SS 22–Stationary Gas Turbines SS 23–Biogas Flares SS 24–Sulfur Content Limits of Liquid Fuels	Stationary sources are regulated directly by the 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. Additionally, in the event 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 which would ensure consistency with the 2017 Clean Air Plan.

Type	Measure Number/Title	Consistency Analysis
	SS 25–Coatings, Solvents, Lubricants, Sealants and Adhesives SS 26–Surface Prep and Cleaning Solvent SS 27–Digital Printing SS 28–LPG, Propane, Butane SS 29–Asphaltic Concrete SS 30–Residential Fan Type Furnaces SS 31–General Particulate Matter Emission Limitation SS 32–Emergency Backup Generators SS 33–Commercial Cooking Equipment SS 34–Wood Smoke SS 35–PM from Bulk Material Storage, Handling and Transport, Including Coke and Coal SS 36–PM from Trackout SS 37–PM from Asphalt Operations SS 38–Fugitive Dust SS 39–Enhanced Air Quality Monitoring SS 40–Odors	
Transportation Control Measures	TR 1–Clean Air Teleworking Initiative TR 2–Trip Reduction Programs TR 3–Local and Regional Bus Service TR 4–Local and Regional Rail Service TR 5–Transit Efficiency and Use TR 6–Freeway and Arterial Operations TR 7–Safe Routes to Schools and Safe Routes to Transit TR 8–Ridesharing, Last-Mile Connection TR 9–Bicycle and Pedestrian Access and Facilities TR 10–Land Use Strategies TR 11–Value Pricing TR 12–Smart Driving TR 13–Parking Policies TR 14–Cars and Light Trucks TR 15–Public Outreach and Education TR 16–Indirect Source Review TR 17–Planes TR 18–Goods Movement TR 19–Medium and Heavy Duty Trucks TR 20–Ocean Going Vessels TR 21–Commercial Harbor Craft TR 22–Construction, Freight and Farming Equipment TR 23–Lawn and Garden Equipment	Transportation (TR) control measures are strategies to reduce vehicle trips, vehicle use, VMT, vehicle idling, and traffic congestion for the purpose of reducing motor vehicle emissions. Although most of the TR control measures are implemented at the regional level—that is, by MTC or Caltrans—the 2017 Clean Air Plan relies on local communities to assist with implementation of some measures. The proposed project would provide preferred parking for low emission and fuel-efficient vehicles. Electrical conduits would be provided in the parking lot to accommodate future electric vehicle parking spaces. Additionally, the conditions of approval require future tenants to obtain zero-emission vehicles and trucks for their fleets. They also require the property owner/tenant/lessee to ensure all on-site equipment and vehicles (e.g., yard hostlers, yard equipment, forklifts, yard trucks and tractors, and pallet jacks) used within the project site are zero emission from start of operations. Though the project is not adjacent to transit stations, CenterPoint would provide

Type	Measure Number/Title	Consistency Analysis
		other VMT-reducing measures, such as bicycle parking to encourage alternative forms of travel. 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	The Energy and Climate (EN) control measures are intended to reduce energy use as a means of reducing adverse air quality emissions. The proposed project would install a PV system that would provide 8,083,000 kWh/year of renewable electricity. Additionally, overall, the proposed buildings would comply with 2019 Building Energy Efficiency Standards' solar requirements and would be constructed to support a roof-mounted solar system. Compliance with the 2019 Building Energy Efficiency Standards would improve energy efficiency by 10.7 percent and 1 percent for electricity and natural gas, respectively, compared to the 2016 Building Energy Efficiency Standards. The proposed project would also be LEED™ certified and include insulated office spaces, warehouse motion-sensor lighting, and low-power-density warehouse lighting. Therefore, implementation of the proposed project would not conflict with these EN control measures.
Buildings Control Measures	BL 1–Green Buildings BL 2–Decarbonize Buildings BL 3–Market-Based Solutions BL 4–Urban Heat Island Mitigation	The Buildings (BL) control measures focus on working with local governments to facilitate adoption of best GHG emissions control practices and policies. As discussed above for the EN control measures, the proposed buildings would comply with 2019 Building Energy Efficiency Standards—i.e., constructed to support a roof-mounted solar system and achieving greater energy efficiency compared to the 2016

Type	Measure Number/Title	Consistency Analysis
		Building Energy Efficiency Standards. The proposed project would also be LEED™ certified and include insulated office spaces, warehouse motion-sensor lighting, and low-power-density warehouse lighting.
Agriculture ControlMeasures	AG 1–Agricultural Guidance and Leadership AG 2–Dairy Digesters AG 3–Enteric Fermentation AG 4–Livestock Waste	Agricultural (AG) practices in the Bay Area account for a small portion, roughly 1.5 percent, of the Bay Area GHG emissions inventory. The GHGs from agriculture include methane, nitrous oxide, and carbon dioxide. The proposed project would not involve any agricultural activities or operations.
Natural and WorkingLands Control Measures	NW 1–Carbon Sequestration in Rangelands NW 2–Urban Tree Planting NW 3–Carbon Sequestration in Wetlands	The control measures for the Natural and Working Lands (NW) sector focus on increasing carbon sequestration on rangelands and wetlands. The proposed project would include the planting of various ornamental and shade trees throughout the project site.
Waste Management Control Measures	WA 1–Landfills WA 2–Composting and Anaerobic Digesters WA 3–Green Waste Diversion WA 4–Recycling and Waste Reduction	The Waste Management (WA) control measures include strategies to increase waste diversion rates through efforts to reduce, reuse, and recycle. The proposed project would comply with AB 341, which requires mandatory commercial recycling for businesses that generate 4 cubic yards or more of commercial solid waste per week. Additionally, the proposed project would reduce construction waste by 75 percent and use 30 percent recycled content during construction of the proposed facility. Therefore, the proposed project would not conflict with these WA control measures.
Water Control Measures	WR 1–Limit GHGs from publicly owned treatment works (POTWs) WR 2–Support Water Conservation	The 2017 Clean Air Plan includes measures to reduce water use. The proposed project would include water efficiency measures required under CALGreen. In addition, the proposed project would be designed and built to attain LEED certification and would include water efficient indoor fixtures above and beyond

Type	Measure Number/Title	Consistency Analysis
		the requirements of CALGreen as well as water efficient landscaping outdoors.
Super GHG ControlMeasures	SL 1–Short-Lived Climate Pollutants SL 2–Guidance for Local Planners SL 3–GHG Monitoring and Emissions Measurements Network	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. The conditions of approval would require future tenants to obtain zero-emission vehicles and trucks for their fleets. They would also require the property owner/tenant/lessee to ensure that all on-site equipment and vehicles (e.g., yard hostlers, yard equipment, forklifts, yard trucks and tractors, and pallet jacks) used within the project site are zero emission from start of operations. These actions would contribute to reducing black carbon. Furthermore, the project would comply with AB 341, which mandates commercial recycling for businesses that generate 4 cubic yards or more of commercial solid waste per week, which could contribute to reducing methane by diverting waste from landfills.
Further Study ControlMeasures	FSM SS 1–Internal Combustion Engines FSM SS 2–Boilers, Steam Generator and Process Heaters FSM SS 3–GHG Reductions from Non-Cap-and-Trade Sources FSM SS 4–Methane Exemptions from Wastewater Regulation FSM SS 5–Controlling start-up, shutdown, maintenance, and malfunction (SSMM) Emissions FSM SS 6–Carbon Pollution Fee FSM SS 7–Vanishing Oils and Rust Inhibitors FSM SS 8–Dryers, Ovens and Kilns FSM SS 9–Omnibus Rulemaking to Achieve Continuous Improvement FSM BL 1–Space Heating FSM AG 1–Wineries	The majority of the Further Study Control Measures (FSM) apply to sources regulated directly by the BAAQMD. Because the BAAQMD is the implementing agency, any new stationery and area emission sources in the project site would be required to comply with these additional study control measures in the 2017 Clean Air Plan.

Type	Measure Number/Title	Consistency Analysis
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: Bay Area Air Quality Management District (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. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf. Accessed March 9, 2021.		

Level of Significance

Less than significant impact.

Cumulative Criteria Pollutant Emissions

Impact AIR-2: The proposed project could 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

Construction

Construction activities produce combustion emissions from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew. Demolition, site preparation, and grading activities produce fugitive dust emissions (PM_{10} and $PM_{2.5}$). Air pollutant emissions from construction activities on-site would vary daily as construction activity levels change. Construction activities associated with the proposed project would result in emissions of ROG, NO_X, CO, PM_{10}, and $PM_{2.5}$.

Construction Exhaust Emissions

Construction emissions are based on the preliminary construction schedule developed for the proposed project. The proposed project site would be developed in one development phase. Activities that would take place are demolition, hauling, site preparation, grading, building construction, paving, and architectural coating. Construction activities are assumed to occur from November 2020 to December 2021. To determine potential construction-related air quality impacts, criteria air pollutants generated by project-related construction activities are compared to the BAAQMD significance thresholds. Average daily emissions are based on the annual construction emissions divided by the total number of active construction days (285 days). Criteria air pollutant emissions from construction equipment exhaust are shown in Table 3.2-11.

Table 3.2-11: Construction-Related Criteria Air Pollutant Emissions Estimates

Year	Criteria Air Pollutants (tons/year)[1]					
	ROG	NO_x	Fugitive PM_{10} [2]	Exhaust PM_{10}	Fugitive $PM_{2.5}$ [2]	Exhaust $PM_{2.5}$
2020	< 1	3	< 1	< 1	< 1	< 1
2021	3	5	1	< 1	< 1	< 1
Total	4	9	1	< 1	< 1	< 1
	Criteria Air Pollutants (average pounds/day)[1]					
	ROG	NO_x	Fugitive PM_{10} [2]	Exhaust PM_{10}	Fugitive $PM_{2.5}$ [2]	Exhaust $PM_{2.5}$
Average Daily Construction Emissions (all activities)[3]	25	60	7	1	2	1
BAAQMD Average Daily Project-Level Thresholds	54	54	BMPs	82	BMPs	54
Exceeds Average Daily Threshold?	**No**	**Yes**	**N/A**	**No**	**N/A**	**No**

Notes:
BMP = Best Management Practices
N/A = Not Applicable
ROG = reactive organic gases
NO_X = 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
* Manual summation of emissions may not equal to the Total due to rounding.
[1] Construction phasing is based on the preliminary information provided by the applicant. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment and phasing for comparable projects.
[2] Includes fugitive dust control measures based on BAAQMD BMPs for fugitive dust control. Measures incorporated include watering disturbed areas a minimum of 2 times per day, reducing speed limit to 15 miles per hour (mph) on unpaved surfaces, application of non-toxic soil stabilizers, replacing ground cover, and street sweeping.
[3] Average daily emissions are based on the construction emissions divided by the total number of active construction days. The total number of active construction days is 285 workdays.
Source: CalEEMod Version 2016.3.2.

As shown in the Table 3.2-11, construction activities associated with the proposed project would exceed the BAAQMD's regional significance thresholds for NO_X. The primary source of NO_X emissions is exhaust from vehicles and construction equipment. Haul trips associated with earthwork would be a primary contributor in the generation of NO_X emissions. Since NO_X is a precursor to the formation of both O_3 and particulate matter (PM_{10} and $PM_{2.5}$), project-related emissions of NO_X would contribute to the O_3, PM_{10}, and $PM_{2.5}$ nonattainment designations of the Air Basin, a potentially significant impact. However, implementation of Mitigation Measure (MM) AIR-2a would require construction contractors to use Tier 4 off-road diesel-powered construction equipment, unless the applicant can demonstrate such equipment would not be available and maintain a list of operating equipment on the construction site. Additionally, MM AIR-2a would require project engineers to

clearly demonstrate Tier 4 construction equipment on project plans. As shown in Table 3.2-12, implementation of MM AIR-2a would reduce air pollutant emissions below the BAAQMD thresholds. Therefore, implementation of MM AIR-2a would ensure impacts related to construction exhaust emissions would be less than significant.

Fugitive Dust

Ground-disturbing activities would generate fugitive dust. Fugitive dust emissions are considered significant unless the proposed project implements the BAAQMD's BMPs for fugitive dust control during construction. PM_{10} is typically the most significant source of air pollution from the dust generated by construction. The amount of dust generated during construction would be highly variable and is dependent on the amount of material being demolished, the type of material, moisture content, and meteorological conditions. In the absence of the BAAQMD's BMPs for fugitive dust control, PM_{10} and $PM_{2.5}$ levels downwind of actively disturbed areas could possibly exceed State standards. As a result, construction impacts related to fugitive dust would be potentially significant. However, implementation of MM AIR-2b would require the project construction contractor to comply with the BAAQMD BMPs, such as watering construction areas twice daily to reduce dust generation and applying soil stabilizers, for reducing construction emissions of PM_{10} and $PM_{2.5}$. As shown in Table 3.2-12, implementation of MMs AIR-2a and AIR-2b would reduce NO_X and fugitive dust emissions below the BAAQMD thresholds. In addition, the proposed project would be required to comply with District Regulation 6, Rule 6, which prohibits trackout for construction sites. Therefore, implementation of MMs AIR-2a and AIR-2b and compliance with District Regulation 6, Rule 6 would reduce impacts related to project construction to less than significant levels.

Table 3.2-12: Construction-Related Criteria Air Pollutant Emissions Estimates With Mitigation Incorporated

Year	Criteria Air Pollutants (tons/year)[1,2]					
	ROG	NO_x	Fugitive PM_{10}[3]	Exhaust PM_{10}	Fugitive $PM_{2.5}$[3]	Exhaust $PM_{2.5}$
2020	< 1	3	< 1	< 1	< 1	< 1
2021	3	5	1	< 1	< 1	< 1
Total	3	7	1	< 1	< 1	< 1
	Criteria Air Pollutants (average pounds/day)[1,2]					
	ROG	NO_x	Fugitive PM_{10}[2]	Exhaust PM_{10}	Fugitive $PM_{2.5}$[2]	Exhaust $PM_{2.5}$
Average Daily Construction Emissions (all activities)[4]	24	49	7	< 1	2	< 1
BAAQMD Average Daily Project-Level Threshold	54	54	BMPs	82	BMPs	54
Exceeds Average Daily Threshold	**No**	**No**	**N/A**	**No**	**N/A**	**No**

Year	Criteria Air Pollutants (tons/year)[1,2]					
	ROG	NO_x	Fugitive PM_{10}[3]	Exhaust PM_{10}	Fugitive $PM_{2.5}$[3]	Exhaust $PM_{2.5}$

Notes:
BAAQMD = Bay Area Air Quality Management District
BMP = Best Management Practices
N/A = Not Applicable
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
ROG = reactive organic gas
* Manual summation of emissions may not equal to the Total due to rounding.
1 Construction phasing is based on the preliminary information provided by the applicant. Where specific information regarding project-related construction activities wasnot available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment and phasing for comparable projects.
2 Incorporates MM AIR-1, which requires off-road construction equipment of 50 horsepower or more used for site preparation, grading, andbuilding construction activities to comply with Tier 4 Interim emissions standards.
3 Includes fugitive dust control measures based on BAAQMD BMPs and as required under MM AIR-1 for fugitive dust control. Measures incorporated include watering disturbed areas a minimum of two times per day, reducing speed limit to 15 mph on unpaved surfaces,application of non-toxic soil stabilizers, replacing ground cover, and street sweeping.
4 Average daily emissions are based on the construction emissions divided by the total number of active construction days. The total number of active construction days is 285 workdays.
Source: CalEEMod Version 2016.3.2.

Operation

Long-term air pollutant emissions generated by an industrial development are typically associated with the burning of fossil fuels in cars and trucks (mobile source); natural gas use for space and water heating (energy source); and area sources such as architectural coatings, and landscape equipment. The primary source of long-term criteria air pollutant emissions would be project-generated vehicle trips. The proposed project would generate a total of 1,100 ADTs consisting of 645 light duty passenger vehicle ADTs, 215 delivery vehicle ADTs, 48 drayage truck ADTs, and 192 heavy-duty truck ADTs.

As described in Chapter 2, Project Description, the proposed project has committed to an accelerated schedule for introduction of zero emission delivery vans, drayage vehicles, and heavy-duty trucks utilized at the project site. The operational criteria pollutant emissions analysis below shows the emissions that would be generated under this accelerated zero-emission vehicles scenario.

Project-related regional criteria air pollutant and GHG emissions are quantified for four scenarios (Scenarios 1 through 4). Each scenario includes four separate calendar years (2021, 2023, 2025, and 2027) and specific assumptions for off-road equipment used in daily operations, delivery vehicles, drayage trucks, and non-drayage heavy-duty trucks. Overall, the scenarios reflect the Operational Best Practices to reduce emissions and improve air quality as outlined in Section 2.3.4, Chapter 2, Project Description. For purposes of this analysis, Scenario 4 – Year 2021 is evaluated against the CEQA Appendix G thresholds. The operational regional criteria air pollutant and GHG emissions results of all other scenarios are provided in the Air Quality and Greenhouse Gas Emissions Technical Report prepared for the proposed project, contained in Appendix B.

Table 3.2-13, Operational Criteria Air Pollutants Emissions Forecast, identifies the criteria air pollutant emissions associated with operation of the proposed project. As shown in Table 3.2-13, operational emissions generated by the proposed project would not exceed BAAQMD daily or annual thresholds. Therefore, the proposed project would not contribute to the nonattainment designations of the Air Basin and impacts would be less than significant.

Table 3.2-13: Operational Criteria Air Pollutants Emissions Forecast

Source	Criteria Air Pollutants			
	ROG	NO_x	PM_{10}	$PM_{2.5}$
Project (Buildout Year 2021) Annual Emissions (Tons/Year)				
Area	3	< 1	< 1	< 1
Energy[1]	< 1	1	< 1	< 1
On-Road Mobile Sources (Passenger)[2]	< 1	< 1	2	< 1
On-Road Mobile Sources (Delivery Vehicles)[2,3]	< 1	0	1	< 1
On-Road Mobile Sources (Drayage)[2,4]	< 1	0	< 1	< 1
On-Road Mobile Sources (Heavy-Duty Trucks)[5,6]	< 1	5	1	< 1
Total	**3**	**6**	**3**	**1**
BAAQMD Annual Project-Level Threshold	10	10	15	10
Exceeds Average Daily Threshold?	**No**	**No**	**No**	**No**
Project (Buildout Year 2021) Average Daily Emissions (Pounds/Day)[7]				
Project Average Daily Emissions	17	35	18	5
BAAQMD Average Daily Project-Level Threshold	54	54	82	54
Exceeds Average Daily Threshold?	**No**	**No**	**No**	**No**

Notes:
BAAQMD = Bay Area Air Quality Management District
ROG = reactive organic gas
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
* Manual summation of emissions may not equal to the Total due to rounding.
[1] New buildings would be constructed to the 2019 Building Energy Efficiency Standards and are modeled to be 1 percent more energy efficient for natural gas, compared to the 2016 Building Energy Efficiency Standards. Source: NORESCO. 2018. June 29. Impact Analysis: 2019 Update to California Energy Efficiency Standards for Residential and Non-Residential Buildings.
[2] Based on calendar year 2021 aggregated emission rates derived from EMFAC2017 Version 1.0.2 emissions data and CalEEMod methodology.
[3] Assumes 33 percent of vehicles would be zero emission.
[4] Assumes 100 percent zero emission drayage trucks.
[5] Assumes 100 percent of trucks would be model year 2014 or newer.
[6] Based on model years 2014 through 2021 emission rates derived from EMFAC2017 Version 1.0.2 emissions data and CalEEMod methodology.
[7] Average daily emissions are based on the annual operational emissions divided by 365 days.
Source: CalEEMod Version 2016.3.2

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AIR-2a Construction Exhaust

The project applicant shall ensure, at minimum, the use of equipment that meets the United States Environmental Protection Agency's (EPA) Tier 4 Interim emissions standards for off-road diesel-powered construction equipment with more than 50 horsepower for all site preparation, grading, and building construction activities, unless it can be demonstrated, to the Contra Costa County Department of Conservation and Development's satisfaction, that such equipment is not available. Any emission control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by Tier 4 Interim emissions standards for a similarly sized engine, as defined by the California Air Resources Board (ARB) regulations.

Prior to the issuance of building or grading permits, the project applicant shall ensure that all construction (e.g., demolition and grading) plans clearly show the requirement for EPA Tier 4 Interim emissions standards for construction equipment over 50 horsepower for the specific activities stated above.

During construction, the project applicant shall ensure that a list of all operating equipment in use on the construction site is maintained on-site for verification by the Contra Costa County Department of Conservation and Development. The construction equipment list shall state the makes, models, Equipment Identification Numbers, and number of construction equipment on-site. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. Construction contractors shall also ensure that all nonessential idling of construction equipment is restricted to 5 minutes or less in compliance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9.

MM AIR-2b Fugitive Dust Control Measures

The project's construction contractor shall comply with the following Bay Area Air Quality Management District (BAAQMD) Best Management Practices (BMPs) for reducing construction emissions of PM_{10} and $PM_{2.5}$:

- Water all active construction areas at least twice daily, or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour (mph). Reclaimed water should be used whenever possible.

- To control dust, pave, apply water twice daily or as often as necessary, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
- Sweep daily with water sweepers (using reclaimed water if possible) or as often as needed, all paved access roads, parking areas, and staging areas at the construction site to control dust.
- Sweep public streets daily (with water sweepers using reclaimed water if possible) or as often as needed in the vicinity of the project site to keep streets free of visible soil material.
- Hydroseed or apply non-toxic soil stabilizers to inactive construction areas.
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (e.g., dirt, sand, etc.).
- Limit vehicle traffic speeds on unpaved roads to 15 mph.
- Replant vegetation in disturbed areas as quickly as possible.
- Install sandbags or other erosion control measures to prevent silt runoff from public roadways.

Level of Significance After Mitigation

Less than significant impact.

Sensitive Receptors Exposure to Toxic Air Contaminant Concentrations

Impact AIR-3:	**The proposed project would not expose sensitive receptors to substantial pollutant concentrations.**

Impact Analysis

The proposed project could expose sensitive receptors to elevated pollutant concentrations if it would cause or contribute 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.

Construction

Off-Site Community Risk and Hazards During Construction

The proposed project would elevate concentrations of TACs and $PM_{2.5}$ in the vicinity of sensitive land uses during construction activities. As shown in Figure 3 of the Health Risk Assessment (HRA) prepared for the proposed project (Appendix B), the nearest off-site sensitive receptors proximate to the project site include Verde Elementary School to the south and residences to the south along Verde Avenue and Fred Jackson Way. Construction activities would occur near these sensitive receptor locations. Consequently, a construction HRA of TACs and $PM_{2.5}$ was prepared (see Appendix B).

Sources evaluated in the HRA include off-road construction equipment and heavy-duty diesel trucks along the truck route based on the 13-month construction duration and off-road equipment list provided by the applicant. The EPA AERMOD air dispersion modeling program and the latest HRA guidance from OEHHA were used to estimate excess lifetime cancer risks, chronic non-cancer hazard indices, and the $PM_{2.5}$ maximum annual concentrations at the nearest sensitive receptors. Results of the analysis are shown in Table 3.2-14, Construction HRA Results.

Table 3.2-14: Construction HRA Results

Receptor	Project-level Risk		
	Cancer Risk (per million)	Chronic Hazards	$PM_{2.5}$ ($\mu g/m^3$)
Maximum Exposed Receptor–Verde Elementary School Student	0.8	0.03	0.09
Maximum Exposed Receptor–Verde Elementary School Staff	0.2	0.03	0.09
Maximum Exposed Off-site Resident	2.2	0.01	0.02
BAAQMD Threshold	10	1.0	0.30
Exceeds Threshold	**No**	**No**	**No**

Notes:
BAAQMD = Bay Area Air Quality Management District
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
$\mu g/m^3$ = micrograms per cubic meter
Source: Appendix B
Cancer risk calculated using 2015 OEHHA HRA guidance.

The results of the HRA are based on the maximum receptor concentration over a 13-month construction exposure period for off-site receptors. It was conservatively assumed that the receptors were outdoors 8 hours a day, 260 construction days per year and exposed to all of the daily construction emissions. Cancer risk from project-related construction emissions for the maximum exposed receptor at Verde Elementary School is estimated at 0.8 in a million for students and 0.2 in a million for adult staff, which would be below the 10 in one million significance threshold. Cancer risk for maximum exposed single-family residences is estimated at 2.2 in one million, which is also under the 10 in one million significance threshold. For noncarcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than 1 for off-site sensitive receptors. Therefore, chronic noncarcinogenic hazards are below the significance threshold.

The highest $PM_{2.5}$ annual concentration, which occurs at Verde Elementary School, would not exceed the BAAQMD significance threshold of 0.3 micrograms per cubic meter ($\mu g/m^3$). Therefore, the proposed project would not expose sensitive receptors to substantial concentrations of air pollutant emissions during construction.

Operation

Off-Site Community Risk and Hazards During Operation

Operation of the proposed project would generate TACs from diesel-fueled truck and delivery vehicle activity and $PM_{2.5}$ emissions from all trucks and delivery vehicles in proximity to the same nearby

sensitive receptors evaluated in the construction HRA (i.e., Verde Elementary School students and nearby residents). The full methodology and results of the operational HRA are provided under a separate technical report by PlaceWorks (Appendix B).

Operational emission sources evaluated in the HRA include the trucks and delivery vehicles traveling on-site over the ingress and egress driveways, idling at truck bays. The projected truck volumes and truck fleet mix were provided by Fehr and Peers. To account for the emission standards representative of the California fleet, the ARB has developed the EMFAC2017 emission factor model. EMFAC2017 was used to identify pollutant emission rates for DPM and $PM_{2.5}$. The EPA AERMOD Version 9.9.0 air dispersion modeling program and the ARB's Hotspots Analysis and Reporting Program (HARP2) Risk Assessment Stand-alone Tool Version 19044 were used to estimate excess lifetime cancer risks, chronic non-cancer hazard indices, and the $PM_{2.5}$ maximum annual concentrations at the nearest sensitive receptors. The results of the operational HRA are provided in Table 3.2-15.

Table 3.2-15: Operational HRA Results

Source	Cancer Risk (per million)			Chronic Hazard Index[1]	$PM_{2.5}$ ($\mu g/m^3$)[1]
	Staff	Students	Resident		
Trucks and Delivery Vehicles	0.06	0.11	2.5	0.001	0.005
BAAQMD Threshold	10	10	10	1.0	0.3
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**

Notes:
BAAQMD = Bay Area Air Quality Management District
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
$\mu g/m^3$ = micrograms per cubic meter
[1] Chronic Hazard Index value and $PM_{2.5}$ value for the maximum exposed residential receptor. Chronic hazard index values and $PM_{2.5}$ values at the maximum exposed s than at the residential receptor.
Source: PlaceWorks. 2021. 506 Brookside Drive Industrial Project Health Risk Assessment. January.

The calculated incremental cancer risks are 0.06 per million for adult school staff, 0.11 per million for students, and 2.5 per million for residents. Carcinogenic risks are all below the significance threshold value of 10 in a million for school staff, students, and residents. For noncarcinogenic effects, the chronic hazard index identified for each toxicological endpoint totaled less than one for all nearby sensitive receptors. Therefore, chronic noncarcinogenic hazards are below the significance threshold. Lastly, the highest $PM_{2.5}$ annual concentration at the maximum exposed receptor was 0.005 $\mu g/m^3$ and does not exceed the BAAQMD significance threshold of 0.3 $\mu g/m^3$.

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 existing individual stationary and mobile source within a 1,000-foot radius of the site.[39] The results of the

[39] Bay Area Air Quality Management District (BAAQMD). 2020. Community Air Risk Evaluation Program. Website: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program. Accessed March 18, 2021.

HRA from cumulative emission sources in the surrounding area are provided in Table 3.2-16. The cumulative health risk values are less than the BAAQMD threshold of 100 in a million for a lifetime cancer risk and less than the noncarcinogenic chronic hazard index of 10.0. Additionally, the $PM_{2.5}$ concentrations for all emission sources are below the cumulative BAAQMD significance threshold of 0.8 µg/m^3.

Table 3.2-16: Cumulative Analysis Results

Source	Cancer Risk (per million)	Chronic Hazard Index	Acute Hazard Index	$PM_{2.5}$ (µg/m^3)
Refined Modeling Values				
Project[1]	2.5	0.001	N/A	0.005
Screening Analysis Values				
West County Resource Recovery	0.001	< 0.001	< 0.001	0.35
R & K Industrial Products, Inc.	0.34	0.002	0.002	0.050
East Bay Municipal Utility District	0.62	0.001	0.001	0.001
Pick-n-Pull Auto Dismantlers-Richmond No. 12	0.04	< 0.001	< 0.001	n/a
Cumulative Total	3.5	0.003	0.003	0.41
BAAQMD Threshold	100	10.0	10.0	0.8
Exceeds Threshold?	**No**	**No**	**No**	**No**

Notes:
BAAQMD = Bay Area Air Quality Management District
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
µg/m^3 = micrograms per cubic meter
[1] BAAQMD Screening Level Cancer Risk Values for stationary and mobile sources are for 30-year residential exposures. Therefore, the 30-year year residential health exposure duration was used for the cumulative analysis.
Source: PlaceWorks. 2021. 506 Brookside Drive Industrial Project Health Risk Assessment. January.

Based on a comparison to the carcinogenic and noncarcinogenic thresholds established by OEHHA and the BAAQMD, hazardous air emissions generated from operation of the proposed project, when added to emissions from all the stationary and mobile sources within a 1,000-foot radius, are not anticipated to pose an actual or potential endangerment to residents. Therefore, the proposed project would not expose sensitive receptors to substantial concentrations of air pollutant emissions during operation.

CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. These pockets have the potential to exceed the State 1-hour standard of 20.0 ppm or the 8-hour standard of 9.0 ppm. Because CO is produced in the greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where

traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds.

Based on existing peak-hour turning movement counts taken at the busiest intersections studied in the TIA prepared for the proposed project, the highest existing peak-hour intersection traffic volume is 5,310 PM peak-hour vehicle trips at the intersection of Richmond Parkway and San Pablo Avenue.[40] The proposed project would generate 1,100 ADTs, which would be distributed throughout the various segments and intersections of the traffic study area. Under existing plus project and cumulative plus project conditions, the addition of project trips at the intersection of Richmond Parkway and San Pablo Avenue would result in a high of 5,351 PM peak-hour vehicle trips under existing plus project conditions and 7,313 PM peak-hour trips under cumulative plus project conditions. Therefore, the proposed project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited. Thus, trips associated with the proposed project would not exceed the screening criteria of the BAAQMD and impacts would be less than significant.

Level of Significance

Less than significant impact.

Objectionable Odors Exposure

Impact AIR-4:	**The proposed project could 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. It is anticipated that by the time such emissions reach any sensitive receptor sites, they would be diluted to well below any level of air quality concern. Therefore, impacts would be less than significant.

Operation

The proposed project would construct a new industrial park. Operation of this type of project could generate odors depending on what type of industry occupies the facilities. The type 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. Though the specific uses of the buildings have not been decided, it is not anticipated that a wastewater treatment plant or solid waste transfer station would be accommodated at the project site. However, the proposed project could potentially accommodate the other types of land uses that are considered to have objectionable odors such as

[40] Fehr and Peers, Inc. (Fehr & Peers). 2021, April 20. CenterPoint North Richmond Development Transportation Impact Analysis.

food processing facilities or chemical manufacturing. As shown previously in the Table 3.2-8, food manufacturing plants and chemical manufacturing have odor screening distances of one mile and two miles, respectively, from the facility to sensitive receptors. Sensitive receptors surrounding the proposed project site that are within these screening distances are generally to the north, east, and south and consist of school and residential land uses. Thus, if the future tenants propose the types of land uses shown in Table 3.2-8, implementation of the proposed project could create or expose a substantial number of people to objectionable odors, a potentially significant impact.

However, implementation of MM AIR-4 would require the future tenant that has the potential to emit nuisance odors to prepare an odor management plan that demonstrates design features to ensure compliance with BAAQMD Regulation 7, Odorous Substances and minimize and contain odor impacts to people proximate to the proposed project. Therefore, MM AIR-4 would ensure impacts related to operational odors would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AIR-4 Odor Management Plan

Prior to issuance of the certificate of occupancy, Contra Costa County shall require future tenants proposing operations that have potential to emit nuisance odors to prepare an odor management plan that identifies project design features, measures, and control technologies to ensure compliance with Bay Area Air Quality Management District (BAAQMD) Regulation 7, Odorous Substances, which requires abatement of any nuisance generating an odor complaint. Facilities that have the potential to generate nuisance odors include, but are not limited to:

- Composting, green waste, or recycling facilities
- Fiberglass manufacturing facilities
- Painting/coating operations
- Large-capacity coffee roasters
- Laboratory operations
- Food processing facilities

The odor management plan for the proposed facility shall be submitted to the County prior to the issuance of the certificate of occupancy. During operation of the proposed facility, the County shall conduct periodic evaluation of on-site odors per the schedule and reporting requirements outlined in the odor management plan.

Level of Significance After Mitigation

Less than significant impact.

3.2.5 - Cumulative Impacts

The BAAQMD considers the emission levels for which a project's individual emissions would be cumulatively significant. As such, if a project exceeds the identified thresholds of significance, its emissions would be significant in terms of both project- and cumulative-level impacts, resulting in significant adverse air quality impacts to the region's existing air quality conditions. As stated in the BAAQMD 2017 CEQA Guidelines, additional analysis to assess cumulative impacts is unnecessary. Rather, the determination of cumulative air quality impacts for construction and operational emissions is based on whether the proposed project would result in regional emissions that exceed BAAQMD regional thresholds of significance for construction and operations on a project level. Projects that generate emissions below the BAAQMD significance thresholds would be considered consistent with regional air quality planning efforts would not generate cumulatively significant emissions. As discussed in Impact AIR-2, MM AIR-2a and MM AIR-2b would reduce the proposed project's potentially significant air quality impacts related to fugitive dust and exhaust emissions to a less than significant level. In addition, and as discussed in Impact AIR-2, after incorporation of identified mitigation and required rules and regulations, the proposed project would result in construction and operational emissions which are less than the respective BAAQMD significance thresholds and would therefore not have a cumulatively considerable contribution to a cumulative impact. The proposed project would therefore result in less than significant cumulative air quality impacts.

With regard to impacts on sensitive receptors, the DPM emissions from construction of the proposed project would result in less than significant health impacts and would not combine with emissions from other cumulative projects to the extent that a significant cumulative impact would occur. In addition, the operational DPM emissions during operation of the proposed project would not result in significant health impacts and would constitute the greatest level of development. Given that the proposed project would be required to implement MM AIR-2a that is likely to result in decreased DPM emissions from what is disclosed in this analysis, the combined operation of the proposed project would not result in exposing nearby sensitive receptors to substantial amounts of pollutants. It should be noted that the cumulative HRA contained in Impact AIR-3 does not consider future projects which have not been built. Nonetheless, the cumulative health risk analysis contained therein considers existing permitted stationary sources within a 1,000-foot radius of the proposed project, consistent with the BAAQMD's 2017 CEQA Air Quality Guidelines. As discussed in Section 3, Environmental Impact Analysis, foreseeable future development projects in the area would not place new sensitive receptors near the proposed project that would be exposed to substantial amounts of pollutants. Therefore, the cumulative impact associated with construction and operation of the proposed project would be less than significant.

Odor impacts that would be associated with the proposed project would principally be limited to the combustion of diesel fuels during construction and operation. The impact would be less than significant during project construction and operation would be intermittent and spatially dispersed. Implementation of MM AIR-4 would ensure that an odor management plan is prepared prior to building occupancy should a future tenant's use be deemed a potential odor generator. In addition, no adverse cumulative condition related to odors to which the proposed project could contribute currently exists. Given the proximity of cumulative projects to the proposed project and the expected duration of sensitive receptor exposure to project-related diesel exhaust, the proposed project in combination with cumulative projects described in Section 3, Environmental Impact

Analysis, would not cause a significant cumulative effect. Therefore, cumulative odor impacts would be less than significant.

The proposed project would not result in significant cumulative air quality or health impacts.

Level of Cumulative Significance Before Mitigation

Potentially significant impact.

Cumulative Mitigation Measures

Implement MM AIR-2a, MM AIR-2b, and MM AIR-4.

Level of Cumulative Significance After Mitigation

Less than significant impact.

THIS PAGE INTENTIONALLY LEFT BLANK

3.3 - Biological Resources

3.3.1 - Introduction

This section describes the existing biological setting and potential effects of 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. No comments were received during the Notice of Preparation (NOP) comment period related to biological resources.

The descriptions and analysis in this section are based in part on the following (Appendix C):

- Biological Resources Report prepared by Huffman-Broadway Group, Inc. (HBG) in November 2017.
- Pre-Development Tree Assessment Report prepared by Dmitri Tioupine Tree Care and Preservation in February 2018.

Additionally, FirstCarbon Solutions (FCS) conducted a field survey on November 21, 2019, to characterize existing habitat and search for the presence of sensitive plant communities, special-status plants and wildlife, potential wildlife corridors, and potential presence of waters of the United States or State on the project site, which may be regulated by the United States Army Corp of Engineers (USACE) and/or the Regional Water Quality Control Board (RWQCB) (and potentially the California Department of Fish and Wildlife [CDFW]).

The project site is located on the southeast corner of Brookside Drive and Fred Jackson Way, within unincorporated Contra Costa County. The project site is located within the *Richmond, California* United States Geological Survey (USGS) 7.5-minute Topographic Quadrangle Map (Latitude 37°57’ 49.88” North; Longitude 122°21’55.32” West).

3.3.2 - Environmental Setting

Records Searches and Pedestrian Survey to Identify Existing Biological Resources

Literature Review

The analysis of biological resources on-site included a review of pertinent literature and databases related to habitat characteristics of the site, species of plants and animals expected to utilize the site, as well as a review of planning documents referencing ecological aspects of the site, and field surveys by HBG and FCS.

HBG reviewed whether sensitive habitats as defined by California Environmental Quality Act (CEQA) Guidelines are present at the site and conducted a preliminary delineation of wetlands and waters of the United States at the property according to criteria of the USACE. The results of the wetland delineation are summarized herein.

Special-status Wildlife and Plant Species

The potential occurrence of special-status species in the project vicinity was evaluated in a Biological Resources Report prepared by HBG in November 2017 (Appendix C). HBG compiled a list of

threatened endangered, and otherwise special-status species previously recorded within the general project vicinity. In November 2019, FCS performed a search of the CDFW California Natural Diversity Database (CNDDB), a special-status species and plant community account database, and the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California database for the *Richmond, California* USGS 7.5-minute Topographic Quadrangle Map.[1,2] FCS's database search results can be found in Appendix C. The CNDDB Biogeographic Information and Observation System (BIOS) database was used to determine the distance between the recorded occurrences of special-status species and the project site.

Trees

FCS Biologists reviewed applicable County ordinances pertaining to tree preservation and protective measures and their tree replacement conditions or permits required, such as Chapter 816-6 of the Contra Costa County Ordinance Code. FCS also reviewed the Pre-Development Tree Assessment Report (Appendix C).

Jurisdictional Waters and Wetlands

FCS Biologists reviewed USGS topographic maps and aerial photography to identify potential natural drainage features and water bodies. In general, surface drainage features identified as blue-line streams on USGS maps and linear patches of vegetation are expected to exhibit evidence of flows and considered potentially subject to State and federal regulatory authority as "waters of the United States and/or State."

Field Survey

HBG Biologists conducted a field survey of the site on July 13, 2017. Additionally, FCS Biologists conducted a field survey on November 21, 2019. All habitats on the project site were surveyed on foot and were assessed for similarity to sites known to support special-status species within the area. Qualitative information on the composition and distribution of plant species on the site was obtained during the site visit.

Physical Habitat/Vegetation

Habitat is an area consisting of a combination of resources (e.g., food, cover, water) and environmental conditions (e.g., temperature, precipitation, presence, or absence of predators and competitors) that promotes occupancy by individuals of a species and enables those individuals to survive and reproduce. Thus, habitat arises from interaction among soils, hydrology, climate, and vegetation. Soils, hydrology, and climate are addressed in other sections of this Draft EIR; this habitat discussion includes information regarding vegetation.

Contra Costa County

Habitat communities in the Contra Costa area consist primarily of Mediterranean plant associations but vary depending on microclimate. Due to the large size of Contra Costa County (County), there

[1] California Department of Fish and Wildlife (CDFW). 2019. Rarefind. Website: https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data. Accessed November 12, 2019.

[2] California Native Plant Society (CNPS). 2019. Rare and Endangered Plant Inventory. Website: http://rareplants.cnps.org/. Accessed November 8, 2019.

are a variety of microclimates found within County boundaries, including but not limited to riparian woodlands, estuaries, native grasslands, and coniferous forests.

Project Site

The project site contains the foundations of several former residential structures, barns, and greenhouse buildings, but no structures remain on-site. Historically, since the late 1920s, the site supported the operations of several cut flower nurseries, and farmland to grow row crops. Fallow agricultural land is found on-site, consisting primarily of non-native grasses, herbaceous plants, and forbs.

Emerging from fallow agricultural lands were primarily non-native grasses and herbaceous plants and forbs. The predominant non-native grasses include wild oats (*Avena fatua*), Mediterranean ryegrass (*Festuca perennis*), foxtail barley (*Hordeum murinum leporinum*), and rip-gut brome (*Bromus diandrus*). Herbaceous species occurring throughout the site include black mustard (*Brassica nigra*), wild radish (*Raphanus sativa*), bull mallow (*Malva nicaeensis*), bristly ox-tongue (*Helminthotheca echioides*), field bindweed (*Convolvulus arvensis*), cut-leaf plantain (*Plantago coronopus*), and prickly lettuce (*Lactuca serriola*). Other scattered non-native species include pampas grass (*Cortedaria selloana*), sweet fennel (*Foeniculum vulgare*), chicory (*Chicorum intybus*), Italian thistle (*Carduus pycnocephalus*), and small patches of Himalayan blackberry (*Rubus armeniacus*). Species found along the edge of the site include several coyote brushes (*Baccharis pilularis*), and horseweed (*Erigeron canadensis*). Select native species were found in the open fields at the site including California cudweed (*Pseudognaphalium californicum*) and California poppy (*Eschscholzia californica*).

Several irrigation ditches which connect to underground street stormwater drainages can be found in portions of the site. Vegetation within these areas consists primarily of tall flat-sedge (*Cyperus eragrostis*), curly dock (*Rumex crispus*), smartweed (*Polygonum sp.*), Mediterranean barley (*Hordeum marinum ssp. gussoneanum*), and bird's foot trefoil (*Lotus corniculatus*), along with small areas of other wetland species such as rabbitsfoot grass (*Polypogon monspeliensis*). Scattered areas were also found to contain broadleaf cattail (*Typha latifolia*) and arroyo willow (*Salix lasiolepis*).

As stated in the Pre-Development Tree Assessment Report, trees within the project site include coast redwood (*Sequoia sempervirens*), Atlas cedar (*Cedrus atlantica*), deodar cedar (*Cedrus deodara*), juniper (*Juniperus* sp.), monkey puzzle (*Araucaria araucana*), coast live oak (*Quercus agrifolia*), and southern magnolia (*Magnolia grandiflora*).

The ruderal vegetation within the fallow agricultural lands and irrigation ditches provides habitat of limited value to wildlife. The irrigation ditches can accommodate wildlife adapted to aquatic areas, and vegetation throughout provides potential nesting sites for birds, in addition to foraging areas for species of mammals, reptiles, amphibians, and birds. Habitat types found within the project site include ruderal/disturbed and urban/developed land (Exhibit 3.3-1).

Soils

Based on a review of the United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey the underlying soil in the western portion of the site along Fred Jackson Way

is Sycamore silty clay loam (Exhibit 3.3-2). Soils within the remainder of the site are Botella clay loam with 0 to 2 percent slopes (Exhibit 3.3-2).

Sensitive Biological Communities

Biological communities are assemblages of organisms that live within or use a variety of habitats for their range-of-life functions. Sensitive biological communities include habitats that fulfill special functions or have special values (e.g., greater biological diversity), such as wetlands, streams, and riparian habitat. Because wildlife is a major aspect of a biological community, this discussion of sensitive biological communities describes wildlife present in such communities.

Contra Costa County

The sensitive biological communities present within the County are mainly areas associated with tidal marshes and wetland habitat. Due to the County's large size, there are a variety of areas that may be considered sensitive biological communities, depending on the aggregations of plant and wildlife species that occur in these areas. They include but are not limited to, mixed oak woodland, riparian woodland, evergreen forests, chaparral forests, redwood forests, and native grasslands.

Project Site

The project site does not contain any sensitive biological communities such as wetlands, streams, or riparian habitat.

Wetlands and Waters of the United States and the State

Wetlands and waters of the United States and waters of the State are protected as hydrological resources, but also often provide habitat for common and special-status species. Types of water features include open water, developed open water, tidal marsh, seasonal wetland, wetlands swale, and waters.

Contra Costa County

Wetlands, waters of the United States, and waters of the State in the County occur primarily near the coast in the San Pablo Bay, Suisun Bay, and their associated features. Additionally, there are several reservoirs, such as the San Pablo Reservoir, Briones Reservoir, and Los Vaqueros Reservoir.

Project Site

Review of the historical imagery using Google Earth Pro provided no evidence of streams being diverted away from the project site, or wetlands being converted to agricultural use, or any evidence that such habitats had been eliminated from the site. A review of the USGS National Hydrography Dataset shows no stream drainages occurring on the property. Review of the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory maps shows no wetlands or deep-water habitats mapped within the site. Recent USGS DigitalGlobe aerial imagery show fallow farmland with crop furrows, irrigation ditches and several attendant building structures. Field surveys conducted by HBG and by FCS confirmed that no wetlands/waters of the United States or State were found on the property.

Common Wildlife Species at the Project Site

The vegetation community and land cover types discussed above provide habitat for a limited number of local wildlife species. Most of the wildlife observed by HBG during the field survey were bird species. Species observed within the open fields included Canada goose (*Branta canadensis*), American kestrel (*Falco sparverius*), western kingbird (*Tyrannus verticalis*), northern mockingbird (*Mimus polyglottos*), and house finch (*Haemorhous mexicanus*). Species seen flying over the site included turkey vulture (*Cathartes aura*) and California gull (*Larus californicus*).

The only mammal documented at the project site was Botta's pocket gopher (*Thomomys bottae*), based on the presence of dens. Other mammals that likely occur in the area would include those adapted to urban environments such as California ground squirrel (*Spermophilus beecheyi*), black-tailed jackrabbit (*Lepus californicus*), Virginia opossum (*Didelphis virginiana*), deer mouse (*Peromyscus maniculatus*), house mouse (*Mus musculus*), Norway rat (*Rattus norvegicus*), striped skunk (*Mephitis mephitis*), and raccoon (*Procyon lotor*). Reptiles and amphibians that likely occur in the area would include western fence lizard (*Sceloporus occidentalis)*, gopher snake (*Pituophis melanoleucus*), common garter snake (*Thamnophis sirtalis*), and Pacific treefrog (*Hyla regilla*).

Special-status Species on the Project Site

Habitat, whether aquatic or terrestrial, supports ecological functions and processes to preserve biological communities (i.e., wildlife) that live within it for all or a portion of their life cycle. Special-status species, whether plants, wildlife, or fish, are considered sufficiently rare that they require special consideration and/or protection and have been or should be listed as rare, threatened, or endangered by the federal and/or State governments. The following discussion focuses on the occurrence or potential for the occurrence of special-status species at the project site.

Special-status Plants on the Project Site

A target list of special-status plants is shown in the Biological Resources Report (Attachment 2, Table 1), which includes all species mentioned in the CNDDB occurring within 10 miles of the project site. The property does not represent high quality habitat for special-status plants. All plant species mentioned in the Biological Resources Report require habitat conditions that are not found at the project site. No special-status plant species were observed at the property during field surveys conducted by HBG or FCS, and no species included in the Biological Resources Report (Attachment 2, Table 1) are expected to occur in the project area.

Special-status Wildlife at the Project Site

Special-status animal species known to occur in the project vicinity based on results of a search of the CNDDB database and based on the knowledge of HBG wildlife biologists are evaluated in Biological Resources Report (Attachment 2, Table 2). The primarily non-native grassland habitat existing across the project site does not provide suitable habitat for any of the special-status animal species evaluated in the Biological Resources Report (Attachment 2, Table 2).

Migratory and Nesting Birds

Trees within the project site provide suitable nesting habitat for various avian species, including those protected under the federal Migratory Bird Treaty Act (MBTA). Species protected under the

MBTA that have the potential to occur within the project site include Brewer's blackbird (*Euphagus cyanocephalus*) and American robin (*Turdus migratorius*).

Wildlife Movement Corridors

Contra Costa County

Terrestrial habitat throughout the County ranges from high to low quality and varies in accessibility and continuity for wildlife movement. Wetland and riparian habitats along with coastal areas and inland reservoirs provide wildlife movement corridors for numerous fish and bird species. In addition, the Pacific Flyway (a major north-south flyway for migratory birds in America) encompasses the entire West Coast; migrating bird species utilize the wetland and riparian habitats, especially the Suisun marshes and estuaries in San Pablo Bay, for foraging and resting.

Project Site

Due to the lack of aquatic features on or in the vicinity of the project site, there are no corridors for fish or other aquatic species. Additionally, the high level of development surrounding the project site and the various barriers and fences present throughout the project site further impede the movement of terrestrial species through the project site.

Protected Trees

Project Site

Trees are protected under Chapter 816-6 of the Ordinance Code. Valley oak or indigenous trees having a diameter of 6.5 inches or greater as measured 4.5 feet from ground level are considered protected trees under Chapter 816-6.6004 of the Ordinance Code. The Pre-Development Tree Assessment Report identifies the species, heritage status, and condition of the trees within the project site. As detailed in the report, a total of seven protected trees are proposed for removal (Table 3.3-1).

Table 3.3-1: Trees Requiring Permits for Removal

Number	Species	Diameter at Breast Height (DBH)	Height	Canopy Spread	Health
1	Coast redwood (*Sequoia sempervirens*)	37 inches	60 feet	37 feet	Good
2	Atlas cedar (*Cedrus atlantica*)	20 inches	35 feet	45 feet	Good
3	Deodar cedar (*Cedrus deodara*)	16 inches	25 feet	15 feet	Good
4	Juniper (*Juniperus* sp.)	14 inches	20 feet	10 feet	Fair
5	Monkey puzzle (*Araucaria araucana*)	16 inches	30 feet	20'	Good
6	Coast live oak (*Quercus agrifolia*)	16 inches	25 feet	35 feet	Good

Number	Species	Diameter at Breast Height (DBH)	Height	Canopy Spread	Health
7	Southern magnolia (*Magnolia grandiflora*)	18 inches	25 feet	18 feet	Good
Source: Dmitri Tioupine Tree Care and Preservation. 2019. Pre-Development Tree Assessment Report. November 7.					

3.3.3 - Regulatory Framework

Federal

Federal Endangered Species Act

Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA § 3(19)). "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 Code of Federal Regulations [CFR] § 17.3). "Harass" is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR § 17.3). Actions that result in take can result in civil or criminal penalties.

FESA and Clean Water Act (CWA) Section 404 guidelines prohibit issuance of wetland permits for projects that jeopardize continued existence of any endangered or threatened species, or result in destruction or adverse modification of habitat of such species. The USACE must consult with the USFWS and/or the National Marine Fisheries Service when threatened or endangered species under their jurisdiction may be affected by a proposed project. In the context of the proposed project, FESA consultation 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.

Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by several State and federal laws. The federal MBTA prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior.

Clean Water Act

The USACE regulates the 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 United States Code [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.

Waters of the United States include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Boundaries between jurisdictional waters and uplands are determined in a variety of ways, depending on which type of waters is present. 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 State of California enacted the California Endangered Species Act (CESA) in 1984. CESA is like FESA but pertains to State-listed endangered and threatened species. CESA requires State agencies to consult with the CDFW when preparing CEQA documents. The purpose of CESA is to ensure that the lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (California Fish and Game Code [FGC] § 2080). CESA directs agencies to consult with the CDFW on projects or actions that could affect listed species, directs the CDFW to determine whether jeopardy would occur, and allows the CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA allows the CDFW to authorize exceptions to the State's prohibition against take of a listed species if the take is incidental to carrying out an otherwise lawful project that has been approved under CEQA (FGC § 2081).

California Fish and Game Code

The Fish and Game Code defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (FGC § 86). Except for take related to scientific research, all take of

fully protected species is prohibited. Fully protected fish species are protected under Fish and Game Code Section 5515; fully protected amphibian and reptile species are protected under Section 5050; fully protected bird species are protected under Section 3511; and fully protected mammal species are protected under Section 4700. Fish and Game Code Section 3503 prohibits the killing of birds or the destruction of bird nests. Section 3503.5 prohibits the killing of raptor species and the destruction of raptor nests. Fish and Game Code Sections 2062 and 2067 define "endangered and threatened species."

California Department of Fish and Wildlife Species of Concern

In addition to formal listing under FESA and CESA, species receive additional consideration by the 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 habitats 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

The CDFW is a trustee agency that has jurisdiction under Fish and Game Code Section 1600, *et seq*. Under Fish and Game Codes Sections 1602 and 1603, a private party must notify the CDFW if a proposed project would "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds . . . except when the department has been notified pursuant to Section 1601." Additionally, the CDFW may assert jurisdiction over native riparian habitat adjacent to aquatic features, including native trees over 4 inches in diameter at breast height (DBH). If an existing fish or wildlife resource may be substantially adversely affected by the activity, the CDFW may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with the CDFW identifying the approved activities and associated mitigation measures.

Section 13260(a) of the Porter-Cologne Water Quality Control Act (contained in the California Water Code) requires any person discharging waste or proposing to discharge waste, other than to a community sewer system, within any region that could affect the quality of the waters of the State (all surface and subsurface waters) to file a report of waste discharge. The discharge of dredged or fill material may constitute a discharge of waste that could affect the quality of waters of the State.

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 material (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. With recent changes that limited jurisdiction of wetlands under the CWA, the State Water Board has had to rely on the report of waste discharge process.

California Native Plant Protection Act

State listing of plant species began in 1977 with the passage of the Native Plant Protection Act (NPPA), which directed the CDFW to carry out the Legislature's intent to "preserve, protect, and enhance endangered plants in this State." The NPPA gave the CDFW the power to designate native plants as endangered or rare and to require permits for collecting, transporting, or selling such plants. CESA expanded on the original NPPA and enhanced legal protection for plants. CESA established categories for threatened and endangered species and grandfathered all rare animals—but not rare plants—into the act as threatened species. Thus, the State of California employs three listing categories for plants: rare, threatened, and endangered.

The CNPS 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 Plants of California. Potential impacts to populations of CNPS ranked plants receive consideration under CEQA review. The following identifies the definitions of the CNPS ranks:

- **Rank 1A:** Plants presumed Extinct in California
- **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 we need more information–A Review List
- **Rank 4:** Plants of limited distribution–A Watch List

All plants appearing on CNPS List ranked 1 or 2 are 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.

Local

Contra Costa County General Plan

The purpose of the General Plan is to express the broad goals and policies, and specific implementation measures, which will guide decisions on future growth, development, and the conservation of resources through the year 2020. The following are General Plan goals and policies most pertinent to the project regarding protection and preservation of natural resources in the area.

Goal 8-A To preserve and protect the ecological resources of the County.

Goal 8-B To conserve the natural resources of the County through control of the direction, extent, and timing of urban growth.

Goal 8-D To protect ecologically significant lands, wetlands, plant, and wildlife habitats.

Goal 8-E To protect rare, threatened, and endangered species of fish, wildlife, and plants, significant plant communities, and other resources which stand out as unique because of their scarcity, scientific value, aesthetic quality, or cultural significance. Attempt to achieve a significant net increase in wetland values and functions within the County over the life of the General Plan. The definition of rare, threatened, and endangered includes those definitions provided by the Federal Endangered Species Act, the California Endangered Species Act, the California Native Plant Protection Act, and the California Environmental Quality Act.

Policies

Policy 8-1 Resource utilization and development shall be planned within a framework of maintaining a healthy and attractive environment.

Policy 8-3 Watersheds, natural waterways, and areas important for the maintenance of natural vegetation and wildlife populations shall be preserved and enhanced.

Policy 8-6 Significant trees, natural vegetation, and wildlife populations generally shall be preserved.

Policy 8-7 Important wildlife habitats which would be disturbed by major development shall be preserved, and corridors for wildlife migration between undeveloped lands shall be retained.

Policy 8-9 Areas determined to contain significant ecological resources, particularly those containing endangered species, shall be maintained in their natural state, and carefully regulated to the maximum legal extent. Acquisition of the most ecologically sensitive properties within the County by appropriate public agencies shall be encouraged.

Policy 8-10 Any development located or proposed within significant ecological resource areas shall ensure that the resource is protected.

Policy 8-12 Natural woodlands shall be preserved to the maximum extent possible in the course of land development.

Policy 8-13 The critical ecological and scenic characteristics of rangelands, woodlands, and wildlands shall be recognized and protected.

Policy 8-15 Existing vegetation, both native and non-native, and wildlife habitat areas shall be retained in the major open space areas sufficient for the maintenance of a healthy balance of wildlife populations.

Policy 8-21 The planting of native trees and shrubs shall be encouraged in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native wildlife, and ensure that a maximum number and variety of well-adapted plants are sustained in urban areas.

Policy 8-22 Applications of toxic pesticides and herbicides shall be kept at a minimum and applied in accordance with the strictest standards designed to conserve all the living resources of the County. The use of biological and other non-toxic controls shall be encouraged.

Policy 8-28 Efforts shall be made to identify and protect the County's mature native oak, bay, and buckeye trees.

Policy 9-A To preserve and protect the ecological, scenic, cultural/historic, and recreational resource lands of the county.

Policy 9-C To achieve a balance of open space and urban areas to meet the social, environmental, and economic needs of the county now and for the future.

Contra Costa County Ordinance Code

Chapter 82-1—65/35 Land Preservation Plan

Chapter 82-1 covers the implementation of the General Plan and the various regulations regarding development in urban and undeveloped areas.

Section 816-6. Lists the protected trees, permit requirements, and the application process for tree removal.

- A protected tree is any one of the following:
  (1) On all properties within the unincorporated area of the county:
    (A) Where the tree to be cut down, destroyed or trimmed by topping is adjacent to or part of a riparian, foothill woodland or oak savanna area, or part of a stand of four or more trees, measures twenty inches or larger in circumference (approximately 6.5 inches in diameter) as measured four and one-half feet from ground level, and is included in the following list of indigenous trees: *Acer macrophyllum* (Bigleaf Maple), *Acer negundo* (Box Elder), *Aesculus californica* (California Buckeye), *Alnus Rhombifolia* (White Alder), *Arbutus menziesii* (Madrone), *Heteromeles arbutifolia* (Toyon), *Juglans Hindsii* (California Black Walnut), *Juniperus californica* (California Juniper), *Lithocarpus densiflora* (Tanoak or Tanbark Oak), *Pinus attenuata* (Knobcone Pine), *Pinus sabiniana* (Digger Pine), *Platanus racemosa* (California Sycamore), *Populus fremontii* (Fremont Cottonwood), *Populus trichocarpa* (Black Cottonwood), *Quercus agrifolia* (California or Coast Live Oak), *Quercus chrysolepis* (Canyon Live Oak), *Quercus douglasii* (Blue Oak), *Quercus kelloggii* (California Black Oak), *Quercus lobata* (Valley Oak), *Quercus wislizenii* (Interior Live Oak), Salix lasiandra (Yellow Willow), *Salix laevigata* (Red Willow), *Salix lasiolepis* (Arroyo Willow), *Sambucus callicarpa* (Coast Red Elderberry), *Sequoia sempervirens* (Coast Redwood), *Umbellularia californica* (California Bay or Laurel);

(B) Any tree shown to be preserved on an approved tentative map, development or site plan or required to be retained as a condition of approval;
(C) Any tree required to be planted as a replacement for an unlawfully removed tree.

(2) On any of the properties specified in subsection (3) of this section:
(A) Any tree measuring twenty inches or larger in circumference (approximately six and one-half inches diameter), measured four and one-half feet from ground level including the oak trees listed above;
(B) Any multi-stemmed tree with the sum of the circumferences measuring forty inches or larger, measured four and one-half feet from ground level;
(C) And any significant grouping of trees, including groves of four or more trees.

(3) Specified properties referred to in subsection (2) of this section includes:
(A) Any developed property within any commercial, professional office or industrial district;
(B) Any undeveloped property within any district;
(C) Any area designated on the general plan for recreational purposes or open space;
(D) Any area designated in the county general plan open space element as visually significant riparian or ridge line vegetation and where the tree is adjacent to or part of a riparian, foothill woodland or oak savanna area.

Section 816-4. Heritage Tree Ordinance: Protects certain trees that also have been designated "Heritage" by the County.

- A tree permit must be filed to remove a heritage tree, including application for a building, grading, or demolition permit. Any person proposing to trench, grade or fill within the dripline of any protected heritage tree or cut down, destroy, trim by topping or remove any protected tree shall apply to the department for a tree permit, not less than ten days prior to the proposed tree removal or tree alterations.
- "Tree removal" means the destruction of any protected tree by cutting, regrading, girdling, interfering with water supply, applying chemicals or by other means.
- A heritage tree is defined as a tree that is 72 inches or more in circumference measured four and one-half feet above the natural grade; or any tree or a group of trees particularly worthy of protection, and specifically designated as a heritage tree by the board of supervisors pursuant to the provisions of this chapter, because of:
  a) Having historical or ecological interest or significance, or
  b) Being dependent upon each other for health or survival, or
  c) Being considered an outstanding specimen of its species as to such factors as location, size, age, rarity, shape, or health.

3.3.4 - Impacts and Mitigation Measures

Significance Criteria

According to the CEQA Guidelines Appendix G Environmental Checklist, to determine whether impacts related to biological resources are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

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?

Approach to Analysis

Impacts on biological resources were evaluated based on the likelihood that special-status species, sensitive habitats, wildlife corridors, and protected trees are present on the project site, and the likely effects of project construction or operation on these resources and State and federally protected waters. For the purposes of this Draft EIR, the word “substantial” as used in the significance thresholds above is defined by the following three principal components:

- Magnitude and duration of the impact (e.g., substantial/not substantial),
- Uniqueness of the affected resource (rarity), and
- Susceptibility of the affected resource to disturbance.

In this Biological Resources Analysis, the project site is defined as all areas directly affected by proposed project development.

Specific Thresholds of Significance

For purposes of this analysis, the following thresholds are used to evaluate the significance of biological resources impacts resulting from implementation of the proposed project.

- Result in direct take or habitat removal or alteration for candidate, sensitive, or special-status species
- Remove vegetation or damage water quality related to riparian habitat or other sensitive natural community
- Remove, fill, or damage a State or federally protected wetland
- Interrupt fish movement in an aquatic channel or impede terrestrial movement via a land corridor
- Remove, damage, or replace trees designated by the Contra Costa County Tree Ordinance
- Conflict with the provisions of an applicable habitat conservation plan

Impact Evaluation

Special-Status Species

Impact BIO-1:	**The proposed project could 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.**

An impact to special-status plants or wildlife species would be considered significant if construction or operations of the proposed project would result in a substantial, adverse change in any of the physical conditions (such as habitat) within the area affected by the project. Each potential special-status species that has the potential to be impacted is discussed in detail below.

Construction

Construction activities would result in the removal of much the non-native and ornamental vegetation found on the project site. Vegetation removal has the potential to negatively impact special-status plant and wildlife species and their habitat.

Special-Status Plant Species

A target list of special-status plants is shown in the Biological Resources Report (Attachment 2, Table 1), which includes all species mentioned in the CNDDB occurring within 10 miles of the project site. A total of 44 special-status plant species were recorded in the CNDDB search; however, the property does not provide the habitat conditions required for any of these special-status plant species, such as specific soil types. Additionally, no special-status plant species were observed on the property during field surveys conducted in 2017 by HBG or in 2019 by FCS. As such, impacts to special-status plant species from project construction would be less than significant.

Special-status Wildlife Species

Special-status animal species known to occur in the project vicinity based on results of a search of the CNDDB database and based on the knowledge of HBG wildlife biologists are evaluated in Biological Resources Report (Attachment 2, Table 2). A total of 58 special-status wildlife species were recorded in the vicinity of the project site by the CNDDB search.

HBG's report noted the presence of several residential structures and barns that have the potential to support roosting bats (Mitigation Measure #4 of HBG's report). During FCS's follow up survey on November 21, 2019, these structures were no longer observed to be present, with only cement foundations remaining. As such, impacts to bat species previously identified by HGB are not discussed further in this document. The primarily non-native grassland habitat of the project site does not provide suitable habitat for any of the other special-status animal species evaluated in the Biological Resources Report.

Migratory and Nesting Birds

Trees within the project site provide suitable nesting habitat for various avian species, including those protected under the federal MBTA. Species protected under the MBTA that have the potential to occur within the project site include Brewer's blackbird and American robin.

Nesting passerine bird species protected by the MBTA, including Brewer' blackbird and American robin could be impacted during project construction. The removal of shrubs, grasses, and other vegetation during the February 1 to August 31 breeding season could result in mortality of nesting avian species if they are present. Many species of raptors (birds of prey) are sensitive to human incursion and construction activities, and it is necessary to ensure that nesting raptor species are not present in the vicinity of construction sites. If present on-site, impacts on these species could be potentially significant. Mitigation Measure (MM) BIO-1a would require pre-construction breeding bird surveys prior to the commencement of construction activity if construction is conducted during the breeding season. MM BIO-1a further requires that If bird nests are found, an appropriate buffer zone shall be established around all active nests. MM BIO-1a is also applicable to the off-site improvements. With implementation of MM BIO-1a, impacts to nesting birds would be less than significant.

Operation

Impacts related to a project's potential effect on special-status species would be limited to construction impacts. No respective operational impacts would occur. Any potential suitable habitat for special-status species would be largely removed by project construction. Project operation would be limited to the improved portions of the project site, where occurrence of special-status species is unlikely.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM BIO-1a Nesting Bird Surveys

If feasible, construction work should take place outside of the February 1 to August 31 breeding window for nesting birds. If construction is to be conducted during the breeding season, a qualified Biologist should conduct a pre-construction breeding bird survey in areas of suitable habitat within 5 days prior to the commencement of construction activity. In the event that there is a lapse in construction activities for 5 days or more, a qualified Biologist shall conduct a pre-construction breeding bird

survey in areas of suitable habitat again. If bird nests are found, appropriate buffer zones shall be established around all active nests to protect nesting adults and their young from construction disturbance. In general, the California Department of Fish and Wildlife (CDFW) recommends a 250-foot construction exclusion zone around the nests of active passerine birds during the breeding season, and a 500-foot buffer for nesting raptors. Buffers shall be determined based upon factors such as topography, line of sight, activities being conducted, and species. The buffer zone shall be approved by a qualified Biologist with extensive training in bird nest surveys prior to the commencement of construction activity. Buffer zones shall be maintained until it can be documented that either the nest has failed, or the young have fledged.

Level of Significance After Mitigation

Less than significant impact.

Sensitive Natural Communities

Impact BIO-2:	**The proposed project would not 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.**

Construction

Construction activities would take place within fallow agricultural land that historically supported cut flower nurseries and farmland to grow row crops. The project site currently contains the foundations of several former residential structures, barns, and greenhouse buildings. The remainder of the project site is currently vegetated, primarily, with non-native herbaceous plants and grasses (ruderal vegetation), and non-native shrubs, some planted for landscaping purposes around the building foundations. No sensitive habitats as defined by the CNDDB or local County policies were found on the property or in the project vicinity. As such, impacts to riparian habitat or other sensitive natural communities during construction would be less than significant.

Operation

Impacts related to a project's potential effect on sensitive natural communities would be limited to construction impacts. No respective operational impacts would occur.

Level of Significance

Less than significant impact.

Wetlands and Jurisdictional Features

Impact BIO-3:	**The proposed project would not 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.**

Construction and Operation

No federally protected wetlands as defined by Section 404 of the CWA were identified within the site. Review of the historical imagery using Google Earth Pro provided no evidence of streams being diverted away from the project site, or wetlands being converted to agricultural use, or that such habitats had been eliminated from the site. A review of the USGS National Hydrography Dataset shows no stream drainages occurring on the property. Review of the USFWS National Wetlands Inventory maps shows no wetlands or deep-water habitats mapped within the site. Recent USGS DigitalGlobe aerial imagery showed fallow farmland with crop furrows and irrigation ditches and several attendant building structures. Both field surveys conducted by HBG and FCS confirmed that no wetlands/waters of the United States or State were found on the property. As such, the proposed project would not directly or indirectly remove, fill, or hydrologically interrupt State or federally protected wetlands. No impacts would result from project construction or operation.

Level of Significance

No impact.

Fish and Wildlife Movement Corridors

Impact BIO-4: **The proposed project would not 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.**

Construction

Project construction would occur in an area that is vegetated with mostly urban habitats consisting of primarily non-native herbaceous plants and grasses and landscaping. Loss of vegetation associated with these habitats on-site would result in minor disruption of existing wildlife, which consists of common species. Some bird roosting, nesting, and foraging areas within the non-native grassland and small areas of irrigation ditches which connect to street underground stormwater drainages would be eliminated. Some reptiles, amphibians and small mammals adapted the urban habitats within this disturbed site may be temporarily displaced to similar habitats nearby capable of accommodating these species. Animal species that have adapted to living in close association with human disturbance can be expected to return to the project site following construction. These species include mammals such as raccoon, California ground squirrel, deer mouse, and house mouse, and birds such as rock pigeon, mourning dove, American robin, European starling, house sparrow, Brewer's blackbird and brown-headed cowbird.

Nesting Birds

As discussed in Impact BIO-1, the construction of the proposed project could adversely impact nesting passerine bird species protected by the MBTA. The removal of shrubs, grasses and other vegetation could result in disturbance and/or mortality of nesting avian species if they are present, which would be a potentially significant impact. Thus, it is necessary to ensure that nesting raptor or migratory bird species are not present or are protected during construction by the establishment of buffer zones and avoidance measures, including within the areas proposed for off-site improvements. Implementation of MM BIO-1a would be sufficient to mitigate any potential impacts to migratory birds.

Operation

Impacts related to a project's potential effect on fish and wildlife movement corridors would be limited to construction impacts. No respective operational impacts would occur. Project operation would be limited to the improved portions of the project site, where fish and wildlife movement corridors are not present.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement MM BIO-1a.

Level of Significance After Mitigation

Less than significant impact.

Local Biological Resources Policies/Ordinances Consistency

Impact BIO-5:	**The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.**

Construction

A Pre-Development Tree Assessment Report was prepared by Dmitri Tioupine Tree Care and Preservation in February 2018 (Appendix C). As detailed in the report, and as shown in Table 3.3-1, a total of seven protected trees are proposed for removal, including one coast redwood, one Atlas cedar, one deodar cedar, one juniper, one monkey puzzle, one coast live oak, and one southern magnolia. Several ornamental trees are also present on-site, but their removal would not require a permit.

Chapter 82-1, Section 816-6 of the Ordinance Code, lists the protected trees, permit requirements, and the application process for tree removal. The request for tree removal is incorporated as part of the proposed project's land use review and approval. Therefore, the proposed project would not conflict with this ordinance.

Operation

Impacts related to a project's potential to conflict with local policies or ordinances protecting biological resources would be limited to construction impacts. No respective operational impacts would occur.

Level of Significance

No impact.

Habitat/Natural Community Conservation Plan Consistency

Impact BIO-6:	**The proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.**

Construction and Operation

The project site is located within Pacific Gas and Electric Company (PG&E) Bay Area Operations and Maintenance Habitat Conservation Plan (HCP), which covers the entire County. However, because the proposed project is not a PG&E lead project, it is not covered by this HCP. As for other applicable local, regional, or State HCPs, the project site lies about 25 miles west of the East Contra Costa County Natural Community Conservation Plan (NCCP)/HCP. As, a result the proposed project would have no impact on any adopted HCP or NCCP.

Level of Significance

No impact.

3.3.5 - Cumulative Impacts

The geographical scope of the cumulative impact analysis for Biological Resources is the County, including the City of Richmond and the City of San Pablo, with a focus on the areas of the County near the project site. The analysis also considers the foreseeable development projects listed in Chapter 3, Environmental Impact Analysis, Table 3-1, Cumulative Projects, in unincorporated Contra Costa County and the surrounding cities, in addition to the proposed project.

Special-status Species

The project site and surrounding area is mostly developed and contains a mix of residential, commercial, and industrial buildings. There are jurisdictional waterways in the proximity of the project site, such as San Pablo Creek, Wildcat Creek, and nearby coastal marshes that provide habitat for a variety of wetland and riparian species of flora and fauna. Of the projects listed in Table 3-1, Projects 4-10, 12, 14, 16, and 18 are located within 0.5 mile of the project site; as shown in Exhibit 3-1, all of these projects are located on previously developed or highly disturbed sites. The developed characteristics of these sites largely preclude the presence of many special-status species, similar to the project site.

As discussed in Impact BIO-1, the project site does not contain suitable habitat for any special-status plant species, although existing mature trees do have the potential to support nesting bird species protected under the MBTA. Similar to the protective measures required by MM BIO-1 for nesting bird species, other projects identified in Exhibit 3-1 would also be required to implement standard pre-construction surveys and, if necessary, avoidance procedures, if nesting birds are identified. While there is limited, isolated natural habitat in the area that could support special-status species, the built-up nature precludes possible cumulative impacts to biological resources related to special-status wildlife and plant species. As such, the proposed project, in conjunction with other cumulative projects, would result in a less than significant cumulative impact related to special-status wildlife and plant species.

Sensitive Natural Communities or Riparian Habitat

Within the County, the City of Richmond, and the City of San Pablo, there are several small waterbodies, including San Pablo Creek and Wildcat Creek, that contain riparian habitats. These areas may be considered sensitive natural communities depending on specific habitat conditions and

species that may be present. Most current developments are designed or conditioned to minimize developmental impacts to sensitive natural communities through avoidance or the implementation of protective measures. As such, the proposed project, in conjunction with other cumulative projects, would result in a less than significant cumulative impact related to sensitive natural communities and associated riparian habitat.

Waters of the United States

The areas of the County, the City of Richmond, and the City of San Pablo contain several areas that would be considered jurisdictional, although the projects identified in Exhibit 3-1 in the vicinity of the project site appear to be located on developed and/or disturbed sites with low potential for jurisdictional features to be impacted by project development. Future developments would be required to identify any potential waters of the US and, if present, to appropriately mitigate impacts through avoidance, reduced footprint, or through compensatory mitigation either on- or off-site. Applicants would also be required to obtain all necessary permits from the USACE and CDFW, and to compensate for the loss of waters of the United States through re-creation or payment of mitigation credits. Due to the limited scope of current projects, most of which are occurring in highly developed and disturbed areas, it is expected that there would be a less than significant cumulative impact related to waters of the United States.

Local Policies or Ordinances

The proposed project would remove seven code-protected trees. Other projects may require removal or encroachment on certain protected trees as listed by the Ordinance Code, Richmond Municipal Code, or San Pablo Municipal Code. As previously mentioned, many of the cumulative development projects shown in Exhibit 3-1 are occurring on previously developed or disturbed sites. As such, a limited number of trees within the geographical scope could be subject to removal or encroachment. Cumulative projects would require an Arborist report, similar to the proposed project, to determine the identity of trees planned for removal or encroachment, and to require compliance with the Ordinance Code Chapter 82-1, Section 816-6. Therefore, the proposed project, in conjunction with other future development projects, would be required to adhere to applicable tree ordinances and regulations set by the County and the cities of Richmond and San Pablo, resulting in a less than significant cumulative impact to biological resources related to local policies and ordinances.

Fish and Wildlife Movement Corridors

The main wildlife corridors in the vicinity of the project site are Wildcat Creek, located approximately 400 feet south of the project site, and San Pablo Creek, located approximately 750 feet north of the project site. Since the project site does not border either of these corridors, it would not have any potential impact to these wildlife movement corridors. Any development that occurs within the geographic scope of the County, the City of Richmond, and the City of San Pablo would have to consider potential impacts on these corridors. The cumulative development projects shown in Exhibit 3-1 are occurring on previously developed or disturbed sites. As such, there would be a less than significant cumulative impact to biological resources related to movement corridors for fish and wildlife.

Habitat and Natural Community Conservation Plan Consistency

The project site is located within PG&E's Bay Area Operations and Maintenance HCP, which covers the entire County. However, because the proposed project is not a PG&E lead project, it is not covered by this HCP. As for other applicable local, regional, or State HCPs, the project site is located approximately 25 miles west of the East Contra Costa County NCCP/HCP. Other projects located within the local vicinity of the proposed project would similarly have no impact on either of these NCCP/HCP's. The project would not have a cumulatively considerable contribution to potential impacts related to consistency with an HCP.

Level of Cumulative Significance

Less than significant impact.

Source: Google Earth Aerial Imagery. NWI GIS Data.

FIRSTCARBON SOLUTIONS™

400 200 0 400

Feet

Exhibit 3.3-1
Habitat Types

THIS PAGE INTENTIONALLY LEFT BLANK

Source: Google Earth Aerial Imagery. USDA Soils Data, Contra Costa County.

FIRSTCARBON SOLUTIONS™

400 200 0 400
Feet

Exhibit 3.3-2
Soils Map

THIS PAGE INTENTIONALLY LEFT BLANK

3.4 - Cultural Resources and Tribal Cultural Resources

3.4.1 - Introduction

This section describes the existing cultural resources setting and the potential impacts on cultural resources on the project site and its surrounding area that may result from project implementation. The descriptions and analysis in this section are based, in part, on information provided by the Native American Heritage Commission (NAHC), as well as a records search of the Sacred Lands File, archival research, and a pedestrian survey, as presented in the Archaeological Resources Assessment Report prepared by Basin Research Associates and the Historical Resource Evaluation prepared by Left Coast Architectural History (see Appendix D). Recommendations provided in the Archaeological Resources Assessment and the Historical Resources Evaluation to address potential project impacts on cultural resources during ground-disturbing activities are incorporated into this section where appropriate.

The following comments related to Cultural and Tribal Cultural Resources (TCRs) were received in response to the NOP:

- Notification of requirements of Assembly Bill (AB) 52 and Senate Bill (SB) 18.
- Recommendation to use the California Historical Research Information System (CHRIS) for an archaeological records search.[1]
- Recommendation of the preparation of a professional report detailing the findings of an archaeological inventory survey (if required) and submission to the appropriate regional CHRIS center.
- Recommendation of contact with the NAHC for a Sacred Lands File search and Native American Tribal Consultation List.
- Reminder that the lack of subsurface archaeological resources does not preclude their subsurface existence.
- Request to allow Wilton Rancheria tribal representative to be present during construction to identify significant resources.
- Suggested mitigation for avoidance of TCRs, archaeological sites, and/or other resources, as well as installation of protective fencing prior to construction.

3.4.2 - Environmental Setting

Cultural Resources Components

The term “cultural resources” encompasses historic resources, archaeological resources, and burial sites, which are generally defined as follows:

[1] The California Historical Research Information System (CHRIS) was used for the Archaeological Resources Assessment Report prepared by Basin Research Associates.

- **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. Historic resources often take the form of buildings, structures, and other elements of the built environment.
- **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:** TCRs include sites, features, places, or objects that are of cultural value to one or more California Native American Tribes.
- **Burial Sites, Cemeteries, and Native American Burial Sites:** Burial sites and cemeteries are formal or informal locations where human remains have been interred and that are of cultural value to one or more California Native American Tribes.

Overall Cultural Resources 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.[2,3,4,5,6,7,8]

Prehistoric and Ethnographic Background

In general, archaeological research in the greater San Francisco Bay Area has focused on coastal areas, where large shellmounds were relatively easily identified on the landscape. This research and its chronological framework, however, is relevant to and has a bearing on our understanding of prehistory in areas adjacent to the San Francisco Bay Area, including modern Contra Costa County.

The San Francisco Bay Area supported a dense population of hunter-gatherers over thousands of years, leaving a rich and varied archaeological record. The Bay Area was a place of incredible language diversity, with seven languages spoken at the time of Spanish settlement in 1776. The diverse ecosystem of the Bay and surrounding lands supported an average of three to five persons per square mile, but reached 11 persons per square mile in the North Bay. At the time of Spanish contact, the people of the Bay Area were organized into local tribelets that defended fixed territories under independent leaders. Typically, individual Bay Area tribelets included 200 to 400 people

[2] Kroeber, A.L. 1925. Handbook of the Indians of California. Bulletin 78. Bureau of American Ethnology. Washington, D.C. Smithsonian Institution.
[3] Beardsley, Richard K. 1948. Cultural Sequences in Central California Archaeology. American Antiquity 14:1-28. July.
[4] Bennyhoff, J. 1950. Californian Fish Spears and Harpoons. Berkeley: University of California Anthropological Records 9(4):295-338.
[5] Chartkoff J.L. and K.K. Chartkoff. 1984. The Archaeology of California. Menlo Park: Stanford University Press.
[6] Moratto, M.J. 1984. California Archaeology. San Diego: Academic Press.
[7] J Heizer, R. F., ed. 1978. Handbook of North American Indians, Vol. 8: California. Washington, D.C. Smithsonian Institute.
[8] Fredrickson, D.A. 1973. Early Cultures of the North Coast Ranges, California. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Davis.

distributed among three to five semi-permanent villages, within territories measuring approximately 10 to 12 miles in diameter.[9]

Native American occupation and use of the greater Bay Area, including the regions comprising modern Richmond, extends over 5,000 to 7,000 years and may be even longer. 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.[10] The initial archaeological reports typically contained descriptive narratives, with more systematic approaches sponsored by Sacramento Junior College in the 1930s. At the same time, the 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.[11,12] In 1939, Lillard noted that each cultural period influenced the spread of trade in goods from the Delta region to other regions in Central California.[13] 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.[14] 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.[15,16,17]

To address some of the flaws in the CCTS system, Fredrickson introduced a revision that incorporated a system of spatial and cultural integrative units.[18] Fredrickson separated cultural, temporal, and spatial units from each other and assigned them to six chronological periods: Paleo-Indian (12,000 to 8000 Before Present [BP]); Lower, Middle and Upper Archaic (8000 BP to 1500 BP), and Emergent (Upper and Lower, 1500 BP to historic period). The suggested temporal ranges that are similar to earlier horizons, which are broad cultural units that can be arranged in a temporal sequence.[19] 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 (5000 to 3000 BP)

[9] Milliken, Randall et al. 2007. Punctuated Culture Change in the San Francisco Bay Area. In California Prehistory, edited by Terry L. Jones and Kathryn A. Klar.

[10] Schenck, W.E., and E.J. Dawson. 1929. Archaeology of the Northern San Joaquin Valley. American Archaeology and Ethnology 25:286–413.

[11] 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.

[12] 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. Sacramento.

[13] 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. Sacramento.

[14] Beardsley, R.K. 1948. "Cultural Sequences in Central California Archaeology." American Antiquity 14:1-28.

[15] 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.

[16] Gerow, B.A. 1974. Comments on Fredrickson's Cultural Diversity. The Journal of California Anthropology 1(2):239–246.

[17] 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.

[18] Fredrickson, D.A. 1973. Early Cultures of the North Coast Ranges, California. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Davis.

[19] Moratto, M.J. 1984. California Archaeology. San Diego: Academic Press.

- Berkeley Pattern or Middle Horizon (3000 to 1500 BP)
- Augustine Pattern or Late Horizon (1500 BP to historic period)

Brief descriptions of these temporal ranges and their unique characteristics follow.

Windmiller Pattern or Early Horizon (5000 to 3000 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.[20,21] 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 indicate 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 (3000 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.[22] 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.[23] 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.[24] During this period, larger populations are suggested by the number and depth of sites compared with the Windmiller Pattern. According to

[20] Bennyhoff, J. 1950. Californian Fish Spears and Harpoons. University of California Anthropological Records 9(4):295–338.
[21] Ragir, S.R. 1972. The Early Horizon in Central California Prehistory. Contributions of the University of California Archaeological Research Facility 15. Berkeley, CA.
[22] Fredrickson, D.A. 1973. Early Cultures of the North Coast Ranges, California. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Davis.
[23] 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. Sacramento.
[24] 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.

Fredrickson, the Berkeley Pattern reflects gradual expansion or assimilation of different populations rather than sudden population replacement and a gradual shift in economic emphasis.[25]

Augustine Pattern or Late Horizon (1500 BP to Historic Period)

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 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.[26] 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. Research indicates that Augustine Pattern represents expansion of the Wintuan population from the north, which resulted in combining new traits with those established during the Berkeley Pattern.[27]

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.[28] Although debate continues over a single model or sequence for Central California, the general framework consisting of three temporal/cultural units is generally accepted, although the identification of regional and local variation is a major goal of current archaeological research.

The Ohlone (Costanoan)

The San Francisco Bay Area consisted of several independent tribal territories during the prehistoric and early historic periods. Native Peoples largely spoke dialects of five distinct languages: Costanoan (Ohlone), Bay Miwok, Plains Miwok, Patwin, and Wappo. Various tribelets that were part of the Ohlone tribe of California Native Americans occupied the project vicinity at the time of European contact.[29] The Ohlone group designates a language family consisting of eight branches of the Ohlone language that are considered too distinct to be dialects, wherein each is related to its geographically adjacent neighbors. These groups lived in approximately 50 separate and politically autonomous tribelet areas, each with one or more permanent villages, between the North San Francisco Bay and the lower Salinas River.[30]

The tribal group that most likely occupied the project area was of the Karkin ethnic group, whose territory extended over the Carquinez Strait region in the northeast portion of the San Francisco Bay

[25] Fredrickson, D.A. 1973. Early Cultures of the North Coast Ranges, California. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Davis.

[26] Moratto, M.J. 1984. California Archaeology. San Diego. Academic Press.

[27] Johnson, J.J. 1976. Archaeological Investigations at the Blodgett Site (CA-SAC-267), Sloughhouse Locality, California. Report to the U.S. National Parks Service, Western Regional Office, Tucson, AZ.

[28] 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.

[29] Levy, R. 1978. Costanoan. In California, edited by Robert F. Heizer, pp. 485-495. Handbook of North American Indians, Vol. 8. W.G. Sturtevant, general editor, Smithsonian Institution, Washington D.C.

[30] Ibid.

estuary. Linguist-missionary Felipe Arroyo de la Cuesta documented that they spoke the Karkin language at Mission Dolores in 1821. His records show that the Karkin language was a distinct branch of Ohlone, strikingly different from the neighboring Chochenyo Ohlone language or other Ohlone languages spoken farther south.

The various Ohlone tribes subsisted as hunter-gatherers and relied on local terrestrial and marine flora and fauna for subsistence.[31] The predominant plant food source was the acorn, but they also exploited a wide range of other plants, including various seeds, buckeye, berries, and roots. Protein sources included grizzly bear, elk, sea lions, antelope, and black-tailed deer as well as smaller mammals such as raccoon, brush rabbit, ground squirrels, and wood rats. Waterfowl, including Canadian geese, mallards, green-winged teal, and American widgeon, were captured in nets using decoys to attract them. Fish also played an important role in the Ohlone diet and included steelhead, salmon, and sturgeon.[32] Like other native Californians, the Ohlone managed their environment to improve it for their use. For example, the Ohlone burned grass and brush lands annually in order to improve productivity of forage habitat for deer and rabbits, and to enhance safety by keeping the land open with clear sight lines to better spot predators or neighbors.

The Ohlone were politically organized into autonomous tribelets that had distinct cultural territories. Individual tribelets contained one or more villages with a number of seasonal camps for resource procurement within the tribelet territory. The tribelet chief could be either male or female, and the position was inherited patrilineally, but approval of the community was required. The tribelet chief and council were essentially advisors to the community and were responsible for feeding visitors, directing hunting and fishing expeditions, ceremonial activities, and warfare on neighboring tribelets.

Regional Historic Background

Spanish Period (1769-1821)

According to Hart, Spanish colonial policy from 1769-1821 was directed at the founding of presidios, missions, and secular towns, with the land held by the Crown. The depletion of the coastal populations resulted in Spanish missionaries shifting to conversion of the interior peoples. Spanish mission records indicate that by 1800, Ohlone speaking peoples, and other villages were being taken to Mission Dolores, and that Mission Sonoma, built in 1823, was baptizing tribal members until secularization of the missions in 1833. Their traditional lifeways apparently disappeared by 1810 due to disruption by Euro-American diseases, a declining birth rate, and the impact of the mission system. After secularization of the missions between 1834 and 1836, some Native Americans returned to traditional religious and subsistence practices while others labored on Mexican ranchos. Thus, multi-ethnic Indian communities grew up in and around the area and provided informant testimony to ethnologists from 1878 to 1933.[33]

Mexican Period (1821-1848)

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

[31] Levy, R. 1978. Costanoan. In California, edited by Robert F. Heizer, pp. 485-495. Handbook of North American Indians, Vol. 8. W.G. Sturtevant, general editor, Smithsonian Institution, Washington D.C.

[32] Jones, T.L. and Kathryn A. Klar. 2007. California Prehistory. Lanham: AltaMira Press; Rowman & Littlefield Publishers, Inc.

[33] Hart, James D. 1987. A Companion to California.

assumed authority of Sonoma Mission and established a rapport 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.

Shoup and Milliken state that mission secularization removed the social protection and support on which Native Americans had come to rely. It exposed them to further exploitation by outside interests, often forcing them into a marginal existence as laborers for large ranchos.[34] Following mission secularization, the Mexican population grew as the Native American population continued to decline. Euro-American settlers began to arrive in California during this period and often married into Mexican families, becoming Mexican citizens, which made them eligible to receive land grants. In 1846, on the eve of the U.S.-Mexican War (1846 to 1848), the estimated population of California was 8,000 non-natives and 10,000 Native Americans. However, these estimates have been debated. Cook suggests the Native American population was 100,000 in 1850; the U.S. Census of 1880 reports the Native American population as 20,385.[35]

Gold Rush and American Expansion Period (1848-1864)

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. 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 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.[36]

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.[37]

History of Contra Costa County

The east side of San Francisco Bay, directly across from the City of San Francisco, became known as the "opposite coast" (or contra costa) by the Spanish. The County was formed in December of 1849 and is one of the original 27 California counties, with the County seat at Martinez.[38] Contra Costa County, like much of California, was seen as a land of economic opportunity, not just for its mining

[34] Shoup, Laurence H., and Randall T. Milliken. 1999. Inigo of Rancho Posolmi: The Life and Times of a Mission Indian.
[35] Cook, Sherburne F. 1976. The Population of the California Indians 1769–1970.
[36] Robinson, W.W. 1948. Land in California.
[37] Beck, Warren A., and Ynez D. Haase. 1974. Historical Atlas of California.
[38] Hoover, Mildred B., et al. Historic Spots in California. 5th Edition.

resources but also for its productive land where farmers could cultivate a variety of crops. Agriculture became important in the California economy in the late 1850s, and through to the 1860s, homesteading became a means by which people could own and operate a family farm. The decidedly agricultural focus also underpins the historical significance of the Spanish colonial and Mexican era of land grants. As early as 1882, special interests advertised the County's virtues as a place to cultivate crops. Early settlers began to speak of beneficial soils that support a range of crops—pears, prunes, peaches, almonds, walnuts, and grapes flourished—with seasonal rainfall, and favorable climates. In addition, the County is strategically located near San Francisco. Large-scale commercial operations began to capitalize on mechanical innovations just as irrigation developed in the early 1880s. Consequently, competing economic interests caused land prices to increase and make family farming a less profitable enterprise.

Throughout the 1960s and 1970s, large companies followed their employees to suburban areas east of San Francisco. The establishment of large population centers fostered the development of equally large shopping centers. To meet demand on infrastructure, the State modernized highways and roadways, and established the Bay Area Rapid Transit (BART).

Records Searches and Pedestrian Survey to Identify Existing Cultural Resources

The following is derived from the Basin Research Associates' 2019 revised Archaeological Resources Assessment Report, which can be found in Appendix D.

Northwest Information Center

As part of the preparation of the Archaeological Resources Assessment, Basin Research Associates conducted a records search at the Northwest Information Center (NWIC) located at California State University Sonoma for any recorded resources or reports within the project site and the adjacent 0.25-mile radius beyond the project boundaries. 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 list, the California Points of Historical Interest list, and the California Built Environment Resources Directory (BERD) were reviewed to determine the existence of previously documented local historical resources.

The results of the records search identified three cultural resources, two of which are prehistoric archaeological sites and one of which is historic. In addition, three area-specific survey reports are on file with the NWIC for the project site, indicating that portions of the project site have been previously surveyed for cultural resources. No evidence of the recorded archaeological resources or any additional unrecorded cultural resources were noted during the pedestrian survey.

Native American Heritage Commission Record Search

On June 27, 2017, a letter was sent 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 July 7, 2017, indicating that the Sacred Lands File failed to indicate the presence of Native American cultural resources in the project site. The NAHC included a list of six 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 July 12, 2017. On May 14, 2018, the Lead Agency (Contra Costa County) initiated AB 52 Consultation with Wilton Rancheria. Wilton Rancheria replied on November 19, 2019, with a letter expressing concerns over potential impacts to TCRs, and included proposed mitigation measures to reduce those impacts to a less-than-significant level. No additional responses have been received to date.

Cultural Resources Pedestrian Survey

A pedestrian archaeological field review was completed for the proposed project on September 22, 2017, by Mr. Christopher Canzonieri, MA, RPA, an Archaeologist meeting the Standards of the Secretary of the Interior. The descriptions that follow reflect the project site conditions in September 2017. The project area consists of two parcels separated by a chain-link fence. Both parcels have residences (circa 1950s) and ancillary buildings (circa 1950s) present as well as features (e.g., drainage ditches, culverts, irrigation pipes, wells, etc.) associated with former nursery use.

The west parcel, 506 Brookside Drive, is generally open space. Two houses, an ancillary building, a shed with a large vehicle port, and a greenhouse are located within the property on Niemeyer Road, a private unimproved road. Field transects were oriented east to west and spaced between 20-30 meters apart. Visibility within the parcel was extremely limited due to the presence of vegetation with overall surface visibility less than 5 percent. Observed sediments consisted of grayish brown clayey silt with angular gravel. No native sediment appears to be present on the surface.

The east parcel is at 550, 560, and 580 Brookside Drive. The majority of the property is open with the exception of three houses, a garage, and an ancillary building. Field transects were oriented east to west and spaced at 20-30 meters apart. Visibility within the lot was good with 50-75 percent of the surface observable. However, little to no native soil was present. The majority of the surface is covered in angular gravel and greenhouse glass. An open earthen culvert is located along the north side of the property with two buried pipes (east end and west end). No prehistoric or historic archaeological resources were noted during the field inventory including any indications of the previously recorded sites.

Historic Resources Assessment

California Register or Historical Resources and Local Listing Eligibility Evaluation

A Historic Resource Evaluation of eligible on-site structures was conducted for 506 Brookside Drive by Left Coast Architectural History on September 28, 2018, and updated in April 2020.[39] The Historic Resource Evaluation noted 11 buildings and structures older than 45 years on the project site. Each structure is listed in Table 3.4-1 below.

Table 3.4-1: Buildings Observed on the Project Site in August 2018

Parcel Number	Street Address	Buildings on Parcel	Date of Construction/Alterations
408-204-004	506 Brookside Drive	Three buildings: residence, greenhouse, and large shed	House and greenhouse, 1954; shed pre-1948, replaced or enlarged early 1980s

[39] 45 years old (1973) or older per California Office of Historic Preservation guidance.

Parcel Number	Street Address	Buildings on Parcel	Date of Construction/Alterations
408-204-005	540 Brookside Drive	Three buildings: residence and two warehouses	House circa 1913(?); replaced/remodeled circa 1950, L-shaped addition added 1970s; warehouses built between 1958–1968
408-204-012	550 Brookside Drive	Three buildings: Residence, barn, and garage	All buildings built circa 1920
408-204-010	560 Brookside Drive	One residence	1952
408-204-011	580 Brookside Drive	One residence	1952

A site visit was performed on August 28, 2018, by Caitlin Hibma to view and photograph the property, component building and structures, and surrounding context.

Research was performed online and at local repositories, including the Richmond Museum of History and Rosie the Riveter World War II Home Front National Park, Ancestry.com, and NETR Historic Aerials. A variety of newspaper articles and historic studies pertaining to the Japanese American cut flower industry and nursery properties in Richmond were also consulted. Specific sources are listed in the Sources Cited section of each attached inventory record (DPR 523 forms).

California Department of Parks and Recreation (DPR) 523 series forms (appended) were created for each property (that is, each distinct Assessor's Parcel Number [APN]), which include physical descriptions of the site and each building or structure located thereon, contextual history of Japanese American cut flower nurseries, and a property-specific history of the development of each parcel. Each set of DPR 523 forms culminates in an evaluation and determination of eligibility for the CRHR, which establishes each property's status as a Historic Resource according to the California Environmental Quality Act (CEQA) Guidelines.

Current Historic Status

A historic evaluation of the former 11 buildings and structures older than 45 years was conducted by Left Coast Architectural History on September 28, 2018, and updated in April 2020. None of the properties appeared to be eligible for the CRHR or qualified as historic resources under CEQA; all structures were subsequently demolished in 2019. A detailed description and historical evaluation of each property conducted by Left Coast Architectural History can be found in Appendix D.

Summary of Existing Cultural Resources

Archaeological Resources

The NWIC record research identified three cultural resources, two of which are prehistoric archaeological sites and one of which is historic. In addition, archaeological site testing of the project site was conducted using 18 augur units. One augur unit uncovered a weakly developed midden site. Six archaeological resources have been recorded near the area since the early 1900s.

The project site appears to have a high sensitivity for archaeological resources based on previous archaeological research including site testing. The presence of San Pablo Creek to the north, Wildcat Creek to the south, and the marsh bordering San Pablo Bay approximately 0.75 mile to the northwest increases the possibility that previously undiscovered archaeological and cultural resources may be found during subsurface construction activities.

Tribal Cultural Resources

A letter was sent to the NAHC in an effort to determine whether any sacred sites are listed on its Sacred Lands File for the project site on June 27, 2017. The Sacred Lands File failed to indicate the presence of Native American cultural resources on the project site. The NAHC included a list of six 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 July 12, 2017. On May 14, 2018, the Lead Agency initiated AB 52 Consultation with Wilton Rancheria. Wilton Rancheria replied on November 19, 2019, with a letter expressing concerns over potential impacts to TCRs, and included proposed mitigation measures to reduce those impacts to a less-than-significant level. No additional responses have been received to date.

3.4.3 - 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; or
- 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 the 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 (NAGPRA) 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 to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a

resource 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 n 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. Cultural resources are recognized as nonrenewable resources and receive additional protection under the Public Resources Code and CEQA.

CEQA Guidelines Section 15064.5(a)(3)—California Register of Historical Resources Criteria

As defined by CEQA Guidelines, Section 15064.5(a)(3)(A-D), a resource shall be considered historically significant if the resource meets the criteria for listing on the CRHR. 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.

California Public Resources Code Section 5024.1—California Register of Historical Resources

Section 5024.1 of the Public Resources Code states that the CRHR is a guide to be used by State and local agencies, private groups, and citizens to identify the State's historical resources and to indicate what properties are to be protected from substantial adverse change. Administration of the CRHR is to be overseen by the NAHC. Section 5024.1 indicates that the register shall include historical resources determined by the NAHC, according to adopted procedures, to be significant and to meet the criteria in subdivision (c).

CEQA Guidelines 15064.5(c)—Effects on Archaeological Resources

CEQA Guidelines state that a resource need not be listed on any register to be found historically significant. CEQA Guidelines direct lead agencies to evaluate archaeological sites to determine whether they meet the criteria for listing in the CRHR. 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. 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 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)).

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

SB 18 (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 frame has been agreed upon by the tribe), indicating whether 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

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 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 CR 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 discussed above.

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," and 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.

(b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

(c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

Health and Safety Code Section 7050.5 (Treatment of Human Remains)

Section 7050.5 of the California 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"[40] except under circumstances as provided in Section 5097.99 of the Public Resources Code. The regulations also provide 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 (Discovery of Human Remains)

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."[41] 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.

[40] State of California. 1987. Health and Safety Code Section 7050.5.
[41] State of California. 2009. Public Resources Code Section 5097.98.

Local

Contra Costa County General Plan

Open Space Element

The Open Space chapter of the General Plan contains the following goals and policies related to the protection of cultural resources that are relevant to this analysis:

Goal 9-G Identify and preserve important archaeological and historic resources within the County.

Policies

Policy 9-28 Areas which have identifiable and important archaeological or historic significance shall be preserved for such uses, preferably in public ownership.

Policy 9-29 Buildings or structures that have visual merit and historic value shall be protected.

Policy 9-30 Development surrounding areas of historic significance shall have compatible and high-quality design in order to protect and enhance the historic quality of the area.

Policy 9-31 Within the Southeast County area, applicants for subdivision or land use permits to allow non-residential uses shall provide information to the County on the nature and extent of the archaeological resources that exist in the area. The County Planning Agency shall be responsible for determining the balance between multiple use of the land and protection of resources.

Contra Costa County Historic Resources Inventory

The County maintains a Historic Resource Inventory.[42] The most recent version was updated in July 2019 and contains a list of historic resources organized by area. None of the listed resources are located within the project site.

3.4.4 - Impacts and Mitigation Measures

Significance Criteria

According to CEQA Guidelines Appendix G Environmental Checklist, to determine whether impacts related to cultural resources and TCRs result in significant environmental effects, the following questions are analyzed and evaluated. Would the proposed project:

a) Cause a substantial adverse change in the significance of a historical resource as pursuant to Section 15064.5?

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

c) Disturb any human remains, including those interred outside of formal cemeteries?

[42] Contra Costa County Conservation and Development, Community Development Division. 2019. Historic Resources Inventory. July.

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?

Approach to Analysis

This evaluation focuses on whether implementation of the proposed project would impact historic architectural, archaeological resources, human remains, or TCRs.

The proposed project may have an impact on a historical resource if construction of the proposed project would impair a resource's eligibility for inclusion in the CRHR. Analysis is based on information collected from record searches at the NWIC, additional archival research, pedestrian surveys, and information from historic architectural assessment of existing properties more than 45 years in age located within the project boundaries. If an identified impact would leave a resource no longer able to convey its significance, meaning that the resource would no longer be eligible for listing in the CRHR, then the proposed project's impact would be considered a significant adverse change. According to Public Resources Code Section 15126.4(b)(1) (CEQA Guidelines), if a project adheres to the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, then the project's impact "shall generally be considered mitigated below a level of significance and thus is not significant."

The proposed project may have an impact on an archaeological resource or human remains if construction of the proposed project would physically damage or destroy archaeological data or human remains (including those interred outside of formal cemeteries). Analysis is based on information collected from record searches at the NWIC, the additional archival research, and pedestrian surveys.

Both direct and indirect effects of project implementation were considered for this analysis. Direct impacts are typically associated with construction and/or ground-disturbing activities, and have the potential to immediately alter, diminish, or destroy all or part of the character and quality of archaeological resources and/or historic architecture. Indirect impacts are typically associated with post-project implementation conditions that have the potential to alter or diminish the historical setting of a cultural resource (generally historic architecture) by introducing visual intrusions on existing historical structures that are considered undesirable.

The TCR impact analysis is based on information collected from record searches at the NAHC and information from tribal consultation conducted pursuant to AB 52. Impacts are typically associated with construction and/or ground-disturbing activities that have the potential to immediately alter, diminish, or destroy all or part of the character and quality of Native American Artifacts and/or human remains that could be uncovered.

Specific Thresholds of Significance

For purposes of this analysis, the following thresholds are used to evaluate the significance of cultural resources materials and TCRs impacts resulting from implementation of the proposed project.

- Impair a historic resource's eligibility ability to convey its significance (i.e., affect a resources' inclusion in the NRHP or CRHR) or not adhere to the Secretary of Interior's Standards for Rehabilitation.
- Physically damage or destroy archaeological data or human remains.
- Impair a tribal cultural resource's ability to convey its significance as defined by Public Resources Code Section 21074.
- Physically damage, destroy, or otherwise adversely impact a site, feature, place, or cultural landscape with cultural value to a California Native American tribe and that is a resource determined by Contra Costa County, 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.

Impacts Evaluation

Historic Resources

Impact CUL-1:	**The proposed project could cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.**

Construction

A Historic Resource Evaluation of eligible on-site structures was conducted for 506 Brookside Drive by Left Coast Architectural History on September 28, 2018, and updated in April 2020. Eleven former buildings and structures older than 45 years were located on the project site in 2018. However, none of the properties appeared to be eligible for the CRHR or qualified as historic resources under CEQA; all structures were subsequently demolished in 2019 (Appendix D).

Subsurface construction activities always have the potential to damage or destroy previously undiscovered historic resources such as wood, stone, foundations, and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramic, and other refuse, if encountered. This would present a potentially significant impact related to historic resources.

Implementation of Mitigation Measure (MM) CUL-1, which requires cultural resources sensitivity training for construction staff and the presence of qualified Archaeological Monitor during any grading or trenching would reduce potential impacts to historic resources that may be discovered during project construction. MM CUL-1 is also applicable to the off-site improvements that involve

digging or trenching, including the installation of sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, and extension of waterlines. If a potential resource is identified, construction would be required to stop until appropriate identification and treatment measures are implemented. Therefore, direct and indirect impacts related to historic resources would be less than significant with mitigation.

Operation

Impacts related to a project's potential to cause a substantial adverse change in the significance of a historical resource are limited to construction impacts. No respective direct or indirect operational impacts related to historical resources would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM CUL-1 Worker Training, Archaeological Monitoring, and Halt Construction Upon Encountering Historical or Archaeological Materials

Prior to the initiation of construction activities, an Archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for archaeology shall provide Worker Environmental Awareness Program (WEAP) training to construction personnel with an overview of applicable laws, project mitigation measures, and procedures to be followed with regards to historical and/or archaeological resources that may be encountered over the course of the project. An Archaeologist should be present to monitor all ground-disturbance activities. In the event a potentially significant historical and/or archaeological 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 has evaluated the situation. The applicant for the proposed project (CenterPoint Properties) 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 shall make recommendations concerning appropriate measures that shall be implemented to protect the resource, including but not limited to excavation and evaluation of the finds in accordance with Section 15064.5 of the CEQA Guidelines. 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 Contra Costa County Department of Conservation and Development, the Northwest Information Center (NWIC), and the California Office of Historic Preservation (OHP), as required.

Level of Significance After Mitigation

Less than significant impact.

Archaeological Resources

Impact CUL-2:	**The proposed project could cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.**

Construction

The NWIC record research identified three cultural resources, two of which are prehistoric archaeological sites and one of which is historic. In addition, archaeological site testing of the project site was conducted using 18 augur units. One augur unit uncovered a weakly developed midden site. Six archaeological resources have been recorded near the area since the early 1900s.

The project site appears to have a high sensitivity for archaeological resources based on previous archaeological research including site testing. The presence of San Pablo Creek to the north, Wildcat Creek to the south, and the marsh bordering San Pablo Bay approximately 0.75 mile to the northwest increases the possibility that previously undiscovered archaeological and cultural resources may be found during subsurface construction activities. This represents a potentially significant impact related to archaeological resources.

Implementation of MM CUL-1, which requires cultural resources sensitivity training for construction staff and the presence of qualified Archaeological Monitor during any grading or trenching would reduce potential impacts to historic resources that may be discovered during project construction. MM CUL-1 is also applicable to the off-site improvements that involve digging or trenching, including the installation of sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, and extension of waterlines. If a potential resource 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.

Operation

Impacts related to a project's potential to cause a substantial adverse change in the significance of an archaeological resource are limited to construction impacts. No respective direct or indirect operational impacts related to archaeological resource would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement MM CUL-1.

Level of Significance After Mitigation

Less than significant impact.

Human Remains

Impact CUL-3: The proposed project could disturb human remains, including those interred outside of formal cemeteries.

Construction

No human remains or cemeteries are known to exist within or near the project site. However, there is always the possibility that subsurface construction activities associated with the proposed project, such as trenching and grading, could potentially damage or destroy previously undiscovered human remains. This represents a potentially significant impact related to human remains.

However, in the unlikely event human remains are discovered, both within the project site and within the areas proposed for the off-site improvements, implementation of MM CUL-3 would require that work is halted, and the County Coroner is called to make a determination as to the nature of the remains and to confirm next steps regarding contacting the NAHC and appropriate tribal representatives. Therefore, with implementation of MM CUL-3 and compliance with CEQA Guidelines, direct and indirect impacts related to disturbance of human remains would be less than significant with mitigation.

Operation

Impacts related to a project's potential to disturb human remains are limited to construction impacts. No respective direct or indirect operational impacts related to human remains would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM CUL-3 Stop Construction upon Encountering Human Remains

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 Resources Code Section 5097.98.

2. Where the following conditions occur, the landowner or his or her authorized representative shall work with the Coroner to rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the MLD if available or on the project site or off-site where the reburial would not be 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 NAHC.
    - 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.

Level of Significance After Mitigation

Less than significant impact.

Significance of Tribal Cultural Resource and Eligibility for California Register Listing

Impact CUL-4:	**The proposed project could cause a substantial adverse change in the significance of a Tribal Cultural Resource 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).**

Construction

An NWIC Records search and NAHC Sacred Lands File search failed to identify any listed TCRs that may be adversely affected by the proposed project. It remains possible, however, that potentially eligible TCRs may be encountered during project construction. This concern was expressed by Wilton Rancheria in a letter received on November 19, 2019, that included recommended mitigation measures to reduce impacts to TCRs. These mitigation measures, consisting of MM CUL-4a, which requires Native American monitoring during earthmoving activity, and implementation of MM CUL-4b, which details procedures for treatment and avoidance, would reduce potential impacts to TCRs that may be discovered during project construction. If a potential resource is identified, construction would be required to stop until appropriate identification and treatment measures are implemented. Therefore, direct and indirect impacts related to TCRs would be less than significant with mitigation.

Operation

Impacts related to a project's potential to cause a substantial adverse change in the significance of a State listed or eligible tribal cultural resource are limited to construction impacts. No respective operational impacts would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM CUL-4a Native American Construction Monitoring

To minimize the potential for destruction of or damage to existing or previously undiscovered burials, archaeological and Tribal Cultural Resources (TCRs) and to identify any such resources at the earliest possible time during project-related earthmoving activities, the project applicant and its construction contractor(s) shall implement the following measures:

- Native American Monitors from culturally affiliated Native American Tribes shall be invited to monitor the vegetation grubbing, stripping, grading or other ground-disturbing activities in the project area to determine the presence or absence of any cultural resources. Native American representatives from cultural affiliated Native American Tribes shall act as a representative of their Tribal Government and shall be consulted before any cultural studies or ground-disturbing activities begin.
- Native American representatives and Native American Monitors have the authority to identify sites or objects of significance to Native Americans and to request that work be stopped, diverted, or slowed if such sites or objects are identified within the direct impact area. Only a Native American representative can recommend appropriate treatment of such sites or objects.
- If buried cultural resources, such as chipped or ground stone, historic debris, building foundations, or bone, are discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until an Archaeologist who meets the Secretary of the Interior' s qualification standards can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the County, the California Office of Historic Preservation (OHP), and other appropriate agencies. Appropriate treatment measures may include development of avoidance or protection methods, archaeological excavations to recover important information about the resource, research, or other actions determined during consultation.

MM CUL-4b Avoidance and Preservation in place of Tribal Cultural Resources

Should Tribal Cultural Resources (TCRs) be discovered during project construction, avoidance and preservation in place is the preferred manner of mitigating impacts to TCRs and shall be accomplished by several means, including:

- Planning construction to avoid TCRs, archaeological sites and/ or other resources; incorporating sites within parks, green-space, or other open space; covering archaeological sites; deeding a site to a permanent conservation easement; or other preservation and protection methods agreeable to consulting parties and regulatory authorities with jurisdiction over the activity. As noted in Mitigation Measure CUL-4a, appropriate treatment measures may include archaeological excavations to recover information about the resource. Recommendations for

avoidance of cultural resources shall be reviewed by the CEQA Lead Agency representative (Contra Costa County), interested Native American Tribes and the appropriate agencies, in light of factors such as costs, logistics, feasibility, design, technology and social, cultural and environmental considerations, and the extent to which avoidance is consistent with project objectives. If feasible, avoidance and design alternatives may include realignment within the project area to avoid cultural resources, modification of the design to eliminate or reduce impacts to cultural resources or modification or realignment to avoid highly significant features within a cultural resource. Native American representatives from interested Native American Tribes shall be allowed to review and comment on these analyses and shall have the opportunity to meet with the CEQA Lead Agency (Contra Costa County) representative and its representatives who have technical expertise to identify and recommend feasible avoidance and design alternatives, so that appropriate and feasible avoidance and design alternatives can be identified.

- If the resource can be avoided, the construction contractor(s), with Native American Monitors from culturally affiliated Native American Tribes present, shall install protective fencing outside the site boundary, including a buffer area, before construction restarts. The construction contractor(s) shall maintain the protective fencing throughout construction to avoid the site during all remaining phases of construction. The area shall be demarcated as an "Environmentally Sensitive Area." Native American representatives from interested Native American Tribes and the CEQA Lead Agency (Contra Costa County) representative shall also consult to develop measures for long-term management of the resource and routine operation and maintenance within culturally sensitive areas that retain resource integrity, including tribal cultural integrity, and including archaeological material, Traditional cultural properties and cultural landscapes, in accordance with State and federal guidance including National Register Bulletin 30 (Guidelines for Evaluating and Documenting Rural Historic Landscapes), Bulletin 36 (Guidelines for Evaluating and Registering Archaeological Properties), and Bulletin 38 (Guidelines for Evaluating and Documenting Traditional Cultural Properties); National Park Service Preservation Brief 36 (Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes) and using the Advisory Council on Historic Preservation (ACHP) Native American Traditional Cultural Landscapes Action Plan for further guidance. Use of temporary and permanent form of protective fencing shall be determined in consultation with the Native American representatives from interested Native American Tribes.

Level of Significance After Mitigation

Less than significant impact.

Significance of Tribal Cultural Resource and Eligibility as Determined by Lead Agency

Impact CUL-5: The proposed project could cause a substantial adverse change in the significance of a Tribal Cultural 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.

Construction

A letter was sent to the NAHC in an effort to determine whether any sacred sites are listed on its Sacred Lands File for the project site on June 27, 2017. The Sacred Lands File failed to indicate the presence of Native American cultural resources in the project site. The NAHC included a list of six 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 July 12, 2017. On May 14, 2018, the Lead Agency (Contra Costa County) initiated AB 52 Consultation with Wilton Rancheria. A response was received from Wilton Rancheria on November 19, 2019, that included recommended mitigation measures to reduce impacts to TCRs. No additional responses have been received to date.

The County, in its capacity as Lead Agency, has also not identified or determined any known TCRs to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. Although there is the possibility that previously undiscovered TCRs could be encountered by subsurface earthwork activities associated with the proposed project, the implementation of construction MM CUL-4a and MM CUL-4b, provided by Wilton Rancheria, would reduce these potential impacts to a less-than-significant level.

Operation

Impacts related to a project's potential to cause a substantial adverse change in the significance of a State listed or eligible tribal cultural resource are limited to construction impacts. No respective operational impacts would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement MM CUL-4a and MM CUL-4b.

Level of Significance After Mitigation

Less than significant impact.

3.4.5 - Cumulative Impacts

The geographic scope of the cumulative cultural resources analysis is the project vicinity. 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 itself, the area near the project site would be the area most affected by

project activities (generally within a 0.5-mile radius). The results of the cultural resources assessment and tribal consultation indicate that the proposed project would not have a direct impact on any known historic resources, archaeological resources, human remains, or TCRs.

Construction activities associated with development projects in the project vicinity may have the potential to encounter undiscovered cultural resources. These projects would be required to mitigate for impacts through compliance with applicable federal and State laws governing cultural resources. Although there is the possibility that previously undiscovered resources could be encountered by subsurface earthwork activities associated with the cumulative projects, the implementation of construction mitigation measures would ensure that undiscovered cultural resources are not adversely affected by cumulative project-related construction activities, which would prevent the destruction or degradation of potentially significant cultural resources. The implementation of comprehensive mitigation measures for the cumulative projects and the proposed project would result in a less than significant with mitigation cumulative impact related to cultural resources.

Level of Cumulative Significance Before Mitigation

Potentially significant impact.

Cumulative Mitigation Measures

Implement MM CUL-1 through MM CUL-4b.

Level of Cumulative Significance After Mitigation

Less than significant impact.

THIS PAGE INTENTIONALLY LEFT BLANK

3.5 - Energy

3.5.1 - Introduction

This section describes the existing energy setting in the project area as well as the relevant regulatory framework. This section also evaluates the possible impacts related to energy that could result from implementation of the proposed project. Information in this section is based on project-specific energy calculation outputs included in Appendix B. No comments were received during the Notice of Preparation (NOP) scoping period related to energy.

3.5.2 - Existing Setting

Energy Basics

Energy is generally transmitted either in the form of electricity, measured in kilowatts (kW)[1] or megawatts (MW),[2] or natural gas measured in British Thermal Units (BTU), or cubic feet.[3] Fuel, such as gasoline or diesel, is measured in gallons or liters.

Electricity

Electricity is used primarily for lighting, appliances, and other uses associated with the proposed project.

Natural Gas

Natural gas uses primarily are heating, water heating, and cooking, and is typically associated with commercial and residential uses.

Fuel

Fuel use is primarily for powering off-road equipment, trucks, and passenger vehicles. Typical fuel types are diesel and gasoline.

Electricity Generation, Distribution, and Use

State of California

The State of California generated approximately 200,475 gigawatt-hours (GWh) of electricity in 2019. Approximately 43 percent of the in-state electricity generation is sourced from natural gas, 32.1 percent from renewable sources (i.e., solar, wind, and geothermal), 16.5 percent from large hydroelectric sources, and the remaining 8.4 percent is sourced from coal, nuclear, oil, and other non-renewable sources.[4]

---

[1] 1 kW = 1,000 watts; A watt is a derived unit of power that measure 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.

[2] 1 MW = 1 million watts

[3] A unit for quantity of heat that equals 100,000 British thermal units. A British thermal unit 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.

[4] California Energy Commission (CEC). 2019. 2019 Total System Electric Generation. Website: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation/2019#:~:text=In%202019%2C%20total%20generation%20for,to%2055%20percent%20in%202018. Accessed March 22, 2021.

In 2019, California ranked second in the nation in conventional hydroelectric generation and first as a producer of electricity from solar, geothermal, and biomass resources.[5] Electricity and natural gas are distributed through 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.[6]

Contra Costa County

Pacific Gas & Electric Company (PG&E) provides electricity to many of the cities throughout Contra Costa County. In April 2018, Marin Clean Energy became the primary electricity provider for several of these cities and portions of unincorporated Contra Costa County.[7] Most of the County's energy is consumed by residential activities (41 percent), followed by major industrial activities (34 percent) and all other nonresidential activities (25 percent).[8]

Project Site

The project site is currently vacant and does not consume electricity under existing conditions. PG&E provides electricity to the project site.

Natural Gas Generation, Distribution, and Use

State of California

Natural gas continues to play an important and varied role in California; however, California continues to depend on out-of-state imports for nearly 90 percent of its natural gas supply.[9] The State's net natural gas production for 2019 was approximately 193.9 billion cubic feet, representing a decrease of approximately 4.3 percent from 2018 production.[10]

In 2019, California consumed a total of 2,217.2 trillion BTU of natural gas,[11] with approximately 26.5 percent going directly to electricity generation.[12] Residential natural gas demand accounted for approximately 21.7 percent of California's total natural gas demand in 2019.[13]

[5] United States Energy Information Administration. 2021. California State Profile and Energy Estimates. February 18. Website: https://www.eia.gov/state/?sid=CA. Accessed March 26, 2021.
[6] California Energy Commission (CEC). 2021. Electric load serving entities (LSEs) in California. Website: https://www.energy.ca.gov/almanac/electricity_data/utilities.html. Accessed March 26, 2021.
[7] Marin Clean Energy (MCE). 2019. MCE Member Communities. Website: https://www.mcecleanenergy.org/member-communities/. Accessed April 12, 2021.
[8] Contra Costa County. 2015. Contra Costa County Climate Action Plan. Website: https://www.contracosta.ca.gov/DocumentCenter/View/39791/Contra-Costa-County-Climate-Action-Plan. Accessed April 12, 2021.
[9] 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 April 12, 2021.
[10] United States Energy Information Administration (EIA). 2021. Natural Gas Gross Withdrawals and Production. May. Website: https://www.eia.gov/dnav/ng/ng_prod_sum_a_EPG0_VGM_mmcf_a.htm. Accessed April 12, 2021.
[11] California Energy Commission (CEC). 2020. Gas Consumption by County. Website: https://ecdms.energy.ca.gov/gasbycounty.aspx. Accessed January 28, 2021.
[12] United States Energy Information Administration (EIA). 2019. Table F18: Natural Gas Consumption Estimates, 2019. Website: https://www.eia.gov/state/seds/sep_fuel/html/pdf/fuel_use_ng.pdf. Accessed April 12, 2021.
[13] Ibid.

Contra Costa County

As noted in Chapter 2, Project Description, PG&E provides natural gas to the unincorporated portions of Contra Costa County.

Project Site

The project site is currently vacant and does not consume any natural gas under existing conditions. Natural gas for the project site is provided by PG&E.[14]

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.[15] In 2020, foreign suppliers, led by Saudi Arabia, provided over half of the crude oil refined in California.[16] According to the United States Energy Information Administration (EIA), California's field production of crude oil has steadily declined since the mid-1980s, totaling approximately 144.3 million barrels in 2020.[17]

According to the EIA, transportation accounted for nearly 40 percent of California's total energy demand, amounting to approximately 3,170 trillion BTU in 2018.[18] California's transportation sector, including rail and aviation, consumed roughly 584 million barrels of petroleum fuels in 2018.[19] In 2018, petroleum-based fuels were used for approximately 86 percent of the State's total transportation activity.[20] 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 13,473 million gallons of gasoline and 3,086 million gallons of diesel.[21]

[14] Pacific Gas & Electric Company (PG&E). 2014. Gas Service Area Maps. Website: https://www.pge.com/tariffs/assets/pdf/tariffbook/GAS_MAPS_Service_Area_Map.pdf. Accessed April 12, 2021.
[15] California Energy Commission (CEC). 2021. 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 April 12, 2021.
[16] California Energy Commission (CEC). 2021. Foreign Sources of Crude Oil Imports to California 2020. Website: https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/foreign-sources-crude-oil-imports. Accessed April 12, 2021.
[17] United States Energy Information Administration (EIA). 2021. California Field Production of Crude Oil. Website: https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPCA1&f=A. Accessed April 12, 2021.
[18] United States Energy Information Administration (EIA). 2018. Table F33: Total Energy Consumption, Price, and Expenditure Estimates, 2018. Website: https://www.eia.gov/state/seds/sep_fuel/html/pdf/fuel_te.pdf. Accessed April 12, 2021.
[19] United States Energy Information Administration (EIA). 2018. Table F16: Total Petroleum Consumption Estimates, 2018. April 24. Website: https://www.eia.gov/state/seds/sep_fuel/html/pdf/fuel_use_pa.pdf. Accessed April 12, 2021.
[20] United States Energy Information Administration (EIA). 2018. Table F33: Total Energy Consumption, Price, and Expenditure Estimates, 2018. Website: https://www.eia.gov/state/seds/sep_fuel/html/pdf/fuel_te.pdf. Accessed April 12, 2021.
[21] California Energy Commission (CEC). 2021. California Retail Fuel Outlet Annual Reporting (CEC-A15) Results. Website: https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting. Accessed April 12, 2021.

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 Senate Bill (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, only one is located in Concord. No other hydrogen refueling stations exist in the County or any incorporated cities therein.[22,23] Currently, 10 public biodiesel refueling stations are in California, with none of them in the County or any incorporated cities therein.[24]

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 12,696 EV charging stations.[25]

Project Site

The project site is vacant and does not consume vehicle fuel under existing conditions.

3.5.3 - Regulatory Framework

Federal

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; and
- Requiring the United States Environmental Protection Agency (EPA) to apply lifecycle greenhouse gas (GHG) emissions performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

[22] 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 January 28, 2021.
[23] United State Department of Energy, Alternative Fuels Data Center. 2020. Alternative Fueling Station Counts by State. June. Website: https://afdc.energy.gov/stations/states. Accessed January 28, 2021.
[24] Ibid.
[25] United States Department of Energy. 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 March 31, 2021.

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, the Energy Independence and Security Act (EISA) of 2007 aims to:

- Move the United States toward greater energy independence and security;
- Increase the production of clean renewable fuels;
- Protect consumers;
- Increase the efficiency of products, buildings, and vehicles;
- Promote research on and deploy GHG capture and storage options;
- Improve the energy performance of the federal government; and
- Increase United States energy security, develop renewable fuel production, and improve vehicle fuel economy.

The 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.

The EPA is committed to developing, implementing, and revising both regulations and voluntary programs under the following subtitles in EISA, among others:

- Increased Corporate Average Fuel Economy Standards
- Federal Vehicle Fleets
- Renewable Fuel Standard
- Biofuels Infrastructure
- Carbon Capture and Sequestration[26]

EPA and National Highway Traffic Safety Administration Light-Duty Vehicle GHG 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, President Obama 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 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.

[26] United States Environment Protection Agency (EPA). 2019. Summary of the Energy Independence and Security Act. Website: https://www.epa.gov/laws-regulations/summary-energy-independence-and-security-act. Accessed April 12, 2021.

The first phase of the national program would apply 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 million metric tons 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.[27] 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 (mpg) if achieved exclusively through fuel economy improvements.

The EPA and NHTSA issued final rules for the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses on September 15, 2011, which became effective November 14, 2011. For combination tractors, the agencies are proposing engine and vehicle standards that began in the 2014 model year and achieve up to a 20 percent reduction in CO_2 emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10 percent reduction for gasoline vehicles, and a 15 percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10 percent reduction in fuel consumption and CO_2 emissions from the 2014 to 2018 model years.

The State of California has received a waiver from the EPA to have separate, stricter Corporate Average Fuel Economy 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, Assembly Bill (AB) 1575 created the CEC in 1975.

State

California AB 1493: Pavley Regulations and Fuel Efficiency Standards

California AB 1493, enacted on July 22, 2002, required the California Air Resources Board (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

[27] 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. August. Website: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockey=P100EZ7C.PDF. Accessed April 12, 2021.

EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011.[28]

The standards are to be phased in during the 2009 through 2016 model years. When fully phased in, the near-term (2009–2012) standards will result in an approximately 22 percent reduction compared with the 2002 fleet, and the mid-term (2013–2016) standards will result in about a 30 percent reduction.

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 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.[29]

California Code of Regulations Title 13: Motor Vehicles

California Code of Regulations, Title 13: Division 3, Chapter 10, Article 1, Section 2485: Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling.[30] This measure seeks to reduce public exposure to diesel particulate matter and other air contaminants by establishing idling restrictions, emission standards, and other requirements for heavy-duty diesel engines and alternative idle reduction technologies to limit the idling of diesel-fueled commercial motor vehicles. Any person that owns, operates, or causes to operate any diesel-fueled commercial motor vehicle must not allow a vehicle to idle for more than 5 consecutive minutes at any location, or operate a diesel-fueled auxiliary power system for greater than 5 minutes at any location when within 100 feet of a restricted area.

California Code of Regulations, Title 13: Division 3, Chapter 9, Article 4.8, Section 2449: General Requirements for In-Use Off-Road Diesel-Fueled Fleets. This measure regulates oxides of nitrogen (NO_X), diesel particulate matter (DPM), and other criteria pollutant emissions from in-use off-road diesel-fueled vehicles. This measure also requires each fleet to meet fleet average requirements or demonstrate that it has met "best available control technology" requirements. Additionally, this measure requires medium and large fleets to have a written idling policy that is made available to operators of the vehicles informing them that idling is limited to 5 consecutive minutes or less.

---

[28] California Air Resources Board (ARB). 2021. California's Greenhouse Gas Vehicle Emission Standards under Assembly Bill 1493 of 2002 (Pavley). Website: https://ww2.arb.ca.gov/californias-greenhouse-gas-vehicle-emission-standards-under-assembly-bill-1493-2002-pavley. Accessed April 12, 2021.

[29] California Air Resources Board (ARB). 2011. Status of Scoping Plan Recommended Measures. Website: https://calcarbondash.org/cc/scopingplan/sp_measures_implementation_timeline.pdf. Accessed April 12, 2021.

[30] Thomas Reuters Westlaw. 2019. California Code of Regulations, Title 13. Motor Vehicles. Website: https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=I143B9530D46811DE8879F88E8B0DAAAE&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default). Accessed April 12, 2021.

California Senate Bill 1078: Renewable Electricity Standards

On September 12, 2002, Governor Gray Davis signed SB 1078, requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewables Portfolio Standard (RPS) target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Governor Schwarzenegger also directed the ARB (Executive Order S-21-09) to adopt a regulation by July 31, 2010, requiring the State's LSEs to meet a 33 percent renewable energy target by 2020. The ARB Board approved the Renewable Electricity Standard on September 23, 2010, by Resolution 10-23.

California SB 350: Clean Energy and Pollution Reduction Act

In 2015, the State legislature approved, and the Governor signed SB 350 which reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the 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 electrify transmission markets and to improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.[31]

California Code of Regulations Title 24

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 2016 Building Energy Efficiency Standards went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards are scheduled to go into effect on January 1, 2020.

[31] 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 April 12, 2021.

Part 11 (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 in effect January 1, 2011. The Code is updated on a regular basis, with the most recent update consisting of the 2016 California Green Building Code Standards that became effective January 1, 2017.[32] 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 and demolition ordinances, and defers to them as the ruling guidance provided, they provide a minimum 50 percent diversion requirement. The Code also provides exemptions for areas not served by construction and demolition recycling infrastructure. 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.

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 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.

Local

Contra Costa County General Plan

Conservation Element

The County has renewable energy sources, in the form of wind energy and solar power that have yet to be fully utilized. Chapter 8, the Conservation Element of the General Plan, contains the following goals and policies pertaining to the County's renewable energy resources.[33]

Goal 8-K To encourage the use of renewable resources where they are compatible with the maintenance of environmental quality.

Goal 8-L To reduce energy use in the County to avoid risks of air pollution and energy shortages which could prevent orderly development.

Implementation Measure 8-bs

Include provisions for solar access within design review of projects.

Contra Costa County Climate Action Plan

In 2005, the County established a Climate Change Working Group to coordinate County efforts to respond to climate change, and to guide practices that result in more sustainable actions.[34] On

[32] California Building Standards Commission (CBC). 2016. Green Building Standards. Website: https://www.ladbs.org/docs/default-source/publications/code-amendments/2016-calgreen_complete.pdf?sfvrsn=6. Accessed April 12, 2021.

[33] Contra Costa County. 2005. Contra Costa County General Plan. January 18. Website: http://www.co.contra-costa.ca.us/4732/General-Plan. Accessed April 12, 2021.

[34] Contra Costa County. 2015. Contra Costa County Climate Action Plan. Website:

December 15, 2015, the County's Climate Action Plan (CAP) was approved by the Board of Supervisors.[35] Many County policies and initiatives support this effort, including:

- The Contra Costa County Municipal CAP,[36] which includes a range of policies promoting energy efficiency and renewable energy;
- Bay Area Regional Energy Network,[37] a collaboration of the nine counties that make up the Bay Area that implements energy savings programs on a regional level;
- Energy conservation policies and programs designed to reduce energy demand through home weatherization programs and green building guidelines; and,
- Alternative energy policies that will reduce GHG emissions through supporting appropriate renewable energy projects and encouraging energy recovery projects.

3.5.4 - Impacts and Mitigation Measures

According to the California Environmental Quality Act (CEQA) Guidelines Appendix G Environmental Checklist, to determine whether impacts related to energy are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

b) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Approach to Analysis

For the purposes of this Draft EIR, the approach to analysis for energy use is based on 2021 CEQA Guidelines Appendix F (Energy Conservation). CEQA Guidelines Appendix F is focused on the goal of conserving energy through the wise and efficient use of energy. Estimates of energy consumption associated with the proposed project are based, in part, on information provided by the California Emissions Estimator Model (CalEEMod) output included in this Draft EIR as Appendix B. CalEEMod contains energy intensity rates for the various land uses selected; see Section 3.7, Greenhouse Gas Emissions-Approach to Analysis, for detailed information regarding how project-specific energy estimates are determined.

Renewable Energy/Energy Efficiency Plan Consistency Determination Methodology

The proposed project is assessed for whether the proposed project would conflict with or obstruct a State or local plan for renewable energy or energy efficiency. To achieve this, the proposed project is assessed for its consistency with State goals and plans related to energy efficiency and renewable energy.

https://www.contracosta.ca.gov/DocumentCenter/View/39791/Contra-Costa-County-Climate-Action-Plan. Accessed April 12, 2021.

[35] Contra Costa County. 2015. Contra Costa County Climate Action Plan. Website: https://www.contracosta.ca.gov/DocumentCenter/View/39791/Contra-Costa-County-Climate-Action-Plan. Accessed April 12, 2021.

[36] Contra Costa County. 2008. Contra Costa County Municipal Climate Action Plan. December. Website: https://www.contracosta.ca.gov/DocumentCenter/View/2905/Municipal-Climate-Action-Plan-1208-Attachment-A?bidId=. Accessed April 12, 2021.

[37] Association of Bay Area Governments (ABAG). BayREN. Website: https://www.bayren.org/. Accessed April 12, 2021.

Specific Thresholds of Significance

The County does not have quantitative thresholds for evaluation of energy; however, the following qualitative thresholds are used to evaluate the significance of energy impacts resulting from implementation of the project.

- Result in a wasteful, inefficient, or unnecessary consumption of energy during construction and operational activities; or
- Construction and operation of buildings and appliances that would not adhere to the energy use reduction measures included in the California Green Building Code and required by Contra Costa County.

Impact Evaluation

Energy Use

Impact ENER-1:	**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.**

A significant impact would occur if the proposed project would result in the inefficient, wasteful, or unnecessary use of energy.

Construction

At the time the analysis began, the anticipated construction schedule for the proposed project was assumed to begin in November 2020 and conclude in December 2021. Construction is now expected to commence in late 2021 and would still occur over a 13-month period. Since the construction schedule would move to later years because time has elapsed since preparation of this document, 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 demolition, 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., demolition, site clearing, and grading), and the actual construction of the building. 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 construction of the proposed project could include gasoline- and diesel-powered construction and transportation equipment, including trucks, bulldozers, frontend loaders, forklifts, and cranes. Construction equipment is estimated to consume a total of 436,597 gallons of diesel fuel over the entire construction duration (Appendix B).

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 EMission FACtors (EMFAC) mobile source emission model. The specific parameters used to estimate

fuel usage are included in Appendix B. In total, the proposed project is estimated to generate 1,765,173 Vehicle Miles Traveled (VMT) and a combined 69,242 gallons of gasoline and diesel for vehicle travel during construction.

Other equipment could include construction lighting, field services (office trailers), and electrically driven equipment such as pumps and other tools. Singlewide mobile office trailers, which are commonly used in construction staging areas, generally range in size from 160 square feet to 720 square feet. A typical 720-square-foot office trailer would consume approximately 13,998 kWh during the 1.1-year construction phase (Appendix B).

The proposed project's construction is 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 in order 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. As such, the opportunities for future efficiency gains during construction are limited. 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. Project energy consumption is summarized in Table 3.5-1.

Table 3.5-1: Unmitigated Annual Project Energy Consumption

Energy Consumption Activity	Annual Consumption	
Electricity Consumption	6,760,296 kWh/year	
Natural Gas Consumption	10,638,039 kBTU/year	
Total Fuel Consumption	Year 2021	181,237,174 gallons of diesel and gasoline
	Year 2023	172,785,355 gallons of diesel and gasoline
	Year 2025	156,233,649 gallons of diesel and gasoline
	Year 2027	150,951,262 gallons of diesel and gasoline

Notes:
kWh = kilowatt-hour
kBTU = kilo-British Thermal Unit
Operational fuel consumption based on EMFAC2014 Emissions Inventory, Vehicle Classification (Fleet Mix) EMFAC2007 Categories. The calculations are for the year 2025 when the proposed project will be operational and for Contra Costa County, where the proposed project is located (Appendix B).

Unmitigated operation of the proposed project would consume an estimated 6,760,296 kWh of electricity and an estimated 10,638,039 kBTU of natural gas on an annual basis. The proposed project's buildings would be designed and constructed in accordance with the County's latest adopted energy efficiency standards, which are based on the State's Building Energy Efficiency Standards. These are widely regarded as the most advanced building energy efficiency standards and compliance would ensure that building energy consumption would not be wasteful, inefficient, or unnecessary.

Based on the default CalEEMod electricity rates adjusted to reflect the increased energy efficiency associated with the 2019 Building Energy Efficiency Standards, the proposed project would generate an electricity demand of 6,760,296 kWh/year. The proposed photovoltaic (PV) system is estimated to generate up to 8,083,000 kWh/year of renewable electricity. Thus, for purposes of this analysis, it is assumed 100 percent of the proposed project's building electricity demand would be provided by the PV system.

Project-related vehicle trips would consume fuel throughout the life of the proposed project due to project employee vehicles, delivery vehicles, and heavy-duty trucks. This analysis evaluated operational fuel consumption based on the proposed project's operational assumptions, which include increasing zero emission delivery vehicle and heavy-duty truck use. As shown in Table 3.5-2, heavy-duty trucks would be zero emission by year 2025 and delivery vehicles would be 100 percent zero emission by 2027.

Table 3.5-2: Proposed Project Fuel Type Assumptions

Vehicle Equipment	Fuel Type			
	Year 2021	Year 2023	Year 2025	Year 2027
Off-Road Equipment	Zero Emission	Zero Emission	Zero Emission	Zero Emission
Delivery Vehicles	33% Zero Emission/67% Diesel	65% Zero Emission/35% Diesel	80% Zero Emission/20% Diesel	100% Zero Emission
Drayage Trucks	100% Zero Emission	100% Zero Emission	100% Zero Emission	100% Zero Emission
Heavy-Duty Trucks	100% Model Year 2014 or Later Diesel	100% Model Year 2014 or Later Diesel	100% Zero Emission	100% Zero Emission

Notes:
Fuel Type and emissions are based on the proposed project design features (Appendix B).

In total, the proposed project would consume 181,237,174 gallons of gasoline and diesel per year starting in 2021, 172,785,355 gallons per year starting in 2023, 156,233,649 gallons per year starting in 2025, and 150,951,262 gallons per year starting in 2027. The majority of operational emissions would be from employee vehicle emissions, which would be regulated by State and federal policies and could not be feasibly mitigated by the proposed project or County. As a result, project

operational vehicles would be entirely zero emission by 2027. Regional access to the project site is provided by Richmond Parkway via Interstate 80 (I-80) and Interstate 580 (I-580), which are within 2 miles of the project site. Thus, transportation fuel consumption would not be wasteful, inefficient, or unnecessary. Impacts would be less than significant.

Level of Significance

Less than significant impact.

Energy Efficiency and Renewable Energy Standards Consistency

Impact ENER-2: The proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

A significant impact would occur if the proposed project would conflict with or obstruct a State or local plan for renewable energy or energy efficiency. The County has developed a CAP which contains several energy efficiency goals and measures which would relate to the proposed project. In addition, the County's General Plan Conservation Element contains several energy efficiency goals which would relate to the proposed project. This analysis is based on consistency with State goals and plans related to energy efficiency and renewable energy as well as relevant goals and measures contained in the County's CAP and General Plan Conservation Element.

The proposed project would be designed in accordance with Title 24, California's Energy Efficiency Standards for Nonresidential Buildings. These standards include minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., heating, ventilation, and air conditioning [HVAC] and water heating systems), and indoor and outdoor lighting. The incorporation of the Title 24 standards into the design of the proposed project would ensure that the proposed project would not result in the use of energy in a wasteful manner. Furthermore, the proposed rooftop PV system is anticipated to satisfy 100 percent of the electricity demand for the proposed project.

The County's General Plan Conservation Element contains policies related to energy conservation that are relevant to the proposed project, such as Goal 8L, which aims to reduce energy use in the County, and Implementation Measure 8bs, which aims to ensure solar panels are included in new development. Compliance with Title 24 standards would ensure that the proposed project would not conflict with any of the Conservation Element energy conservation policies related to the proposed project's building envelope, mechanical systems, and indoor and outdoor lighting. Moreover, as previously illustrated in Table 3.7-10, Contra Costa County Climate Action Plan Consistency, the proposed project would be consistent with the GHG reduction measures contained in the County's CAP, which are closely related to and include energy efficiency measures.

In addition, as discussed under Impact GHG-1, the proposed project would be required to implement MM GHG-1b and MM GHG-1c, which each would require the installation of EV charging infrastructure and establish preferential parking for low-emitting, fuel-efficient, and carpool/van vehicles beyond what would otherwise be required by the California Building Code or County Municipal Code. As stipulated by MM GHG-1b, the proposed project would be required to ensure that parking be designed to accommodate a number of EV charging stations as prescribed by the

Tier 2 Nonresidential Voluntary Measures of the California Green Building Standards Code, Section A5.106.5.3.2. As the proposed project would develop greater than 200 parking spaces total (438 auto parking spaces and 266 trailer parking spaces), MM GHG-1b would require the installation of EV charging stations that equal no less than 8 percent of total parking spaces, or 57 EV charging stations. Similarly, as stipulated by MM GHG-1c, the proposed project would be required to ensure that parking be designed to accommodate a number of preferential parking stalls as prescribed by the Tier 2 Nonresidential Voluntary Measures of the California Green Building Standards Code, Section A5.106.5.1.2. As the proposed project would develop greater than 200 parking spaces total (438 auto parking spaces and 266 trailer parking spaces), MM GHG-1c would require the establishment of preferential parking stalls for low-emitting, fuel-efficient, and carpool/van vehicles that equal no less than 12 percent of total parking spaces, or 84 parking stalls. The implementation of these measures would ensure that the proposed project includes EV charging infrastructure beyond what would otherwise be required by the California Building Code and County Municipal Code to support the future use of EVs and reduce the potential consumption of transportation fuels.

The proposed project would comply with existing State energy standards and be consistent with the energy efficiency goals and measures contained in the County's General Plan Conservation Element and CAP. 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

Less than significant impact.

3.5.5 - Cumulative Impacts

The geographic scope of the cumulative energy analysis is the portion of PG&E's service area that covers incorporated and unincorporated Contra Costa County. Cumulative projects considered as part of this cumulative analysis include the proposed project and other cumulative projects identified in Chapter 3, Environmental Impact Analysis, Table 3.1, Cumulative Projects.

Electricity and Natural Gas

Cumulative projects would be required to comply with Title 24 Building Energy Efficiency Standards and CALGreen. The cumulative buildings would be designed in accordance with Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings as applicable. 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. Future development would also be required to meet even more stringent energy efficiency requirements through local and Statewide policy, such as Title 24, Part 6, which would require that newly constructed residential homes include on-site photovoltaic solar systems, with some exceptions. Furthermore, PG&E, which supplies electricity to the project area, would be required by SB 100 to incrementally increase the proportion of renewable electricity generation supplying its in-state retail sales until it reaches 100 percent carbon-free electricity generation by 2045. Moreover, the proposed project would not contribute to PG&E's cumulative electricity supply as 100 percent of the proposed project's base electricity is anticipated to be satisfied with the proposed rooftop PV system. Nonetheless, the incorporation of these regulations into the design of the cumulative

projects, including the proposed project, would ensure that the cumulative projects would not result in the inefficient, unnecessary, or wasteful consumption of electricity or natural gas, and impacts would be less than significant.

The proposed project's energy use would be limited to that which is necessary for the construction and operation of the proposed project. The proposed project would comply with Statewide and local policies pertaining to energy efficiency and would reasonably pursue greater energy efficiencies in its operation in the interest of reducing operating costs. As such, the proposed project's incremental contribution to potential cumulative impacts would be less than significant related to energy consumption in the form of electricity and natural gas.

Fuel

Cumulative projects would be required to comply with California Code of Regulations Title 13, Sections 2449(d)(3) and 2485, that limit idling from both on-road and off-road diesel-powered equipment and are enforced by the ARB. Additionally, various federal and State regulations, including the LCFS, Pavley Clean Car Standards, and LEV Program, would serve to reduce the transportation fuel demand of cumulative projects. Compliance with these regulations by the cumulative projects, including the proposed project, would ensure that the cumulative projects would not result in the inefficient, unnecessary, or wasteful consumption of fuel and the cumulative impact would be less than significant. Therefore, the proposed project would have a less than cumulatively considerable impact with respect to significant cumulative impacts related to the wasteful or inefficient use of energy.

Level of Cumulative Significance

Less than significant impact.

3.6 - Geology and Soils

This section describes existing conditions related to geology and soils in the region and project area as well as the relevant regulatory framework. This section also evaluates the possible impacts related to geology and soils that could result from implementation of the proposed project. Information included in this section is based on the Contra Costa County General Plan (General Plan) and the United States Geological Survey (USGS). Additional resources include the Geotechnical Investigation prepared by Cornerstone Earth Group (Cornerstone), and the Paleontological Records Search prepared by Consulting Paleontologist, Kenneth Finger, PhD, which are included in Appendix E. No comments were received during the Notice of Preparation (NOP) comment period related to geology and soils.

3.6.1 - Environmental Setting

Geologic Setting

Contra Costa County Area

Contra Costa County (County) is in the Coast Ranges geomorphic province of California. The Coast Ranges have experienced a complex geological history characterized by Late Tertiary folding and faulting that has resulted in a series of northwest trending mountain ranges and intervening valleys. Bedrock in the Coast Ranges consists of igneous, metamorphic, and sedimentary rocks that range in age from Jurassic to Pleistocene. The present physiography and geology of the Coast Ranges are the result of deformation and deposition along the tectonic boundary between the North American plate and the Pacific plate. Plate boundary fault movements are largely concentrated along the well-known fault zones in the area, which include the San Andreas, Hayward, and Calaveras Faults, as well as other lesser-order faults.

Several northwest trending fault systems dominate the geology of the County, dividing it into large blocks of rock. For example, binding the Briones Hills is the Hayward Fault on the west and elements of the Franklin-Calaveras fault system on the east. Within a particular block the rock sequence consists of: (1) a basement complex of broken and jumbled pre-Tertiary sedimentary, igneous and metamorphic rocks; (2) a section of younger Tertiary sedimentary rocks and some volcanic rocks (flows and tuffs) that locally intertongue with and overlie the sedimentary section; and (3) surficial deposits including stream alluvium, colluvium (slopewash deposits at the foot of steeper slopes), slides, alluvial fans, and Bay Plain deposits.[1]

Project Site

The project site is located within the western portion of the County and is relatively flat, with elevations ranging between approximately 12 to 20 feet above mean sea level, with a gentle downward slope to the northwest, towards San Pablo Bay.

[1] Contra Costa County Department of Conservation and Development. 2005. Contra Costa County General Plan. January 18.

Existing Soils

Corrosive soils are a geologic hazard, because they react with concrete and ferrous metals, which can cause damage to foundations and buried pipelines. Expansive soils are a geologic hazard, because an increase in soil volume can exert forces on structures and, thus, damage building foundations, walls, and floors. In general, areas are susceptible to differential settlement if underlain by compressible sediments, such as poorly engineered artificial fill or loose unconsolidated alluvial sediments. When these soils dry out and shrink, structural damage can occur.

Contra Costa County

The United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) has characterized the majority of native, undisturbed soils in the County according to three soil associations: (1) nearly level to strongly sloping, somewhat excessively drained to very poorly drained soils on valley fill, basins, low terraces, flood plains, and alluvial fans; (2) nearly level, poorly drained and very poorly drained soils on the Delta, flood plains, and saltwater marshes and tidal flats; and (3) nearly level to very steep, moderately well drained to excessively drained soils on terraces and mountainous uplands.[2]

Project Site

As part of the Geotechnical Investigation, Cornerstone Earth Group (Cornerstone) conducted seven soil borings. These borings determined project site soils consist of clays and sands to the maximum explored depths of 20 to 40 feet beneath the project site surface. The clays consisted of soft to very stiff lean clays with some amounts of sand. The sands encountered in the soil borings were less than three feet thick and generally consisted of loose to dense silty and clayey sands and poorly graded sands.

Soils at the project site have the potential to undergo settlement under new building loads. Additionally, expansive soils are present on the project site. Expansive soils are susceptible to shrinking and swelling during rain events, which can cause building foundations to crack, potentially resulting in building structural failure. In addition, test results from the soil samples taken as part of the Geotechnical Investigation determined that there are liquefiable soils present on the project site. Liquefaction occurs when loosely packed, water saturated soils at or near the ground surface loses their strength during seismic ground shaking and essentially function as a liquid. When soils experience liquefaction, buildings and structures can experience major damage and result in significant loss of life and property. The project site does not contain steep slopes, steep channel banks, exposed hillsides, or vertical cuts, all of which could contribute to the potential for landslides.

Seismicity

The term seismicity describes the effects of seismic waves that radiate from an earthquake fault in motion. 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. Seismicity can result in seismic-related hazards such as fault rupture, ground

[2] United States Department of Agriculture (USDA). Natural Resources Conservation Service Web Soil Survey. 2021. General Soil Map: Contra Costa County, California.

shaking, and liquefaction. Faults form in rocks when stresses overcome the internal strength of the rock, and fault rupture occurs when movement on a fault breaks through to the surface and can result in damage to infrastructure and persons. Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking. Strong ground shaking from an earthquake can result in damage, with buildings shifted off their foundations and underground pipes broken. Liquefaction occurs when an earthquake causes ground shaking resulting in saturated soil to lose shear strength, deform, and act like a liquid. When liquefaction occurs, it can result in ground failure that can result in damage to roads, pipelines, and buildings.

Contra Costa County Area

The County is within an area of high seismicity; more than 10 severe earthquakes have affected the San Francisco Bay Region during the recent historic time.[3] Six major Bay Area earthquakes have occurred since 1800 that affected the County, and at least two of the faults that produced them run through or into the County. These earthquakes and the originating faults include the 1836 and 1868 earthquakes on the Hayward Fault, and the 1861 earthquake on the Calaveras Fault. Two earthquakes, in 1838 and 1906, originated on the San Andreas Fault, west of the County near San Francisco or to the south, while one earthquake (with two major shocks) that caused some damage in the County occurred in 1872 and was centered north of the County in the Vacaville-Winters area of Solano County.[4] These latter events likely occurred on a thrust fault and are not known to have been accompanied by surface fault rupture. A smaller earthquake, centered near Collinsville in Solano County on a fault of uncertain identity, occurred in 1889.

The County Conservation and Development Department developed an earthquake probability estimate for faults that may affect the County, shown in Table 3.6-1 (Table 10-4 of the General Plan). This information predicts that structures built in the County are likely to experience a severely damaging earthquake during their useful life.[5]

Table 3.6-1: Approximate Probability of Occurrence of Earthquakes on Selected Bay Area Faults (50-year Period)

Causative Fault	Magnitude	Approximate Probability of Occurrence (over a 50-year period)
San Andreas Fault	7.0–8.0	Likely[1]
	8.0–8.5	Intermediate[2]
Hayward Fault	6.0–7.0	Likely
	7.0–7.5	Intermediate
Calaveras Fault	6.0–7.0	Likely
	7.0–7.5	Intermediate-Low[3]

[3] Contra Costa County Department of Conservation and Development. 2005. Contra Costa County General Plan. January 18.
[4] Ibid.
[5] Ibid.

Causative Fault	Magnitude	Approximate Probability of Occurrence (over a 50-year period)
Concord Fault	5.0–6.0	Likely
	6.0–7.0	Intermediate-Low
Antioch Fault	5.0–6.0	Likely
	6.0–7.0	Intermediate-Low

Notes:
[1] Greater than 50 percent probability of occurrence
[2] A 15-50 percent probability of occurrence
[3] Less than 15 percent probability of occurrence
Source: Contra Costa County Department of Conservation and Development. 2005. Contra Costa County General Plan. January 18.

Project Site

The project site is located within a seismically active region that includes the Central and Northern Coast Mountain Ranges. The nearest known active fault zone is the Hayward Fault zone, which is mapped approximately 1.4 miles northeast of the project site (Exhibit 3.6-1). Other active faults in the region include the Rodgers Creek Fault (8.6 miles north); West Napa Fault (15.1 miles north); Concord Fault (15.5 miles northeast); Green Valley Fault (16 miles northeast); San Andreas Fault (16.2 miles west); and Cordelia Fault (20 miles northeast).[6,7] An "active" fault is defined as one that shows displacement within the last 11,000 years and, therefore, is considered more likely to generate a future earthquake than a fault that shows no sign of recent rupture. The project site is not located within an Alquist-Priolo Earthquake Fault Zone and no known surface expression of fault traces is known to cross the site.

Slope Disturbance

Slope disturbance from long-term geologic cycle of uplift, mass wasting, intense precipitation or wind, and gravity can result in slope failure in the form of mudslides and rock fall. 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 or wind, 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. Soil creep is a long-term, gradual downhill migration of soil under the influence of gravity and is generally on the order of a fraction of an inch per year. These soils can creep away downslope sides of foundations and reduce lateral support.

Liquefaction is another earthquake hazard that can result in slope disturbance. Liquefaction is a transformation of soil from a solid to a liquefied state during which saturated soil temporarily loses strength resulting from the buildup of excess pore water pressure. Soil susceptible to liquefaction

[6] Contra Costa County Department of Conservation and Development. 2005. Contra Costa County General Plan. January 18.
[7] United States Geological Survey (USGS). 2019. U.S. Quaternary Faults: Interactive Fault Map. Website: https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=5a6038b3a1684561a9b0aadf88412fcf. Accessed March 19, 2021.

includes loose to medium dense sand and gravel, low-plasticity silt, and some low-plasticity clay deposits. Four kinds of ground failure commonly result from liquefaction: lateral spread, flow failure, ground oscillation, and loss of bearing strength.[8]

Contra Costa County Area

The major geologic hazards in the County, aside from earthquake rupture and direct effects of ground shaking, are unstable hill slopes and reclaimed wetlands and marsh fill areas. Slopes may suffer landslides, slumping, soil slips, and rockslides. Reclaimed wetlands, whether filled or not, experience amplified lateral and vertical movements, which can be damaging to structures, utilities, and transportation routes and facilities.

The General Plan recognizes that major slope areas in excess of 26 percent are "not readily developable" and "undevelopable," recognizing the cost and engineering difficulties of grading steep slopes as well as their inherent unsuitability.[9] Figure 10-6 of the General Plan shows Landslide Hazards in the County.

Project Site

The project site is relatively flat, with no slopes or varied topography that could be susceptible to slope failure, landslides, or soil creep. According to Figure 10-6 of the General Plan, the project site is not located on a site susceptible to landslides or an area where landslides previously occurred.[10] Figure 10-5 of the General Plan indicates that the project site is classified "Generally High" liquefaction potential. It is pertinent to note that the classification "Generally High" does not imply the presence of liquefiable sands on a parcel. As detailed in the Geotechnical Investigation, there is a potential for liquefaction of localized sand layers during a significant seismic event. A total liquefaction-induced settlement up to approximately ¾ to 1 inch, resulting in differential settlement up to approximately ½ to 2/3 inch between independent foundation elements could occur. In addition, there is moderate potential for ground rupture at exploration EB-2/CPT-2 based on the existing site conditions.

Paleontological Resources

No known paleontological resources are located within the project site boundaries. The surface area of the project sites consists of Holocene alluvium, which is too young to contain fossils. The 0.5-mile search area around the project site boundary consists of Holocene bay mud and Holocene alluvium, both of which are too young to contain fossils. The absence of Pleistocene or older deposits in the search area suggests that any potential paleontological resources underlying the project site would be at depths below all the earth-disturbing construction activities at the project site.[11]

[8] Association of Bay Area Governments (ABAG). 2001. The Real Dirt on Liquefaction: A Guide to the Liquefaction Hazard in Future Earthquakes Affecting the San Francisco Bay Area. February.
[9] Contra Costa County Department of Conservation and Development. 2005. Contra Costa County General Plan. January 18.
[10] Ibid.
[11] Finger, Kenneth L. 2019. Paleontological Records Search for CenterPoint Properties Project. September 17.

3.6.2 - Regulatory Framework

Federal

National Earthquake Hazards Reduction Program

The National Earthquake Hazards Reduction Program (NEHRP) was established by the U.S. 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:

- 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
- 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.

Society of Vertebrate Paleontology Guidelines

The Society of Vertebrate Paleontology (SVP), a national scientific organization of professional Vertebrate Paleontologists, has established standard guidelines that outline acceptable professional

practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, specimen preparation, analysis, and curation. Most practicing professional Paleontologists in the nation adhere to the SVP's assessment, mitigation, and monitoring requirements, as specifically spelled out in its standard guidelines.[12]

State Regulations

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code [PRC] §§ 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. Except for 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."

California Building Code

The State of California provides minimum standards for building design through the California Building Standards Code (California Code of Regulations [CCR], Title 24). Where no other building codes apply, Chapter 29 regulates excavation, foundations, and retaining walls. The California

[12] The Society of Vertebrate Paleontology (SVP). 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Website: https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines-1.pdf. Accessed March 30, 2021,

Building Standards Code (CBC) applies to building design and construction in the State and is based on the federal Uniform Building Code (UBC) used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). The CBC has been modified for California conditions with more detailed and/or more stringent regulations.

The State earthquake protection law (California Health and Safety Code § 19100 *et seq*.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. The CBC identifies seismic factors that must be considered in structural design. Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, and Appendix Chapter A33 regulates grading activities, including drainage and erosion control and construction on unstable soils, such as expansive soils and areas subject to liquefaction.

The CBC contains specific requirements for seismic safety, excavation, foundations, retaining walls, and site demolition. It also regulates grading activities, including drainage and erosion control (Chapter 18, Appendix J). The 2019 CBC has been adopted by the County through Chapter 74-2 of the Contra Costa County Ordinance Code.

Local Regulations

Contra Costa County General Plan

The General Plan serves as the overall guiding policy document for the County. The following is a list of General Plan goals and policies most pertinent to the proposed project with respect to geology and soils.

General Plan Safety Element

Goal 10-A To protect human life and reduce the potential for serious injuries from earthquakes; and to reduce the risks of property losses from seismic disturbances, which could have severe economic and social consequences for the County as a whole.

Goal 10-B To reduce to a practical minimum injuries and health risks resulting from the effects of earthquake ground shaking on structures, facilities and utilities.

Goal 10-C To protect persons and property from the life-threatening, structurally and financially disastrous effects of ground rupture and fault creep on active faults, and to reduce structural distress caused by soil and rock weakness due to geologic faults.

Goal 10-D To reduce to a practical minimum the potential for life loss, injury and economic loss due to liquefaction-induced ground failure, levee failure, large lateral land movements toward bodies of water, and consequent flooding; and to mitigate the lesser consequences of liquefaction.

Policies

Policy 10-8 Ground conditions shall be a primary consideration in the selection of land use and in the design of development projects.

Policy 10-13 In areas where active or inactive earthquake faults have been identified, the location and/or design of any proposed buildings, facilities, or other development shall be modified to mitigate possible danger from fault rupture or creep.

Policy 10-14 Preparation of a geologic report shall be required as a prerequisite before authorization of public capital expenditures or private development projects in areas of known or suspected faulting.

Contra Costa County Ordinance Code

Building and Construction

Chapter 74-2 of the Contra Costa County Ordinance Code (Ordinance Code) adopts the 2019 CBC, with amendments, as the County's Building Code. As such, all new construction within the County is required to adhere to its seismic safety standards. The County Department of Conservation and Development is responsible for the administration and enforcement of the CBC.

Grading, Soils, and Erosion Control Ordinances

The Ordinance Code Division 716 contains the County's grading ordinance, which sets forth regulations for control of excavation, grading, earthwork construction, including fills or embankments and related work. Section 716-4.202 requires a grading permit for work on property on which a subdivision or development requiring approval of a tentative map is proposed, such as the proposed project, and that such a permit shall not be issued until reviewed by the Public Works Department for compliance with the requirements of Title 9, Subdivisions. As indicated in Title 9, Section 94-4.420, Soil Report, a preliminary soil investigation report is required and must be reviewed by a building inspector or designated representative. If the report is deemed complete in that the recommended action and procedures contained in the report are likely to prevent damage, the recommended actions and procedures contained in the report shall become a condition of approval and shall be incorporated in the proposed development.

3.6.3 - Impacts and Mitigation Measures

Significance Criteria

According to the California Environmental Quality Act (CEQA) Guidelines Appendix G Environmental Checklist, to determine whether impacts to geology and soils are significant environmental effects, the following questions are analyzed and evaluated. Would the proposed project:

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?

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Approach to Analysis

Impacts related to geology and soils were determined by reviewing information contained in the Geotechnical Investigation and Paleontological Records Search prepared for the project site, both of which are provided in Appendix E.

As part of the Geotechnical Investigation, Cornerstone completed seven borings in February 2018 drilled to depts of 20 to 40 feet, and eight Cone Penetration Tests on April 25, 2017, and January 26, 2018, advanced to depths of approximately 50 to 100 feet. Cornerstone also reviewed historical imagery.

Additional evaluations of potential geologic and soil impacts of the project site were based on review of available documentation, including the General Plan and information available from the Association of Bay Area Governments (ABAG) and the USGS.

Impacts to paleontological resources were determined by reviewing the Paleontological Records Search prepared for the project site by Consulting Paleontologist, Dr. Kenneth L. Finger.[13]

Specific Thresholds of Significance

For purposes of this analysis, the following thresholds are used to evaluate the significance of geology and soils impacts resulting from implementation of the proposed project.

- Place structures on or within the State designated zone of a known earthquake fault.
- Place structures where seismic ground shaking of a Strong level or greater according to the Mercalli Scale could occur.
- Place structures on soils prone to any level of liquefaction.
- Place structures on slopes greater than 15 percent or soils susceptible to failure as defined by the USGS.

[13] Finger, Kenneth L. 2019. Paleontological Records Search for CenterPoint Properties Warehouse Project. September 17.

- Place structures in areas without impervious surfaces or vegetation, or on slopes greater than 15 percent.
- Place structures on a geologic unit or soil that is unstable or that could become unstable.
- Place structures on expansive soil that has an expansion index greater than 20 as defined in Table 18-1-B of the UBC (1994).
- Place septic tanks or alternative wastewater disposal systems on soils incapable of supporting the use.
- Physically damage or destroy paleontological deposits.

3.6.4 - Project Impacts and Mitigation Measures

Earthquakes

Impact GEO-1: **The proposed project could 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.

Construction

Impacts related to risks associated with seismic-related hazards are limited to operational impacts. No respective construction impacts would occur.

Operation

i) Ground Rupture

Based on Geotechnical Investigation (Appendix E), the potential for ground rupture is low. There are no known active faults directly crossing the project site and the project site is not located within a designated Alquist-Priolo Earthquake Fault Zone. The closest fault to the project site is the Hayward Fault, approximately 1.4 miles northeast of the project site.[14,15] As such, it is unlikely for ground rupture to occur at the site. Thus, the proposed project, including the off-site improvements, would not expose people or structures to substantial adverse effects associated with fault rupture. Therefore, no impacts related to fault rupture would occur.

[14] State of California Department of Conservation. 2019. California Earthquake Hazards Zone Application. April 4. Website: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed March 19, 2021.

[15] United States Geological Survey (USGS). 2019. U.S. Quaternary Faults: Interactive Fault Map. Website: https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=5a6038b3a1684561a9b0aadf88412fcf. Accessed March 19, 2021.

ii) Strong Seismic Ground Shaking

The project site, including the areas proposed for off-site improvements, are in a seismically active region that could experience strong ground shaking during a seismic event. The closest fault to the project site is the Hayward Fault, approximately 1.4 miles northeast of the project site. Other active faults in the region include the Rodgers Creek Fault (8.6 miles north); West Napa Fault (15.1 miles north); Concord Fault (15.5 miles northeast); Green Valley Fault (16 miles northeast); San Andreas Fault (16 miles west); and Cordelia Fault (20 miles northeast). As such, the project site and areas proposed for off-site improvements could experience moderate to strong ground shaking from earthquakes along any of these active faults in the region. The intensity of ground shaking will depend on the characteristics of the fault, distance from the fault, magnitude and duration of the earthquake, and site-specific geologic conditions. The potential for strong seismic shaking at the project site is high and the Hayward Fault presents the highest potential for severe ground shaking at the project site. Potential impacts associated with strong seismic shaking at the project site, including the areas proposed for off-site improvements, include the potential to damage structures or improvements or result in the injury or loss of human life. This represents a potentially significant impact.

The Geotechnical Investigation provided recommendations for excavation, fill materials, fill placement and compaction, foundation design, ground improvements, site drainage considerations, underground utility design, pavement design, and building design to ensure new construction associated with the proposed project can withstand strong ground shaking. Mitigation Measure (MM) GEO-1a would ensure that the proposed project incorporates recommendations contained in the Geotechnical Investigation as well as all applicable seismic safety building standards contained in the CBC including seismic design provisions, which would reduce the risk of loss, injury, or death. MM GEO-1b would require the Project Engineer to prepare a final report that documents the field observations and testing services provided during construction as well as provide a professional opinion on the compliance of construction with the recommendations in the Geotechnical Investigation. MM GEO-1a and MM GEO-1b are also applicable to the off-site improvements that involve digging or trenching, including the installation of sidewalks, curbs, gutters, storm drain lines, bioretention swales, and extension of waterlines. Furthermore, the proposed project would be required to comply with Chapter 74-2 of the Ordinance Code, which requires all construction to conform to the 2019 CBC. As such, with implementation of MM GEO-1a and MM GEO-1b, the proposed project, including the off-site improvements, would not expose people or structures to substantial adverse effects associated with seismic ground shaking. Therefore, impacts would be less than significant with mitigation.

iii) Seismic-related Ground Failure

As detailed in the Geotechnical Investigation, project site soils consist of clays and sands. The clays consisted of soft to very stiff lean clays with some amounts of sand. The sands encountered in the soil borings were less than three feet thick and generally consisted of loose to dense silty and clayey sands and poorly graded sands. During a seismic event, ground rupture and lateral spreading could occur as a result of these sandy soils.

Ground shaking can induce settlement of loose to medium dense unsaturated sandy soils above the ground water table. Subsurface exploration performed by Cornerstone found that the unsaturated granular soils on the project site could experience up to 1/4-inch of total settlement following strong seismic shaking. The areas proposed for off-site improvements are likely to contain similar soil conditions.

There is a potential for liquefaction of the localized sand layers during a significant seismic event. A total liquefaction-induced settlement up to approximately ¾ to 1 inch, resulting in differential settlement up to approximately ½ to 2/3 inch between independent foundation elements, could occur. The areas proposed for off-site improvements are likely to contain similar soil conditions and susceptibility to liquefaction.

To minimize impacts related to liquefaction and other seismic-related ground failure, the Geotechnical Investigation includes earthwork recommendations that contain criteria for grading, excavation, and fill replacement. The recommendations included criteria for site preparation, fill material types, and fill compaction that would reduce the potential for soil settlement to the maximum extent practicable. Implementation of MM GEO-1a would ensure that the recommendations contained in the Geotechnical Investigation are incorporated into the proposed project construction and design plans. MM GEO-1b would require the Project Engineer to prepare a final report that documents the field observations and testing services provided during construction as well as provide a professional opinion on the compliance of construction with the recommendations in the Geotechnical Investigation. MM GEO-1a and MM GEO-1b are also applicable to the off-site improvements that involve digging or trenching, including the installation of sidewalks, curbs, gutters, storm drain lines, bioretention swales, and extension of waterlines. Therefore, impacts related to seismic-related ground failure, such as liquefaction, ground settlement, lateral spreading, and ground rupture would be less than significant with mitigation.

iv) Landslides

Susceptibility to landslide risk is increased where a property contains steep slopes, exposed hillsides or near-vertical cuts often found near creek banks. The project site, including the areas proposed for off-site improvements, do not contain steep slopes, exposed hillsides, or vertical cuts. Due to the gently sloping nature of the project site, including the areas proposed for off-site improvements, the potential for landslides is low. As a result, implementation of the proposed project, including the off-site improvements, would not expose people or structures to a landslide hazard, and impacts related to landslides would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact (ground shaking and liquefaction).

Mitigation Measures

MM GEO-1a Prepare Grading and Construction Plans that Incorporate Geotechnical Investigation Recommendations

Prior to issuance of the grading permits for the proposed project, development of the final grading, foundation, and construction plans shall incorporate the site-

specific earthwork, foundation, floor slab, finished grades, underground utilities, and pavement design recommendations, as detailed in the Geotechnical Investigation prepared by Cornerstone Earth Group dated August 22, 2018. The applicant shall coordinate with the County Department of Conservation and Development and County Geologist to tailor the grading and foundation plans, as needed, to reduce risk related to known soil and geologic hazards. The final grading, foundation, and construction plans for the proposed project shall be reviewed by the County Department of Conservation and Development and County Geologist. Grading operations shall meet the requirements of the recommendations included in the Preliminary Geotechnical Investigation prepared by Cornerstone Earth Group. During construction, the County Department of Conservation and Development shall monitor construction of the proposed project to ensure the earthwork operations are properly performed.

MM GEO-1b Prepare Final Construction Report

The Project Geotechnical Engineer shall prepare a final report that documents the field observations and testing services provided during construction as well as provide a professional opinion on the compliance of construction with the recommendations in the Geotechnical Investigation. The final report can be segmented into an as-graded report that is issued at the end of rough grading, but prior to the installation of the foundations, and a second letter commenting on the inspections made during installation of foundations/parking lot/drainage facilities. The County Department of Conservation and Development will place a hard hold on the final inspection, to ensure that the Geotechnical Engineer's grading-foundation inspection letter-report is provided prior to requesting the final building inspection for each building.

Level of Significance After Mitigation

Less than significant impact.

Soil Erosion or Topsoil Loss

Impact GEO-2: The proposed project would not result in substantial soil erosion or the loss of topsoil.

Construction

The demolition of the existing building foundations, impervious surfaces, and vegetation on the project site are anticipated to generate approximately 2,000 cubic yards of material, which would be removed from the project site. Approximately 131,415 cubic yards of soil would be imported to prepare the site for construction. Since the proposed project would disturb at least 1 acre of land during construction, it would be required to obtain a Construction General Permit from the California State Water Resources Control Board (State Water Board) consistent with the Contra Costa County's General Permit (No. CAS612008) and to comply with its conditions and requirements, which are designed to minimize potential erosion issues. Consistent with Section 1014-4.002 and

.004, compliance with the County's NPDES permit would ensure that a stormwater control plan is prepared and BMPs are implemented that would prevent sediments and other pollutants from entering the stormwater system. Thus, with adherence to these existing requirements, impacts from project construction on the project site, including the off-site improvements, would not result in substantial soil erosion or loss of topsoil. Therefore, construction-related impacts related to soil erosion and loss of topsoil would be less than significant.

Operation

Impacts related to soil erosion or loss of topsoil are limited to construction impacts. No respective operational impacts would occur.

Level of Significance

Less than significant impact.

Unstable Geologic Location

Impact GEO-3:	**The proposed project is located on a geologic unit or soil that could be unstable, or that could become unstable as a result of the project, and potentially result in settlement, an on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.**

Construction

Impacts related to risks associated with location on an unstable geologic unit or soil are limited to operational impacts. No respective construction impacts would occur.

Operation

As discussed previously in Impact GEO-1(iii), project site soils consist of clays and sands that are susceptible to ground rupture, lateral spreading, settlement, and liquefaction.

As discussed previously in Impact GEO-1(iv), the project site, including the areas proposed for off-site improvements, do not contain steep slopes, exposed hillsides, or vertical cuts. Due to the gently sloping nature of the project site, including the areas proposed for off-site improvements, the potential for landslides is low.

The Geotechnical Investigation identified the potential for settlement to occur on the project site. The additional new fill to the project site would cause settlement of the existing soils in addition to settlement from foundation loads or seismic settled. Based on the analysis, total settlement of 1/3 to 1 ¾ inches could occur from new fills to achieve building pad grades. Beneath the surficial undocumented fills encountered at Boring EB-2, loose to medium sense sandy soils were encountered to a depth of 5 ½ feet. These soils have a potential for increased total and differential settlements and will have lower bearing capacities. Soil settlement at the project site could result in unstable building conditions leading to building collapse or damage. This is a potentially significant impact.

In order to reduce or avoid potential impacts related to unstable soils or other ground failure, the Geotechnical Investigation includes recommendations for excavation, fill materials, fill placement

and compaction, foundation design, ground improvements, site drainage considerations, underground utility design, pavement design, and building design to prevent significant settlement of soils. MM GEO-1a would ensure that the recommendations contained in the Geotechnical Investigation are incorporated into the project grading and construction plans. MM GEO-1b would require the Project Engineer to prepare a final report that documents the field observations and testing services provided during construction as well as provide a professional opinion on the compliance of construction with the recommendations in the Geotechnical Investigation. MM GEO-1a and GEO-1b are also applicable to the off-site improvements. Therefore, impacts related to unstable soils or other ground failure would be less than significant with mitigation.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement MM GEO-1a and MM GEO-1b.

Level of Significance After Mitigation

Less than significant impact.

Expansive Soil

Impact GEO-4:	**The proposed project is 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.**

Construction

Impacts related to risks associated with location on expensive soil are limited to operational impacts. No respective construction impacts would occur.

Operation

The Geotechnical Investigation identified expansive soils on the project site. The areas proposed for off-site improvements are likely to contain similar soil conditions. Expansive soils can undergo significant volume change with changes in moisture content. They shrink and harden with dry and expand and soften when wet, which could cause building foundations to crack or heave resulting in substantial risks to life or property. This would represent a potentially significant impact related to expansive soil risks.

The Geotechnical Investigation includes recommendations for site preparation, excavation, and foundation design that would address the site-specific conditions related to expansive soils. Specifically, the Geotechnical Investigation recommends using a foundation that accounts for expansive soil conditions, using a positive drainage away from buildings, and limiting landscape watering to reduce expansion potential. Implementation of MM GEO-1a would ensure recommendations contained in the Geotechnical Investigation related to expansive soils are included in the design of the proposed project. MM GEO-1b would require the Project Engineer to prepare a final report that documents the field observations and testing services provided during construction as well as provide a professional opinion on the compliance of construction with the

recommendations in the Geotechnical Investigation related to expansive soils. MM GEO-1a and MM GEO-1b are also applicable to the off-site improvements that involve digging or trenching, including the installation of sidewalks, curbs, gutters, storm drain lines, bioretention swales, and extension of waterlines. As such, with implementation of MM GEO-1a and MM GEO-1b, the proposed project, including the off-site improvements, would not create a substantial risk to life or property from being located on expansive soils. Therefore, impacts related to expansive soils would be less than significant with mitigation.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement MM GEO-1a and MM GEO-1b.

Level of Significance After Mitigation

Less than significant impact.

Wastewater Disposal Systems

Impact GEO-5:	**The proposed project would not 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.**

Construction

Impacts related to soil capability of supporting the use of alternative wastewater disposal systems are limited to operational impacts. No respective construction impacts would occur.

Operation

The proposed project is located within an urbanized portion of the County, and does not propose the use of septic systems or other alternative wastewater disposal systems. The proposed project would include construction of wastewater infrastructure and connections to the existing sanitary sewer lines located within Fred Jackson Way and Brookside Drive rights-of-way. Wastewater treatment capacity impacts are discussed further in Section 3.14, Utilities and Service Systems. Thus, there would be no operational impact related to soil capability of supporting the use of alternative wastewater disposal systems.

Level of Significance

No impact.

Destruction of Paleontological Resource or Unique Geologic Feature

Impact GEO-6:	**The proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.**

Construction

No known paleontological resources are located within the project site boundaries. As detailed in the Paleontological Records Search (Appendix E), the surface area of the project sites consists of

Holocene alluvium, which is too young to contain fossils. The 0.5-mile search area around the project site boundary consists of Holocene bay mud and Holocene alluvium, both of which are too young to contain fossils. The absence of Pleistocene or older deposits in the search area suggests that any potential paleontological resources underlying the project site or areas proposed for off-site improvements would be at depths below all the earth-disturbing construction activities at the project site or within areas proposed for off-site improvements. In addition, there are no unique geological features located on the project site or within areas proposed for off-site improvements. Therefore, impacts related to destruction of paleontological resources or unique geologic features would be less than significant.

Operation

Impacts related to the proposed project's potential to cause substantial adverse change in the significance of a unique paleontological resource or unique geologic feature are limited to construction. No respective operational impacts would occur.

Level of Significance

Less than significant impact.

3.6.5 - Cumulative Impacts

The geographic scope of the cumulative analysis related to geology and soils is the project site and its vicinity. Adverse effects associated with geology and soils tend to be localized; therefore, an area generally within a 0.25-mile radius would be the area most affected by activities associated with the proposed project. The analysis considers the foreseeable development projects listed in Table 3-1 (See Chapter 3, Environmental Impact Analysis) in unincorporated Contra Costa County and the surrounding cities, in addition to the proposed project.

Seismic-related Hazards

Of the projects listed in Table 3-1, Projects 5, 6, 7, 9, 10, 12, 14, 16, and 18 are located within 0.25 mile of the project site. Cumulative projects, including the proposed project, have the potential to experience moderate to strong ground shaking from earthquakes. Projects listed in Table 3-1 would be exposed to the same ground shaking hazards and would be subject to the same requirements as the proposed project. Cumulative projects would adhere to the provisions of the CBC, policies of the General Plan, and the Ordinance Code to reduce potential hazards associated with seismic ground shaking and ground failure. As such, the proposed project, in conjunction with other projects, would not have a cumulatively significant impact associated with seismic-related hazards.

Soil-related Hazards

Soil conditions associated with the project site, such as liquefiable soils, expansive soils, and soil settlement are specific to the project site and generally do not contribute to a cumulative effect. Some or all other cumulative projects may have similar conditions, but they would not contribute to cumulative soil-related hazards. The proposed project would be subject to General Plan policies and the Ordinance Code to reduce soil-related hazards. Other current and future development/redevelopment projects in the region would similarly be required to adhere to

standards and practices that include stringent geologic and soil-related hazard mitigations. As such, the proposed project, in conjunction with other projects, would not have a cumulatively significant impact associated with soil-related hazards.

Paleontological Resources and Unique Geologic Feature

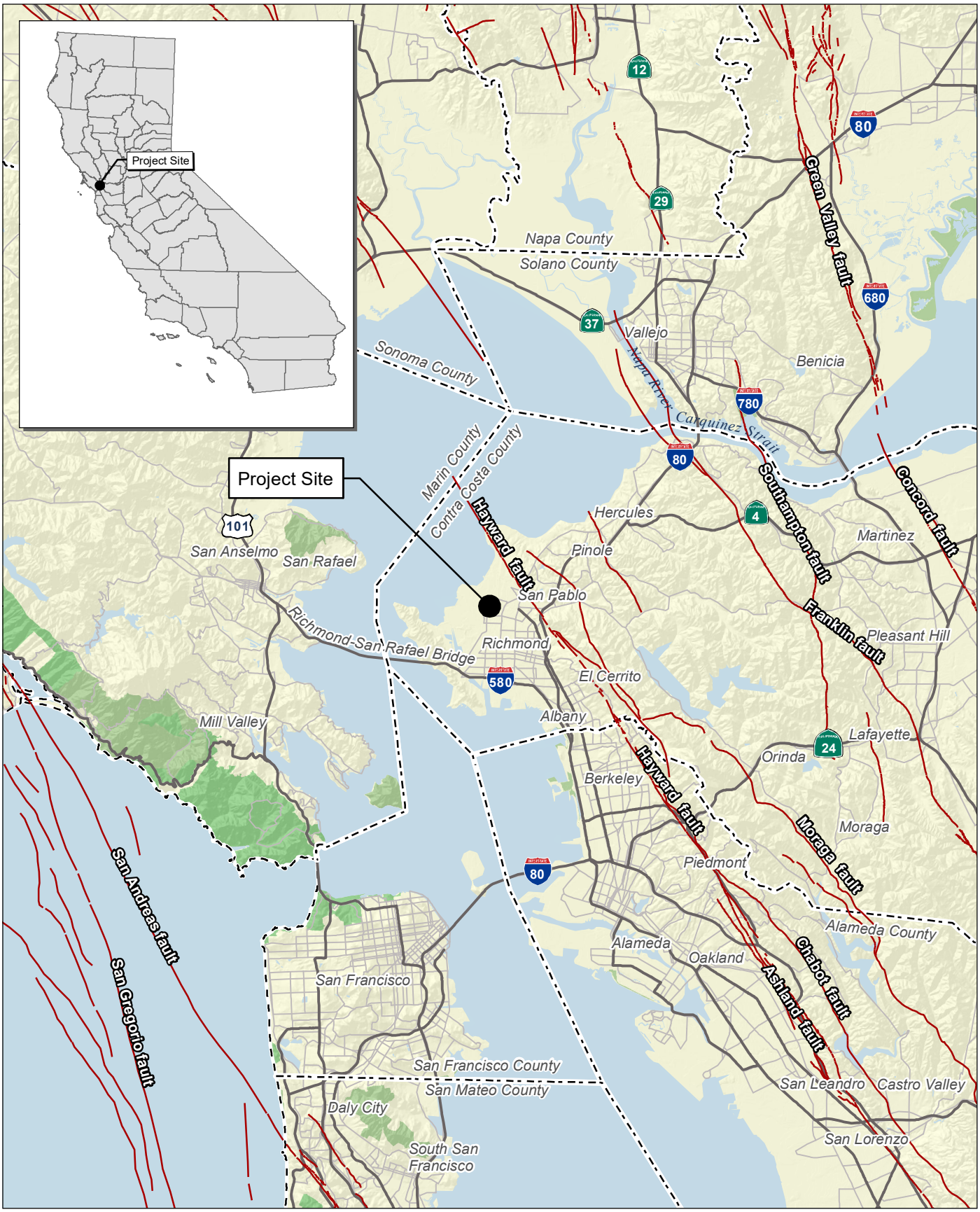
Of the projects listed in Table 3-1, Projects 5, 6, 7, 9, 10, 12, 14, 16, and 18 would occur within 0.25 mile of the project site. Construction activities associated with development of cumulative projects in the project vicinity may have the potential to encounter undiscovered geologic resources or paleontological resources. These cumulative projects would be required to mitigate for impacts through compliance with applicable federal and State laws governing geologic resources and paleontological resources. The likelihood that geologic resources or paleontological resources are present on the cumulative project sites is relatively low, given that the majority of soil disturbance associated with these projects will take place within Holocene soils too young to be fossiliferous.

Although there is the possibility that previously undiscovered resources could be encountered by subsurface earthwork activities, the implementation of standard construction mitigation measures would ensure that undiscovered geologic resources and paleontological resources are not adversely affected by cumulative project-related construction activities. Given the low potential for disruption and the comprehensiveness of mitigation measures that would apply to the cumulative projects, the project, in conjunction with other planned and approved projects, would result in a less than significant cumulative impact related to paleontological and geologic resources.

Level of Cumulative Significance

Less than significant impact.

THIS PAGE INTENTIONALLY LEFT BLANK



Source: Census 2000 Data, The CaSIL

FIRSTCARBON SOLUTIONS™

5 2.5 0 5 Miles

Exhibit 3.6-1
Regional Fault Map

THIS PAGE INTENTIONALLY LEFT BLANK

3.7 - Greenhouse Gas Emissions

3.7.1 - Introduction

This section describes the existing greenhouse gas (GHG) emissions 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 by the Air Quality and Greenhouse Gas Emissions Technical Report (Appendix B). The following comments were received during the Notice of Preparation (NOP) comment period related to GHG emissions:

- The GHG impact analysis should include an evaluation of the project's consistency with the most recent draft of Assembly Bill (AB) 32 Scoping Plan by the California Air Resources Board (ARB) and with the State's 2030 and 2050 climate goals.
- The Environmental Impact Report (EIR) should evaluate all feasible measures, both on-site and off-site, to minimize air quality and GHG impacts.

3.7.2 - Environmental Setting

Greenhouse Effect, Global Warming, and Climate Change

Most of the energy that affects the Earth's climate comes from the sun. Some solar radiation is absorbed by the Earth's surface, and a smaller portion of this radiation is reflected by the atmosphere back toward space. As the 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 the Earth's absorbed and radiated energy, the Earth's radiation budget, [2] by trapping some of the infrared radiation emitted from the Earth's surface that otherwise would have escaped to space (Combustion of fossil fuels and deforestation release carbon into the atmosphere that was previously 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 19th 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 warming of the Earth's average surface temperature. Specifically, increases in GHGs lead to increased absorption of infrared radiation by the Earth's atmosphere and warm the lower atmosphere further, thereby increasing temperatures and evaporation rates near the surface.

[1] Frequencies at which bodies emit radiation are proportional to temperature. The 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.

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.

Radiative forcing is the difference between the incoming energy and outgoing energy.[3] Specifically, GHGs affect the radiative forcing of the atmosphere,[4] which in turn affects the Earth's average surface temperature. This phenomenon, the *greenhouse effect*, keeps the 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 was previously 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 19th 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 warming of the Earth's average surface temperature.[5] Specifically, increases in GHGs lead to increased absorption of infrared radiation by the Earth's atmosphere and warm the lower atmosphere further, thereby increasing temperatures and evaporation rates near the surface.

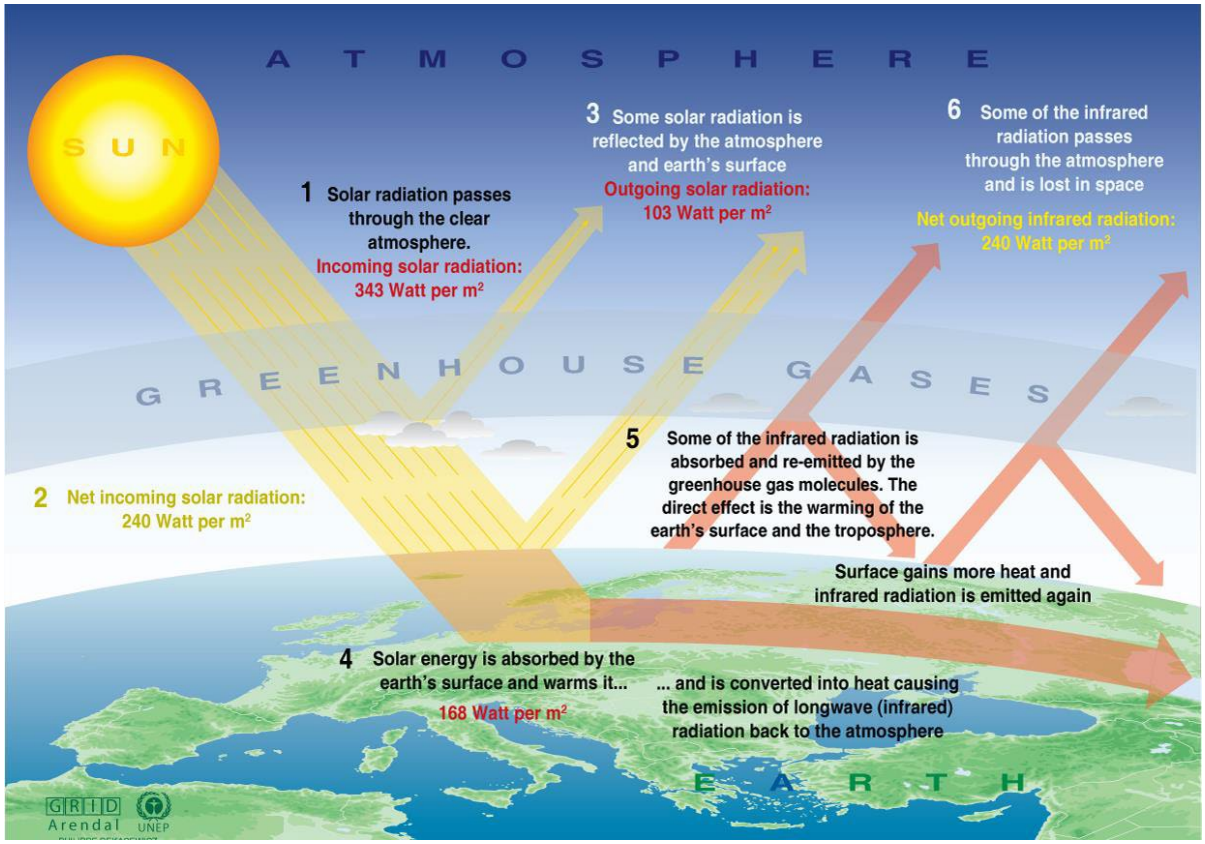
Variations in natural phenomena such as volcanoes and solar activity produced most of the global temperature increase that occurred during preindustrial times; more recently, however, increasing atmospheric GHG concentrations resulting from human activity have been responsible for most of the observed global temperature increase.[6]

[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.

[5] This condition results when the Earth has to work harder to maintain its radiation budget, because when more GHGs are present in the atmosphere, the 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.



Source: United Nations Environmental Program/GRID-Arendal (UNEP/GRID-Arendal). 2005. GRID-Arendal Annual Report. Website: https://www.grida.no/resources/6467. Accessed April 12, 2021.

Figure 3.7-1: 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 the Earth 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.

Temperature Predictions by the Intergovernmental Panel on Climate Change

The World Meteorological Organization and United Nations Environment Programme established the United Nations Intergovernmental Panel on Climate Change (IPCC) to assess scientific, technical, and socioeconomic information relevant to the understanding of 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 Fourth Assessment Report, the IPCC predicted that the global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.1°C (degrees Celsius) to 6.4°C. Regardless of analytical methodology,

global average temperatures and sea levels are expected to rise under all scenarios.[7] The report also concluded that "[w]arming of the climate system is unequivocal," and that "[m]ost of the observed increase in global average temperatures since the mid-20th Century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations." Global surface temperature increased approximately 1.33°F (degrees Fahrenheit) over the last 100 years. The IPCC predicts increases in global average temperature of between 2°F and 11°F over the next 100 years, depending on the scenario.[8]

GHGs 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 the 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][9] and aerosols, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). The GHGs listed by the IPCC (CO_2, methane, nitrous oxide, HFCs, PFCs, and sulfur hexafluoride) are discussed below, in order of abundance in the atmosphere. Water vapor, despite being the most abundant GHG, is not discussed 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 HFCs and PFCs have largely replaced them.

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, carbon dioxide (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 sulfur hexafluoride 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.[10] The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of 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

[7] Intergovernmental Panel on Climate Change. 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.
[8] Ibid.
[9] CFCs destroy stratospheric ozone. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited CFCs production in 1987.
[10] Intergovernmental Panel on Climate Change, United Nations. 2007. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC. Geneva, Switzerland.

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 3.7-1 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 sulfur hexafluoride are referred to as high GWP gases. CO_2 is by far the largest component of worldwide CO_2e emissions, followed by methane, nitrous oxide, 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 methane, such as livestock grazing and crop residue decomposition; and industrial processes that release smaller amounts of high GWP gases. Deforestation and land cover conversion are also identified as contributing to global warming by reducing the Earth's capacity to remove CO_2 from the air and altering the 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, methane, and nitrous oxide emissions associated with human activities are the next largest contributors to climate change.

GHGs of California concern are defined by 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 2005 in Table 3.7-1.

Table 3.7-1: 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,

[11] Seinfeld, J.H. and S.N. Pandis. 2006. Atmospheric Chemistry and Physics: From Air Pollution to Climate Change, 2nd Edition.

Greenhouse Gas	Physical Description and Properties	Global Warming Potential (100 years)	Atmospheric Residence Lifetime (years)	Sources
				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 the 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 to 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 to 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, semiconductor manufacturing; a tracer gas

Greenhouse Gas	Physical Description and Properties	Global Warming Potential (100 years)	Atmospheric Residence Lifetime (years)	Sources
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). 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.

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.

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 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 3.7-1 and are already included in the California GHG inventory. Black carbon has not been included in past GHG inventories; however, ARB will include it in its comprehensive strategy. [12]

Black carbon is a component of fine particulate matter. Incomplete combustion of fossil fuels, biofuels, and biomass creates black carbon. Sources 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 deposit 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).

GWPs for black carbon were not defined by the IPCC in its Fourth Assessment Report. The ARB has identified a global warming potential of 3,200 using a 20-year time horizon and 900 using a 100-year time horizon from the IPCC Fifth Assessment. The ARB already regulates black carbon sources, air district criteria pollutants, and toxics to control fine particulate emissions from diesel engines and

[12] California Air Resources Board (ARB). 2015. Short-Lived Climate Pollutant Reduction Strategy, Concept Paper. May. Website: https://ww2.arb.ca.gov/sites/default/files/2018-09/concept_paper.pdf. Accessed April 12, 2021.

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 necessary.

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 GHGs allows more water vapor to enter the atmosphere. [15]

Introduction to Global Climate Change

Global climate change is defined as the change in average meteorological conditions on Earth with respect to temperature, precipitation, and storms. Global temperatures are regulated by naturally occurring atmospheric gases such as water vapor, CO_2, N_2O, CH_4, hydrofluorocarbons, perfluorocarbons and SF_6. These particular gases are important because of their residence time (duration they stay) in the atmosphere, which ranges from 10 years to more than 100 years. These gases allow solar radiation into the Earth's atmosphere, but prevent radioactive heat from escaping, thus warming the Earth's atmosphere. Global climate change can occur naturally, as it has in the past with the previous ice ages. According to the ARB, the climate change since the Industrial Revolution differs from previous climate changes in both rate and magnitude.

GHGs are released into the atmosphere by both natural and anthropogenic (human) activity. Without the natural greenhouse effect, the Earth's average temperature would be approximately 61°F cooler than it is currently. The cumulative accumulation of these gases in the Earth's atmosphere is considered the cause for the observed increase in the Earth's temperature.

Although California's rate of growth of GHG emissions is slowing, the State is still a substantial contributor to the U.S. emissions inventory total. In 2004, California is estimated to have produced 492 million metric tons (MMT) of carbon dioxide equivalents (MMT CO_2e) GHG emissions. Despite a population increase of 16 percent between 1990 and 2004, California has significantly slowed the rate of growth of GHG emissions because of the implementation of energy efficiency programs as well as adoption of strict emission controls.

[13] California Air Resources Board (ARB). 2015. Short-Lived Climate Pollutant Reduction Strategy, Concept Paper. May. Website: https://ww2.arb.ca.gov/sites/default/files/2018-09/concept_paper.pdf. Accessed April 12, 2021.

[14] Ibid.

[15] National Aeronautics and Space Administration (NASA). 2021. NASA—Global Climate Change, Vital Signs of a Planet. Website: http://climate.nasa.gov/causes/. Accessed April 12, 2021.

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 disperse 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 required to result in climate change is not precisely known and cannot be quantified, and no single project would be 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

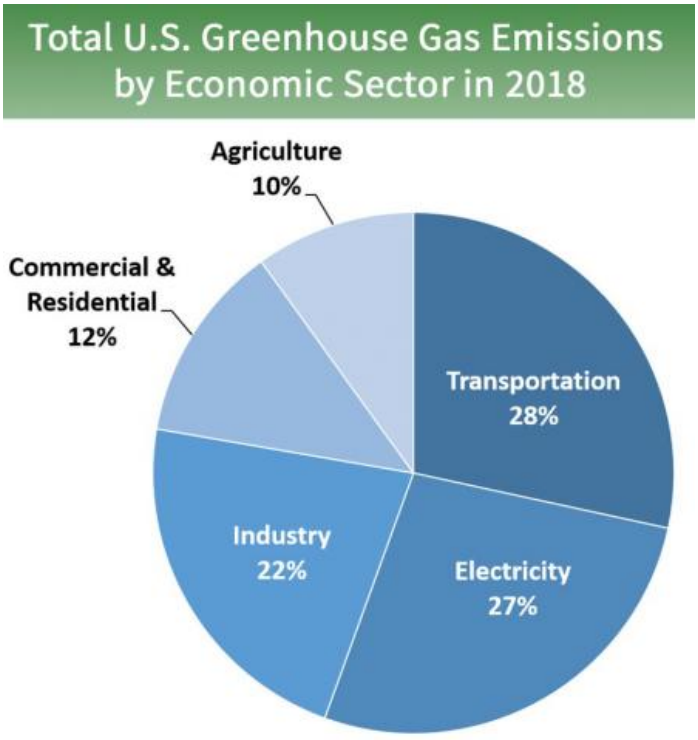
Climate is the accumulation of daily and seasonal weather events over a long period, whereas weather is defined as the condition of the atmosphere at any particular time and place. For a detailed discussion of existing regional and project site climate and topography, see Section 3.2, Air Quality.

[16] Seinfeld, J. H. and S.N. Pandis. 1998. Atmospheric Chemistry and Physics from Air Pollution to Climate Change. John Wiley & Sons.

Existing GHG Emissions

U.S. GHG Inventory

By 2018, total U.S. GHG emissions were 6,676.6.2 MMT CO_2e, which presents an increase of approximately 3.7 percent since 1990. Total U.S. GHG emissions increased by 2.9 percent from 2017 to 2018 (188.4 MMT CO_2e), down from a high of 15.7 percent above 1990 emission levels in 2007. Between 2017 and 2018, the increase in total GHG emissions was largely driven by an increase in fossil fuel combustion, principally from increased energy use from heating and cooling needs due to a colder winter and hotter summer in 2018 compared to 2017. [17] Figure 3.7-2 presents 2018 U.S. GHG emissions by economic sector.



Source: United States Environmental Protection Agency (EPA). 2021. Sources of Greenhouse Gas Emissions. Website: https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions. Accessed April 12, 2021.
Note: Emissions shown do not include carbon sinks such as change in land uses and forestry.

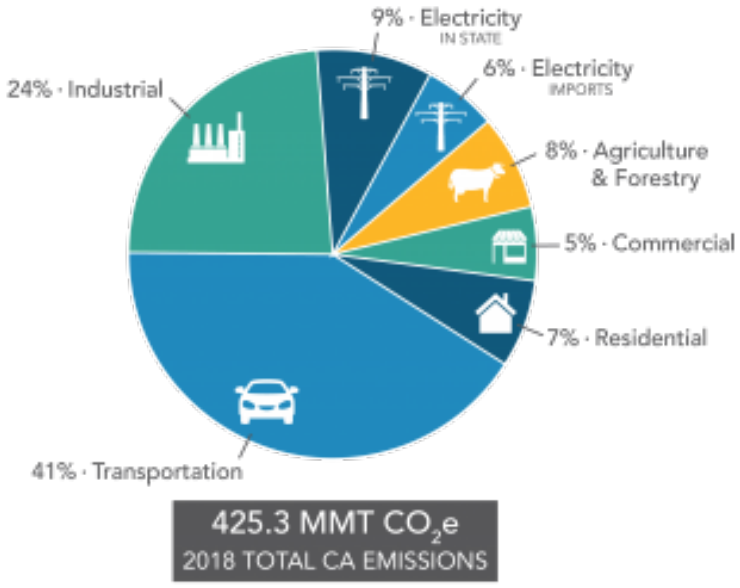
Figure 3.7-2: 2018 U.S. Greenhouse Gas Emissions by Economic Center

California GHG Inventory

As the second largest emitter of GHG emissions in the U.S. and the 12th to 16th largest GHG emissions emitter in the world, California contributes a large quantity (425.3 MMT CO_2e in 2018) of GHG emissions to the atmosphere. [18, 19] Emissions of CO_2 are byproducts of fossil fuel combustion and are

[17] United States Environmental Protection Agency (EPA). 2020. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2018. Website: https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-main-text.pdf. Accessed April 12, 2021.
[18] United States Energy Information Administration (EIA). N.d. Rankings: Total Carbon Dioxide Emissions, 2017 (million metric tons). Website: https://www.eia.gov/state/rankings/?sid=CA#series/226. Accessed April 12, 2021.
[19] 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.

attributable in large part to human activities associated with transportation, industry/ manufacturing, electricity and natural gas consumption, and agriculture. In California, the transportation sector is the largest emitter at 41 percent of GHG emissions, followed by industry/ manufacturing at 24 percent of GHG emissions (Figure 3.7-3). [20]



Source: California Air Resources Board (ARB). 2021. Current California GHG Emission Inventory Data. Website: https://ww2.arb.ca.gov/ghg-inventory-data. Accessed April 12, 2021.

Figure 3.7-3: 2018 California Greenhouse Gas Emissions by Sector

California's GHG emissions have followed a declining trend since 2007. In 2018, emissions from routine GHG-emitting activities Statewide were 425.3 MMT CO_2e, 5 MMT CO_2e lower than 2016 levels. This represents an overall decrease of 14 percent since peak levels in 2004 and 7 MMT CO_2e below the 1990 level and the State's 2020 GHG target. During the 2000 to 2017 period, per capita GHG emissions in California have continued to drop from a peak in 2001 of 14 MT CO_2e per capita to 10.7 MT CO_2e per capita in 2017, a 24 percent decrease. Overall trends in the inventory also demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product [GDP]) is declining, representing a 41 percent decline since the 2001 peak, while the State's GDP has grown 52 percent during this period. For the first time since California started to track GHG emissions, the majority of California's electricity comes from zero-GHG sources (hydropower, solar, wind, and nuclear energy). [21]

[20] California Air Resources Board (ARB). 2018. California Greenhouse Inventory-Graphs. Website: https://www.arb.ca.gov/cc/inventory/data/graph/graph.htm. Accessed May 17, 2021.

[21] California Air Resources Board (ARB). 2019, August 26. California Greenhouse Emissions for 2000 to 2017: Trends of Emissions and Other Indicators. Website: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf. Accessed May 17, 2021.

Bay Area Air Quality Management District GHG Inventory

The Bay Area Air Quality Management District (BAAQMD) published 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. [22] This GHG inventory is based on the standards for criteria pollutant inventories and is intended to support BAAQMD's climate protection activities.

Table 3.7-2 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 the BAAQMD inventory are from the Second Assessment Report of the IPCC.

In 2011, GHG emissions from Contra Costa County (County) accounted for approximately 31 percent of the Bay Area's total GHG emissions with 17.8 percent of the Bay Area's total GHG emissions coming from the industrial/commercial land uses in the County. [23] Transportation is the largest GHG emissions sector in the Bay Area, followed by industrial/commercial, electricity generation and cogeneration, and residential fuel usage. In the County, the largest amount of GHG emissions is generated by the industrial/commercial sector, followed by the electricity/Cogeneration sector.

Table 3.7-2: 2011 County GHG Emissions by Sector (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/Cogeneration	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:
BAAQMD = Bay Area Air Quality Management District
CO_2e = carbon dioxide equivalent
co-gen = cogeneration
* Portion within BAAQMD jurisdiction
Source: Bay Area Air Quality Management District (BAAQMD). 2015. Bay Area Emissions Inventory Summary Report: Greenhouse Gases - Base Year 2011. January.

[22] Bay Area Air Quality Management District (BAAQMD). 2015. Bay Area Emissions Inventory Summary Report: Greenhouse Gases - Base Year 2011. January.
[23] Ibid.

Contra Costa County

A community-wide baseline (2005) GHG emissions inventory was conducted for the County as part of the development of the Climate Action Plan (CAP). [24] Table 3.7-3 provides the estimated 2005 baseline by sector for the County.

Table 3.7-3: 2005 Unincorporated County GHG Emissions Baseline by Sector (excluding Stationary Source Emissions)

Sector	Metric Tons CO_2e/Year	Percentage of Total
Residential Energy	274,690	20
Nonresidential Energy	118,770	8
Solid Waste	48,450	3
Landfill	193,950	14
On-road Transportation	628,200	45
Off-Road Equipment	71,880	5
Water and Wastewater	8,080	1
Bay Area Rapid Transit (BART)	2,300	< 1
Agriculture	57,320	4
Total	1,403,610	100

Notes:
CO_2e = carbon dioxide equivalent
Source: Contra Costa County Department of Conservation and Development and Michael Baker International. 2015. Contra Costa County Climate Action Plan. December 15.

Project Site

The project site is currently vacant 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 implementation to reduce GHG concentrations.

California

Substantially higher temperatures, more extreme wildfires, and rising sea levels are just some of the direct effects of climate change experienced in California. [25,26] As reported by the California Natural

[24] Contra Costa County Department of Conservation and Development and Michael Baker International. 2015. Contra Costa County Climate Action Plan. December 15.
[25] California Natural Resources Agency (CNRA). 2009. 2009 California Climate Adaptation Strategy: A Report to the Governor of the

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 from 1895 to 2011, and a larger proportion of total precipitation is falling as rain instead of snow. [27] 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. [28] 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.

The following is a summary of climate change factors and predicted trends specific to California.

In California, climate change may result in consequences such as the following. [29, 30]

- **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 21st 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.

State of California in Response to Executive Order S-13-2008.

[26] California Climate Change Center (CCCC). 2012. Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California. CEC-500-2012-007. July.

[27] California Energy Commission. 2006. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004. CEC-600-2006-013-D. October.

[28] 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.

[29] California Climate Change Center (CCCC). 2006. Our Changing Climate: Assessing the Risks to California. CEC-500-2006-077. July.

[30] 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. CEC-500-2008-071. May.

- **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 7 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 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 21st 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. [31] The projected rate of warming, especially in the latter half of the 21st 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. [32]

[31] California Climate Change Center (CCCC). 2009. Climate Change Scenarios and Sea Level Rise Estimates for the California 2009 Climate Change Scenarios Assessment. Final Paper. CEC-500-2009-014-F. August.
[32] Cal-Adapt. 2021. Climate Tools. Website: http://cal-adapt.org/tools/. Accessed March 23, 2021.

- 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. [33]

Precipitation, Rainfall, and Flooding Events

Studies of the effect of climate change on the long-term average precipitation for California show some variance. [34] 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. [35]

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.
- 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. [36]

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.

[33] Cal-Adapt. 2021. Climate Tools. Website: http://cal-adapt.org/tools/. Accessed March 23, 2021.
[34] California Climate Change Center (CCCC). 2009. Climate Change Scenarios and Sea Level Rise Estimates for the California 2009. Climate Change Scenarios Assessment. Final Paper. CEC-500-2009-014-F. August.
[35] 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.
[36] California Climate Change Center (CCCC). 2009. Climate Change Scenarios and Sea Level Rise Estimates for the California 2009 Climate Change Scenarios Assessment. Final Paper. CEC-500-2009-014-F. August.

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.[37] 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), carbon dioxide, methane, SF_6, and some chlorofluorocarbons can cause suffocation as the gases can displace oxygen.[38, 39]

Contra Costa County

Temperature and Heat

Figure 3.7-4 displays a chart of measured historical (i.e., observed) and projected annual average temperatures in the Contra Costa County area. As shown in the figure, temperatures are expected to rise as part of both the low and high GHG emissions scenarios.[40] The results indicate that temperatures are predicted to increase by 3.9°F under the medium emission scenario and 6.7°F under the high emissions scenario.[41]

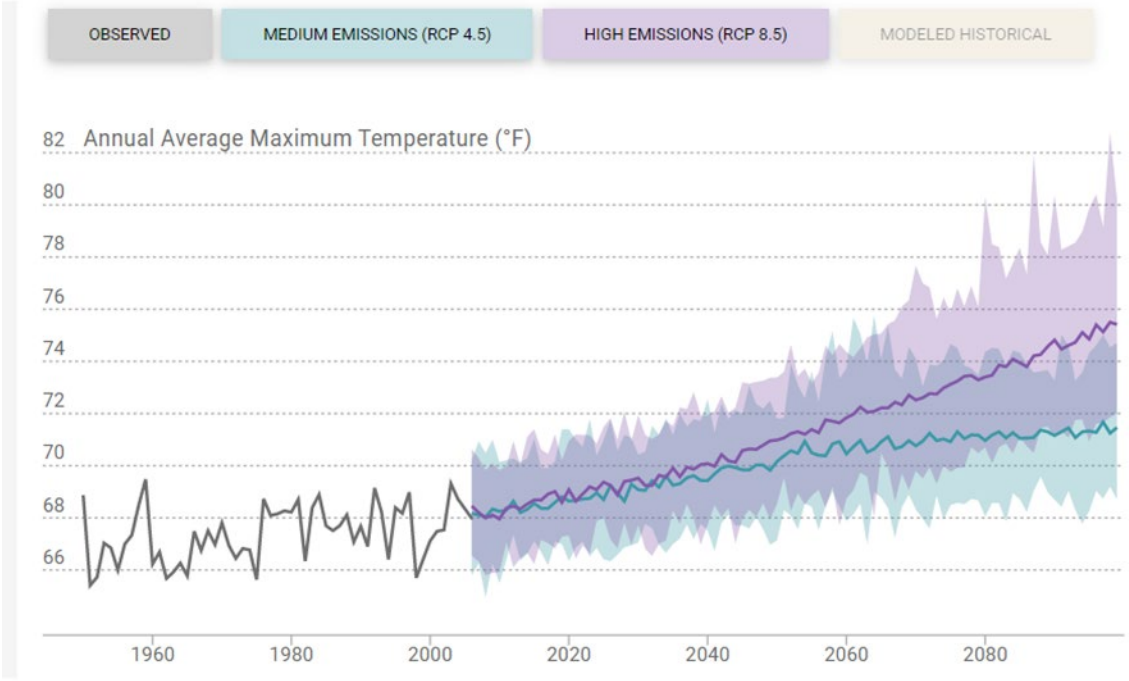
[37] United States Environmental Protection Agency (EPA). 2009. Ozone and your Health. EPA-456/F-09-001. February.

[38] National Institute for Occupational Safety and Health (NIOSH). 2019. Carbon Dioxide. October 30. Website: www.cdc.gov/niosh/npg/npgd0103.html. Accessed May 17, 2021.

[39] Occupational Safety and Health Administration (OSHA). 2003. United States Department of Labor. Safety and Health Topics: Methane. Website: www.osha.gov/dts/chemicalsampling/data/CH_250700.html. Accessed March 23, 2021.

[40] The low and high GHG emissions scenarios are based on IPCC's Special Report on Emissions Scenarios B1 and A1, respectively. The higher global GHG emissions scenario (A1) assumes a global trend of rapid economic growth. The lower GHG emissions scenario (B1) assumes the same global population as in the A1 storyline but with rapid changes in economic structures toward a service and information economy, with reductions in material intensity, and the introduction of clean and resource-efficient technologies. Overall, the B1 scenario places more focus on global environmental sustainability rather than rapid economic growth.

[41] CalAdapt. 2021. Local Climate Snapshots. Website: https://cal-adapt.org/tools/local-climate-change-snapshot/. Accessed March 19, 2021.



Source: CalAdapt 2021

Figure 3.7-4: Observed and Projected Temperatures in Contra Costa County

Drought and Wildfires

Fire hazards present a considerable problem to vegetation and wildlife habitats throughout the County. Fires easily ignite in grassland ecosystems, particularly in dry seasons. (See Section 3.15, Wildfire, for a more detailed discussion related to wildfire hazard areas and wildfire-conducive conditions.) The potential for increased temperatures and drought conditions due to climate change would result in increased risk from wildfire in these areas.

Reduced Sierra Nevada Snowpack and Water Supply Shortages

As described in Section 3.14, Utilities and Service Systems, western Contra Costa County receives potable water from the East Bay Municipal Utilities District (EBMUD). EBMUD obtains approximately 90 percent of its water supply from the Mokelumne River watershed in Alpine, Amador, and Calaveras counties in the Sierra Nevada Mountains.[42] EBMUD holds a contract with United States Bureau of Reclamation (USBR) that allows taking Central Valley Project (CVP) water from the Sacramento River during dry years: up to 133,000 acre-feet in any year, subject to supply, and up to 165,000 acre-feet over three consecutive dry years. The remaining 10 percent is provided by local runoff collected in its five terminal reservoirs: Briones, Chabot, Lafayette, San Pablo, and Upper San Leandro. The availability of surface water supply could decline if climate change results in reduced snowpack in the Sierra Nevada.

[42] East Bay Municipal Utility District (EBMUD). Urban Water Management Plan 2020. Website: https://www.ebmud.com/water/about-your-water/water-supply/urban-water-management-plan/. Accessed October 11, 2021.

Climate Change Impacts at the Project Site

Specific climate change impacts that could affect the project include:

- Water Resources Impacts. By late this century, all projections show drying, and half of the projections suggest 30-year average precipitation will decline by more than 10 percent below the historical average.
- This drying trend is caused by an apparent decline in the frequency of rain and snowfall. Even in projections with relatively small or no declines in precipitation, central and southern parts of the State can be expected to be drier from the warming effects alone—the spring snowpack will melt sooner, and the moisture in soils will evaporate during long dry summer months. [43]
- Wildfire Risks. Earlier snowmelt, higher temperatures, and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate related changes in vegetation and ignition potential from lightning. Human activities will continue to be the biggest factor in ignition risk. The number of large fires Statewide is estimated to increase from 58 percent to 128 percent above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57 percent to 169 percent, depending on location. [44]
- Health Impacts. Many of the gravest threats to public health in California stem from the increase of extreme conditions, principally more frequent, more intense, and longer heat waves. Particular concern centers on the increasing tendency for multiple hot days in succession, and heat waves occurring simultaneously in several regions throughout the State. Public health could also be affected by climate change impacts on air quality, food production, the amount and quality of water supplies, energy pricing and availability, and the spread of infectious diseases. Higher temperatures also increase ground-level ozone levels. Furthermore, wildfires can increase particulate air pollution in the major air basins of California. [45]
- Increased Energy Demand. Increases in average temperature and higher frequency of extreme heat events combined with new residential development across the State will drive up the demand for cooling in the increasingly hot and long summer season and decrease demand for heating in the cooler season. Warmer, drier summers also increase system losses at natural gas plants (reduced efficiency in the electricity generation process at higher temperatures) and hydropower plants (lower reservoir levels). Transmission of electricity will also be affected by climate change. Transmission lines lose 7 to 8 percent of transmitting capacity in high temperatures while needing to transport greater loads. This means that more electricity needs to be produced to make up for the loss in capacity and the growing demand. [46]

[43] California Climate Change Center (CCCC). 2012, July. Our Changing Climate 2012, Vulnerability & Adaptation to the Increasing Risks from Climate Change in California.
[44] Ibid.
[45] Ibid.
[46] Ibid.

3.7.3 - Regulatory Framework

Kyoto Protocol

The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. 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."

In 2001, President George W. Bush indicated that he would not submit the treaty to the U.S. Senate for ratification, which effectively ended American involvement in the Kyoto Protocol. In December 2009, international leaders met in Copenhagen to address the future of international climate change commitments post-Kyoto. Leaders did not reach a binding agreement in Copenhagen; however, the Committee identified the long-term goal of limiting the maximum global average temperature increase to no more than 2°C above preindustrial levels, subject to a review in 2015. The Climate Change Committee held additional meetings in Durban, South Africa in November 2011; Doha, Qatar in November 2012; and Warsaw, Poland in November 2013. The meetings are gradually gaining consensus among participants on individual climate change issues.

On September 23, 2014, more than 100 heads of state and government, and leaders from the private sector and civil society met at the Climate Summit in New York hosted by the United Nations. At the Summit, heads of government, business and civil society announced actions in areas that would have the greatest impact on reducing emissions, including climate finance, energy, transport, industry, agriculture, cities, forests, and building resilience.

United Nations Climate Change Framework Convention

On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Climate Change Framework Convention. 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.

Paris Climate Change Agreement

Parties to the United Nations Framework Convention on Climate Change (UNFCCC) reached a landmark agreement on December 12 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.

The agreement and a companion decision by parties were the key outcomes of the conference, known as the 21st Session of the UNFCCC Conference of the Parties, or "COP 21." Together, the Paris Agreement and the accompanying COP 21 decision:[47]

- Reaffirm the goal of limiting global temperature increase well below 2 degrees Celsius, while urging efforts to limit the increase to 1.5 degrees;
- Establish binding commitments by all parties to make "nationally determined contributions" (NDCs), and to pursue domestic measures aimed at achieving them;
- Commit all countries to report regularly on their emissions and "progress made in implementing and achieving" their NDCs, and to undergo international review;
- Commit all countries to submit new NDCs every 5 years, with the clear expectation that they will "represent a progression" beyond previous ones;
- Reaffirm the binding obligations of developed countries under the UNFCCC to support the efforts of developing countries, while for the first time encouraging voluntary contributions by developing countries too;
- Extend the current goal of mobilizing $100 billion a year in support by 2020 through 2025, with a new, higher goal to be set for the period after 2025;
- Extend a mechanism to address "loss and damage" resulting from climate change, which explicitly will not "involve or provide a basis for any liability or compensation;"
- Require parties engaging in international emissions trading to avoid "double counting;" and
- Call for a new mechanism, similar to the Clean Development Mechanism under the Kyoto Protocol, enabling emission reductions in one country to count toward another country's NDC.

On June 1, 2017, President Trump announced the decision for the United States to withdraw from the Paris Climate Accord. [48] California remains committed to combating climate change through programs aimed to reduce GHGs. [49] On January 20, 2021, President Biden signed an Executive Order for the United States to rejoin the Paris Climate Accords, which is anticipated to be effective at the completion of a mandatory 30-day notice period.

Continental

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 are tradeable, providing 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

[47] Center for Climate and Energy Solutions (C^2ES). 2015. Outcomes of the U.N. Climate Change Conference in Paris. December.
[48] The White House. 2017. Statement by President Trump on the Paris Climate Accord. June 1. Website: https://trumpwhitehouse.archives.gov/briefings-statements/statement-president-trump-paris-climate-accord/. Accessed May 17, 2021.
[49] California Air Resources Board (ARB). 2017. California and China Team Up to Push for Millions More Zero-Emission Vehicles. June 7. Website: https://ww2.arb.ca.gov/news/california-and-china-team-push-millions-more-zero-emission-vehicles. Accessed March 23, 2021.

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 and the Canadian provinces of British Columbia, Manitoba, Ontario, and Québec. [50]

Federal

Clean Air Act

Coinciding with the 2009 meeting in Copenhagen, on December 7, 2009, the EPA issued an Endangerment Finding under Section 202(a) of the Clean Air Act, opening the door to federal regulation of GHGs. The Endangerment Finding notes that GHGs threaten public health and welfare and are subject to regulation under the Clean Air Act. To date, the EPA has not promulgated regulations on GHG emissions, but it has already begun to develop them.

Previously the EPA had not regulated GHGs under the Clean Air Act, because it asserted that the Act did not authorize it to issue mandatory regulations to address global climate change and that such regulation would be unwise without an unequivocally established causal link between GHGs and the increase in global surface air temperatures. In M*assachusetts v. Environmental Protection Agency et al.* (127 S. Ct. 1438 [2007]), however, the U.S. Supreme Court held that GHGs are pollutants under the Clean Air Act and directed the EPA to decide whether the gases endangered public health or welfare (see discussion below).

The EPA had also not moved aggressively to regulate GHGs because it expected Congress to make progress on GHG legislation, primarily from the standpoint of a cap-and-trade system. However, proposals circulated in both the House of Representatives and the Senate have been controversial and it may be some time before the U.S. Congress adopts major climate change legislation. The EPA's Endangerment Finding paves the way for federal regulation of GHGs with or without Congress.

U.S. Clean Air Act Permitting Programs (New GHG Source Review)

The EPA issued a final rule on May 13, 2010, that 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 Clean Air Act 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 Federal Code Of 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

[50] Western Climate Initiative, Inc. 2021. Program Design. Website: http://www.wci-inc.org/program-design.php. Accessed May 17, 2021.

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; and
- Requiring the 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 President George W. Bush, the Energy Independence and Security Act (EISA) of 2007 aims to:

- Move the United States toward greater energy independence and security.
- Increase the production of clean renewable fuels.
- Protect consumers.
- Increase the efficiency of products, buildings, and vehicles.
- Promote research on and deploy GHG capture and storage options.
- Improve the energy performance of the federal government.
- Increase U.S. energy security, develop renewable fuel production, and improve vehicle fuel economy.

EISA reinforces the energy reduction goals for federal agencies put forth in Executive Order 13423, as well as introduces requirements that are more aggressive. The three key provisions enacted are the Corporate Average Fuel Economy Standards, the Renewable Fuel Standard, and the appliance/lighting efficiency standards.

The EPA is committed to developing, implementing, and revising both regulations and voluntary programs under the following subtitles in EISA, among others:

- Increased Corporate Average Fuel Economy Standards
- Federal Vehicle Fleets
- Renewable Fuel Standard
- Biofuels Infrastructure
- Carbon Capture and Sequestration [51]

The 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 Department of Transportation'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 would apply 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. [52] 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 (mpg) if achieved exclusively through fuel economy improvements.

The EPA and NHTSA issued final rules for the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses on September 15, 2011, which became effective November 14, 2011. For combination tractors, the agencies are proposing engine and vehicle standards that began in the 2014 model year and achieve up to a 20 percent reduction in CO_2 emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the

[51] United States Environmental Protection Agency (EPA). 2019. Summary of the Energy Independence and Security Act. Website: https://www.epa.gov/laws-regulations/summary-energy-independence-and-security-act. Accessed March 23, 2021.

[52] 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. EPA-420-F-12-051. August.

2014 model year and achieve up to a 10 percent reduction for gasoline vehicles, and a 15 percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10 percent reduction in fuel consumption and CO_2 emissions from the 2014 to 2018 model years.

The State of California has received a waiver from the EPA to have separate, stricter Corporate Average Fuel Economy 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 California Energy Commission (CEC) in 1975.

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 EPA regulate four GHGs, including CO_2, under Section 202(a)(1) of the Clean Air Act (CAA). The Supreme Court decided on April 2, 2007, 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 GHGs—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 GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG 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 upholding that upheld the EPA Administrator findings.

U.S. 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 intends 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 MTs or more per year of GHG emissions are required to submit annual reports to

the EPA. The first annual reports for the largest emitting facilities, covering calendar year 2010, were submitted to the EPA in 2011.

State

California AB 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 by the U.S. District Court for the District of Columbia in 2011. [53]

The standards are to be phased in during the 2009 through 2016 model years. When fully phased in, the near-term (2009–2012) standards will result in an approximately 22 percent reduction compared with the 2002 fleet, and the mid-term (2013–2016) standards will 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. [54]

Amendments to the Low Emission Vehicle (LEV) Program, referred to as LEV III or the Advanced Clean Cars program, incorporated the second phase of implementation for the Pavley Bill. 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 electric vehicle (EV) 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. [55]

California Executive Order S-3-05 (GHG Emissions Reduction Targets)

Former California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following reduction targets for GHG emissions:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

[53] California Air Resources Board (ARB). 2017. Clean Car Standards—Pavley, Assembly Bill 1493. January 11. Website: https://ww3.arb.ca.gov/cc/ccms/ccms.htm. Accessed March 23, 2021.
[54] California Air Resources Board (ARB). 2011. Facts About the Advanced Clean Cars Program. November 9.
[55] California Air Resources Board (ARB). 2011. Status of Scoping Plan Recommended Measures.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an Executive Order, the goals are not legally enforceable for local governments or the private sector.

California Executive Order B-55-18 (GHG Emissions Reduction Targets)

On September 10, 2018, 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 a new Statewide goal is to achieve carbon neutrality as soon as possible, and no later than 2045, and 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 AB 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 enactment of AB 32, a seventh chemical, nitrogen trifluoride, has also been added to the list of GHGs. The ARB is the State agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

> Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the State from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The ARB approved the 1990 GHG emissions level of 427 MMT CO_2e on December 6, 2007.[56] Therefore, to meet the State's target, emissions generated in California in 2020 are required to be equal to or less than 427 MMT CO_2e. Emissions in 2020 in a Business as Usual (BAU) scenario were estimated to be 596 MMT CO_2e, which do not account for reductions from AB 32 regulations.[57] At that rate, a 28 percent reduction was required to achieve the 427 MMT CO_2e 1990 inventory. In October 2010, the ARB prepared an updated 2020 forecast to account for the effects of the 2008 recession and slower forecasted growth. The 2020 inventory without the benefits of adopted

[56] 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. Accessed March 23, 2021.

[57] California Air Resources Board (ARB). 2008. Climate Change Scoping Plan: A Framework for Change. December. Website: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed March 23, 2021.

regulation is now estimated at 545 MMT CO_2e. Therefore, under the updated forecast, a 21.7 percent reduction from BAU is required to achieve 1990 levels. [58]

The State has made steady progress in implementing AB 32 and achieving targets included in Executive Order S-3-05. Updated emission inventories prepared by the ARB for 2000 through 2012 demonstrate progress achieved to date. [59] The State has also achieved the Executive Order S-3-05 target for 2010 of reducing GHG emissions to 2000 levels. As shown below, the 2010 emission inventory achieved this target. Also shown are the average reductions needed from all Statewide sources (including all existing sources) to reduce GHG emissions back to 1990 levels.

- **1990:** 427 million MT CO_2e (AB 32 2020 Target)
- **2000:** 463 million MT CO_2e (an average 8 percent reduction needed to achieve 1990 base)
- **2010:** 450 million MT CO_2e (an average 5 percent reduction needed to achieve 1990 base)
- **2020:** 545 million MT CO_2e BAU (an average 21.7 percent reduction from BAU needed to achieve 1990 base)

The ARB Climate Change Scoping Plan (Scoping Plan) contains measures designed to reduce the State's emissions to 1990 levels by the year 2020 to comply with AB 32. [60] The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 GHG target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a Statewide renewables energy mix of 33 percent;
- Developing a California Cap-and-Trade Program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

[58] California Air Resources Board (ARB). 2010. 2020 Greenhouse Gas Emissions Projection and BAU Scenario Emissions Estimate. October 28. Website: http://www.arb.ca.gov/cc/inventory/archive/captrade_2010_projection.pdf. Accessed March 23, 2021.

[59] California Air Resources Board (ARB). 2014. California Greenhouse Gas Emission Inventory: 2000 – 2012. —Trends of Emissions and Other Indicators. Website: http://www.arb.ca.gov/cc/inventory/pubs/reports/ghg_inventory_00-12_report.pdf. Accessed March 23, 2021.

[60] California Air Resources Board (ARB). 2008. Climate Change Scoping Plan: A Framework for Change. Website: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed March 23, 2021.

In addition, the Scoping Plan differentiates between "capped" and "uncapped" strategies. Capped strategies are subject to the proposed Cap-and-Trade Program. The Scoping Plan states that the inclusion of these emissions within the cap-and trade program will help to meet 2020 emission targets despite some degree of uncertainty in the emission reduction estimates for any individual measure. Calculated implementation of the capped strategies should achieve a sufficient amount of reductions by 2020 to meet the emission target contained in AB 32. Uncapped strategies that will not be subject to the cap-and-trade emissions requirements provide a margin of safety by accounting for additional GHG emission reductions. [61]

The ARB approved the First Update to the Scoping Plan (Update) on May 22, 2014. The Update identifies the next steps for California's climate change strategy. The Update shows how California continues on its path to meet the near-term 2020 GHG limit, but also sets a path toward long-term, deep GHG emission reductions. The report establishes a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050. The Update identifies progress made to meet the near-term objectives of AB 32 and defines California's climate change priorities and activities Climate for the next several years. The Update does not set new targets for the State, but describes a path that would achieve the long-term 2050 goal of Executive Order S-05-03 for emissions to decline to 80 percent below 1990 levels by 2050.

AB 32 does not give the ARB a legislative mandate to set a target beyond the 2020 target from AB 32 or to adopt additional regulations to achieve a post-2020 target. The Update estimates that reductions averaging 5.2 percent per year would be required after 2020 to achieve the 2050 goal. With no estimate of future reduction commitments from the State, identifying a feasible strategy including plans and measures for adoption by local agencies is not currently possible. [62]

The Cap-and-Trade Program is a key element of the Scoping Plan. It sets a Statewide limit on sources responsible for 85 percent of California's GHG emissions, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The program is designed to provide covered entities the flexibility to seek out and implement the lowest cost options to reduce emissions. The program conducted its first auction in November 2012. Compliance obligations began for power plants and large industrial sources in January 2013. Other significant milestones include linkage to Québec's Cap-and-Trade system in January 2014 and starting the compliance obligation for distributors of transportation fuels, natural gas, and other fuels in January 2015. [63]

The Cap-and-Trade Program provides a firm cap, ensuring that the 2020 Statewide emission limit will not be exceeded. An inherent feature of the Cap-and-Trade Program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather, the program only guarantees GHG emissions reductions on a cumulative basis. As summarized by the ARB in the First Update:

[61] California Air Resources Board (ARB). 2008. Climate Change Scoping Plan: A Framework for Change. Website: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed March 23, 2021.

[62] California Air Resources Board (ARB). 2014. First Update to the Climate Change Scoping Plan. Website: http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm. Accessed March 23, 2021.

[63] California Air Resources Board (ARB). 2015. ARB Emissions Trading Program. Website: http://www.arb.ca.gov/cc/capandtrade/guidance/cap_trade_overview.pdf. Accessed March 23, 2021.

> The Cap-and-Trade Regulation gives companies the flexibility to trade allowances with others or take steps to cost-effectively reduce emissions at their own facilities. Companies that emit more have to turn in more allowances or other compliance instruments. Companies that can cut their GHG emissions have to turn in fewer allowances. But as the cap declines, aggregate emissions must be reduced. In other words, a covered entity theoretically could increase its GHG emissions every year and still comply with the Cap-and-Trade Program if there is a reduction in GHG emissions from other covered entities. Such a focus on aggregate GHG emissions is considered appropriate because climate change is a global phenomenon, and the effects of GHG emissions are considered cumulative. [64]

The Cap-and-Trade Program works with other direct regulatory measures and provides an economic incentive to reduce emissions. If California's direct regulatory measures reduce GHG emissions more than expected, then the Cap-and-Trade Program will be responsible for relatively fewer emissions reductions. If California's direct regulatory measures reduce GHG emissions less than expected, then the Cap-and-Trade Program will be responsible for relatively more emissions reductions. Thus, the Cap-and-Trade Program assures that California will meet its 2020 GHG emissions reduction mandate:

> The Cap-and-Trade Program establishes an overall limit on GHG emissions from most of the California economy—the "capped sectors." Within the capped sectors, some of the reductions are being accomplished through direct regulations, such as improved building and appliance efficiency standards, the [Low Carbon Fuel Standard] LCFS, and the 33 percent [Renewables Portfolio Standard] RPS. Whatever additional reductions are needed to bring emissions within the cap is accomplished through price incentives posed by emissions allowance prices. Together, direct regulation and price incentives assure that emissions are brought down cost-effectively to the level of the overall cap. The Cap-and-Trade Regulation provides assurance that California's 2020 limit will be met because the regulation sets a firm limit on 85 percent of California's GHG emissions. In sum, the Cap-and-Trade Program will achieve aggregate, rather than site specific or project-level, GHG emissions reductions. Also, due to the regulatory architecture adopted by ARB in AB 32, the reductions attributed to the Cap-and-Trade Program can change over time depending on the State's emissions forecasts and the effectiveness of direct regulatory measures. [65]

California Senate Bill 375: Sustainable Communities and Climate Protection Act

SB 375 became 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

[64] California Air Resources Board (ARB). 2014. First Update to the Climate Change Scoping Plan. Website: http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm. Accessed March 23, 2021.

[65] California Air Resources Board (ARB). 2014. First Update to the Climate Change Scoping Plan. Website: http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm. Accessed March 23, 2021.

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.

Concerning California Environmental Quality Act (CEQA), SB 375, as codified in Public Resources Code Section 21159.28, states that CEQA determinations for certain projects are not required to reference, describe, or discuss (1) growth inducing impacts or (2) any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network if the project:

1. Is in an area with an approved sustainable communities strategy or an alternative planning strategy that ARB accepts as achieving the GHG emission reduction targets;
2. Is consistent with that strategy (in designation, density, building intensity, and applicable policies); and
3. Incorporates the mitigation measures required by an applicable prior environmental document.

California SB 1368: Emission Performance Standards

In 2006, the State Legislature adopted SB 1368, which was subsequently signed into law by the Governor. SB 1368 directs the California Public Utilities Commission 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 California Public Utilities Commission 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 pounds of CO_2 per megawatt-hour (MWh).

California Executive Order S-01-07: Low Carbon Fuel Standard

The Governor signed Executive Order S 01-07 on January 18, 2007. The Executive 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 a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the CEC, ARB, the University of California, and other agencies to develop and propose protocols for measuring the "lifecycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by CEC on December 24, 2007) and was submitted to the ARB for consideration as an "early action" item under AB 32. The ARB adopted the LCFS on April 23, 2009.

The LCFC was subject to legal challenge in 2011. Ultimately, on August 8, 2013, the Fifth District Court of Appeal (California) ruled that the ARB failed to comply with CEQA and the Administrative Procedure Act when adopting regulations for Low Carbon Fuel Standards. In a partially published opinion, the Court of Appeal directed that Resolution 09-31 and two executive orders of the ARB approving LCFS regulations promulgated to reduce GHG emissions be set aside. However, the Court tailored its remedy to protect the public interest by allowing the LCFS regulations to remain operative while the ARB complies with the procedural requirements it failed to satisfy.

To address the Court ruling, the ARB was required to bring a new LCFS regulation to the Board for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS as well as new provisions designed to foster investments in the production of the low carbon fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement. The second public hearing for the new LCFS regulation occurred on September 24 and 25, 2015, where the LCFS regulation was adopted. The Final Rulemaking Package adopting the regulation was filed with the Office of Administrative Law (OAL) on October 2, 2015. The OAL approved the regulation on November 16, 2015. [66]

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 SBX 7-7: Water Conservation Act

This 2009 legislation directs urban retail water suppliers to set individual 2020 per capita water use targets and begin implementing conservation measures to achieve those goals. Meeting this Statewide goal of 20 percent decrease in demand will result in a reduction of almost 2 million acre-feet in urban water use in 2020.

California SB 97 and the CEQA Guidelines Update

Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. The Code 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

[66] California Air Resources Board (ARB). 2015. Low Carbon Fuel Standard Regulation. November 20. Website: http://www.arb.ca.gov/regact/2015/lcfs2015/lcfs2015.htm. Accessed March 23, 2021.

certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)."

Section 21097 was also added to the Public Resources Code, providing an exemption until January 1, 2010 for transportation projects funded by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, or projects funded by the Disaster Preparedness and Flood Prevention Bond Act of 2006, by stating that failure to analyze adequately the effects of GHGs would not violate CEQA. The Natural Resources Agency completed the approval process and the Amendments became effective on March 18, 2010.

The 2010 CEQA Amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The CEQA Amendments fit within the existing CEQA framework by amending existing CEQA Guidelines to reference climate change.

Section 15064.4(b) of the CEQA Guidelines provides direction for lead agencies for assessing the significance of impacts of GHG emissions:

- The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- 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 GHG emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

The CEQA Guidelines amendments do not identify a threshold of significance for GHG emissions, nor do they prescribe assessment methodologies or specific mitigation measures. Instead, they call for a "good-faith effort, based on available information, to describe, calculate, or estimate the amount of greenhouse gas emissions resulting from a project." The amendments encourage lead agencies to consider many factors in performing a CEQA analysis and preserve lead agencies' discretion to make their own determinations based upon substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses.

Also amended were CEQA Guidelines Sections 15126.4 and 15130, which address mitigation measures and cumulative impacts, respectively. GHG mitigation measures are referenced in general terms, but no specific measures are championed. The revision to the cumulative impact discussion requirement (Section 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.

Section 15183.5 permits programmatic GHG analysis and later project-specific tiering, as well as the preparation of GHG 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).

In addition, the 2010 CEQA amendments revised Appendix F of the CEQA Guidelines, which focuses on Energy Conservation. The sample environmental checklist in CEQA Guidelines Appendix G was amended to include GHG questions. The most recent sample environmental checklist in Appendix G was further amended in 2018 to include two energy questions.

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 (CEQA Guidelines § 15130(f)).

Center for Biological Diversity v. California Department of Fish and Wildlife (California Supreme Court GHG Ruling)

In a November 30, 2015 ruling, the California Supreme Court in *Center for Biological Diversity (CBD) v. California Department of Fish and Wildlife (CDFW)* on the Newhall Ranch project concluded that whether the project was consistent with meeting Statewide emission reduction goals is a legally permissible criterion of significance, but the significance finding for the project was not supported by a reasoned explanation based on substantial evidence. The Court offered potential solutions on pages 25–27 of the ruling to address this issue summarized below:

Specifically, the Court advised that:

- **Substantiation of Project Reductions from BAU**. A lead agency may use a BAU comparison based on the Scoping Plan's methodology if it 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 (p. 25).
- **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']) (p. 26).

- **Compliance with GHG Reduction Plans or CAPs**. A lead agency may utilize "geographically specific GHG emission reduction plans" such as climate action plans or GHG emission reduction plans to provide a basis for the tiering or streamlining of project-level CEQA analysis (p. 26).
- **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 (p. 27).

Therefore, consistent with 2019 CEQA Guidelines Appendix G, the three factors identified in CEQA Guidelines Section 15064.4 and the recently issued Newhall Ranch opinion, the GHG impacts would be considered significant if the proposed project would:

- Conflict with a compliant GHG Reduction Plan if adopted by the lead agency;
- Exceed the applicable GHG Reduction Threshold; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emission of GHGs.

California SB 350: Clean Energy and Pollution Reduction Act

In 2015, the State Legislature approved and the Governor signed SB 350, which reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the Renewables Portfolio Standard, 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. The California Public Utility Commission, the CEC, and local publicly owned utilities will achieve this target.
- Reorganize the Independent System Operator (ISO) to develop regional electricity transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States. [67]

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

[67] California State Senate. 2015. Senate Bill No. 350: Clean Energy and Pollution Reduction Act of 2015. October 7.

1990 levels by 2050. It also directs the ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of MM CO_2e. Further, the Executive Order requires the State to update its climate adaptation plan every three years and 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 32

The Governor signed SB 32 in September of 2016, giving the ARB the statutory responsibility to include the 2030 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." The 2017 Climate Change Scoping Plan Update addressing the SB 32 targets was adopted on December 14, 2017. The major elements of the framework proposed to achieve the 2030 target are as follows:

1. SB 350
   - Achieve 50 percent Renewables Portfolio Standard by 2030.
   - Doubling of energy efficiency savings by 2030.
2. Low Carbon Fuel Standard
   - Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020).
3. Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
   - Maintaining existing GHG standards for light- and heavy-duty vehicles.
   - Put 4.2 million Zero-Emission Vehicles (ZEVs) on the roads.
   - Increase ZEV buses, delivery and other trucks.
4. Sustainable Freight Action Plan
   - Improve freight system efficiency.
   - Maximize use of near zero-emission vehicles and equipment powered by renewable energy.
   - Deploy over 100,000 zero-emission trucks and equipment by 2030.
5. Short-Lived Climate Pollutant Reduction Strategy
   - Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
   - Reduce emissions of black carbon 50 percent below 2013 levels by 2030.
6. SB 375 Sustainable Communities Strategies
   - Increased stringency of 2035 targets.
7. Post-2020 Cap-and-Trade Program
   - Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.

- The ARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In fall 2016, ARB staff described potential future amendments including reducing the offset usage limit, redesigning the allocation strategy to reduce free allocation to support increased technology and energy investment at covered entities and reducing allocation if the covered entity increases criteria or toxics emissions over some baseline.

8. 20 percent reduction in GHG emissions from the refinery sector.
9. By 2018, develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

California Code of Regulations Title 24

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 2016 Building Energy Efficiency Standards went into effect on January 1, 2017.[68] The 2019 Building Energy Efficiency Standards went into effect on January 1, 2020.

Part 11 (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 in effect January 1, 2011. The code is updated on a regular basis, with the most recent update consisting of the 2016 California Green Building Standards Code (CALGreen) that became effective January 1, 2017.[69] State law provides methods for local enhancements, allowing local jurisdictions to adopt requirements that are more stringent. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided, they provide a minimum 50 percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State Building Code provides the minimum standard that buildings must meet to achieve certification for occupancy, which local building officials generally enforce.

California Model Water Efficient Landscape Ordinance

AB 1881 (the Water Conservation Act) required the Model Water Efficient Landscape Ordinance (Ordinance). The Act required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the Ordinance by January 1, 2010. Reductions in water use of 20 percent consistent with the 2020 mandate (SBX-7-7) are expected for the Ordinance. Governor

[68] California Energy Commission (CEC). 2016. 2016 Building Energy Efficiency Standards: Frequently Asked Questions. Website: https://www.energy.ca.gov/sites/default/files/2019-05/2016_Building_Energy_Efficiency_Standards_FAQ.pdf. Accessed March 23, 2021.
[69] California Building Standards Commission. 2016. 2016 California Green Building Standards Code. July.

Brown's Drought Executive Order of April 1, 2015 (EO B-29-15) directed the Department of Water Resources (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 Green Building Code

The Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations Title 24, Part 6) were established 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 efficiency technology and methods. The most recent update of standards became effective on January 1, 2017. California's building efficiency standards (including standards for energy efficient appliances). The Energy Commission staff has estimated that the implementation of the 2016 Building Energy Efficiency Standards may reduce Statewide annual electricity consumption by approximately 281 gigawatt-hours (GWh) per year and reduce GHG emissions by 160 thousand MTs CO_2e per year. [70]

Regional

Bay Area 2017 Clean Air Plan

The BAAQMD is responsible for attaining and maintaining federal and State air quality standards in the San Francisco Bay Area Air Basin, as established by the federal CAA and the California Clean Air Act (CCAA), respectively. The CAA and CCAA require that plans be developed for areas that do not meet air quality standards. BAAQMD adopted Spare the Air, Cool the Climate (Bay Area Clean Air Plan) on April 19, 2017, to provide a regional strategy to improve Bay Area air quality and meet public health goals. [71] The control strategy described in the Bay Area Clean Air Plan includes a wide range of control measures designed to reduce emissions and lower ambient concentrations of harmful pollutants, safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, and reduce GHG emissions to protect the climate.

In addition, the BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the San Francisco Bay Area Air Basin. The

[70] California Energy Commission (CEC). 2016. 2016 Building Energy Efficiency Standards for Residential and Nonresidential Buildings. CEC-400-2015-037-CMF. June.

[71] Bay Area Air Quality Management District (BAAQMD). 2017. Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. April 19.

program includes GHG reduction measures that promote energy efficiency, reduce fossil fuel combustion, and decrease emissions of potent GHGs and pollutants. [72]

The BAAQMD CEQA Air Quality Guidelines also assist lead agencies in complying with CEQA requirements regarding potentially adverse impacts on air quality. The BAAQMD advises lead agencies to consider adopting a GHG reduction strategy capable of meeting AB 32 goals. This is consistent with the approach to analyzing GHG emissions described in State CEQA Guidelines Section 15183.5.

Plan Bay Area, Strategy for a Sustainable Region

Plan Bay Area 2040 is the Bay Area's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and was adopted jointly by the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC) on July 26, 2017. It lays out a development scenario for the region, which when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by the ARB. Plan Bay Area 2040 is a limited and focused update to the 2013 Plan Bay Area, with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last several years.

As part of the implementing framework for Plan Bay Area, local governments have identified Priority Development Areas (PDAs) to focus growth. PDAs are transit-oriented, infill development opportunity areas in existing communities. Overall, well over two-thirds of all regional growth in the Bay Area by 2040 are allocated in PDAs. Per the Final Plan Bay Area 2040, while the projected number of new housing units and new jobs within PDAs would increase to 629,000 units and 707,000 jobs compared to the adopted Plan Bay Area 2013, its overall share would be reduced to 77 percent and 55 percent. [73] However, Plan Bay Area 2040 remains on track to meet a 16 percent per capita reduction of GHG emissions by 2035 and a 10 percent per capita reduction by 2020 from 2005 conditions. The project site is in the North Richmond PDA. [74]

Local

Contra Costa County General Plan

The Contra Costa County General Plan (General Plan) establishes goals, policies, and implementation measures associated with GHG emissions. [75] The goals, policies, and implementation measures that are relevant to this analysis are listed below.

Transportation and Circulation Element

Goal 5-I To encourage use of transit.

[72] Bay Area Air Quality Management District (BAAQMD). 2017. Climate Protection Planning Program. April 20. Website: http://www.baaqmd.gov/plans-and-climate/climate-protection/climate-protection-program. Accessed March 23, 2021.
[73] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2017, March. Plan Bay Area 2040 Plan.
[74] Ibid.
[75] Contra Costa County Department of Conservation and Development. 2005. Contra Costa County General Plan. January 18.

Goal 5-J To reduce single-occupant auto commuting and encourage walking and bicycling.

Goal 5-L To reduce greenhouse emissions from transportation sources through provision of transit, bicycle, and pedestrian facilities.

Policies

Policy 5-3 Transportation facilities serving new urban development shall be linked to and compatible with existing and planned roads, bicycle facilities, pedestrian facilities and pathways of adjoining areas, and such facilities shall use presently available public and semi-public rights of way where feasible.

Policy 5-20 New development (including redevelopment and rehabilitation projects) shall contribute funds and/or institute programs to reduce parking demand and/or provide adequate parking.

Policy 5-21 New development shall contribute funds and/or institute programs to provide adequate bicycle and pedestrian facilities where feasible.

Policy 5-23 All efforts to develop alternative transportation systems to reduce peak period traffic congestion shall be encouraged.

Policy 5-24 Use of alternative forms of transportation, such as transit, bike and pedestrian modes, shall be encouraged in order to provide basic accessibility to those without access to a personal automobile and to help minimize automobile congestion and air pollution.

Policy 5-25 Improvement of public transit shall be encouraged to provide for increased use of local, commuter and intercity public transportation.

Conservation Element

Goal 8-K To encourage the use of renewable resources where they are compatible with the maintenance of environmental quality.

Goal 8-L To reduce energy use in the County to avoid risks of air pollution and energy shortages which could prevent orderly development.

Goal 8-AB To continue to support Federal, State and regional efforts to reduce air pollution in order to protect human and environmental health.

Goal 8-AD To reduce the percentage of Average Daily Traffic (ADT) trips occurring at peak hours.

Policies

Policy 8-1 Resource utilization and development shall be planned within a framework of maintaining a healthy and attractive environment.

Policy 8-98 Development and roadway improvements shall be phased to avoid congestion.

Policy 8-101 A safe, convenient and effective bicycle and trail system shall be created and maintained to encourage increased bicycle use and walking as alternatives to driving.

Policy 8-102 A safe and convenient pedestrian system shall be created and maintained in order to encourage walking as an alternative to driving.

Policy 8-113 New commercial and industrial projects exceeding 10,000 square feet of gross floor area shall incorporate measures to reduce or eliminate otherwise preventable air quality impacts and greenhouse gas (GHG) emissions. These measures may include, but are not limited to, limiting unnecessary truck and equipment idling, reducing on-site energy consumption, increasing on-site energy generation, reducing fugitive dust emissions, and contributing toward development of renewable energy projects in impacted communities.

Implementation Measures

Implementation Measure 8-bs

Include provisions for solar access within design review of projects.

Implementation Measure 8-dl

Review major development applications for consistency with regional air quality plan assumptions.

Contra Costa County Climate Action Plan

On December 15, 2015, the County Board of Supervisors approved the CAP, [76] which identifies specific measures through which the County can achieve a GHG reduction target of 15 percent below baseline levels by the year 2020. In addition to reducing GHG emissions, the CAP includes proposed policies and actions to improve public health and provide additional community benefits, and it lays the groundwork for achieving long-term GHG reduction goals for 2020 and 2035.

3.7.4 - Impacts and Mitigation Measures

According to the CEQA Guidelines Appendix G Environmental Checklist, to determine whether impacts related to GHG emissions are significant environmental effects, the following questions are analyzed and evaluated. Would the proposed 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?

[76] Contra Costa County Department of Conservation and Development and Michael Baker International. 2015. Contra Costa County Climate Action Plan. December 15.

Approach to Analysis

GHG Emissions Generation Calculation Methodology

This air quality and GHG emissions evaluation was prepared in accordance with the requirements of CEQA to determine whether the proposed project would result in significant air quality and GHG emissions impacts. Construction-related and operational criteria air pollutants and GHG emissions associated with the proposed project were calculated using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2. Air quality modeling datasheets and the CalEEMod output files for the project are in Appendix B.

Per discussion with the County, project-related GHG emissions are quantified for four scenarios (Scenarios 1 through 4). Scenario 4 represents the proposed project. Each scenario includes four separate calendar years (2021, 2023, 2025, and 2027) and specific assumptions for off-road equipment used in daily operations, delivery vehicles, drayage trucks, and non-drayage heavy-duty trucks. Overall, the scenarios reflect various levels of implementation of certain conditions of approval agreed upon between the County and CenterPoint Properties. For purposes of this analysis, the proposed project (Scenario 4) is evaluated against the CEQA Appendix G thresholds for GHG emissions, which represents full compliance with the County's conditions of. The assumptions regarding the fuel types for off-road equipment, delivery vehicles, drayage trucks, and heavy-duty trucks are provided in Table 3.7-4, Proposed Project Assumptions.

Table 3.7-4: Proposed Project Assumptions

	Fuel Type			
Vehicle/Equipment	Year 2021	Year 2023	Year 2025	Year 2027
Off-Road Equipment	Zero Emission	Zero Emission	Zero Emission	Zero Emission
Delivery Vehicles	33% Zero Emission/ 67% Diesel	65% Zero Emission/ 35% Diesel	80% Zero Emission/ 20% Diesel	100% Zero Emission
Drayage Trucks	100% Zero Emission	100% Zero Emission	100% Zero Emission	100% Zero Emission
Heavy-Duty Trucks	100% Model Year 2014 or Later Diesel	100% Model Year 2014 or Later Diesel	100% Zero Emission	100% Zero Emission

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.

Operation

The operational-phase emissions are based on development of the proposed industrial park. The modeling accounts for the average daily vehicle and truck trips and Vehicle Miles Traveled (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 provided by the Transportation Impact Assessment (TIA) prepared for the proposed project (see Appendix I). Per the VMT information provided, an average trip length of 20.53 miles per trip (mile/trip) is used for passenger vehicles and delivery vehicles, and an average trip length of 28.61 mile/trip is used for drayage trucks and heavy-duty trucks. The proposed project is estimated to generate up to 860 passenger vehicle trips per day and 240 heavy vehicle truck trips per day. For passenger vehicles, it is assumed that 75 percent would consist of light-duty automobiles and 25 percent would be delivery vans and trucks. For heavy-duty vehicles, it is assumed that 20 percent would be drayage trucks and 80 percent would be non-drayage heavy-duty trucks. The overall vehicle ratio is 81 percent light-duty passenger vehicles, 13 percent delivery vehicles, and 6 percent heavy vehicles (i.e., drayage trucks and heavy-duty trucks).

CalEEMod is used to quantify mobile source emissions using derived vehicle emission rates based on vehicle emissions data obtained from the ARB's EMFAC2017 Version 1.0.2 web database and adjusted based on methodology provided in Appendix A of the CalEEMod User's Guide. [77] Additionally, the emission rates for the light-duty automobile (LDA), LDT1, LDT2, and medium-duty vehicle (MDV) vehicle classes account for the Safer Affordable Fuel-Efficient (SAFE) adjustment factors released by the ARB. [78, 79, 80] The EMFAC2007 vehicle categories assigned to light-duty passenger vehicles, delivery vehicles, drayage trucks, and heavy-duty trucks are based on the EMFAC vehicle categories and on information provided by the County, including the United States Department of Energy Vehicle Weight Classes and Categories matrix. [81] ZEVs are assumed to be EVs. For purposes of this analysis, ZEVs would not generate running, idling, starting, and running loss emissions, but would generate particulate matter (PM) emissions from brake wear and tire wear in addition to diurnal, resting loss, and heat soak emissions. The EMFAC2017 diurnal, resting loss, and heat soak emission rates for electric-powered LDA, LDT1, LDT2, and MDV vehicles are used for all other electric-powered vehicles.

The following provides further modeling details assumed and used for each vehicle category for the various scenarios:

- Light-Duty Passenger Vehicles

[77] California Air Pollution Control Officers Association (CAPCOA). 2017. California Emissions Estimator Model (CalEEMod). Version 2016.3.2. Prepared by: BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts.

[78] 2019, November 20. EMFAC Off-Model Adjustment Factors to Account for the SAFE Vehicles Rule Part One and the Final Safe Rule.

[79] 2020, June 26. EMFAC Off-Model Adjustment Factors for Carbon Dioxide (CO_2) Emissions to Account for the SAFE Vehicles Rule Part One and the Final Safe Rule.

[80] The standards set under the SAFE Rule are pending until resolution of the lawsuit filed by California and other parties against its implementation. Thus, incorporation of the ARB SAFE Rule adjustment factors provide conservative vehicle emission factors because the SAFE Rule would result in less stringent vehicle emissions standards compared to the previously adopted standards for passenger vehicle model years 2021 through 2025.

[81] United Stated Department of Energy (US Energy). Vehicle Weight Classes and Categories. https://afdc.energy.gov/data/10380. Accessed May 12, 2021

  - 75 percent of total passenger vehicle trips (i.e., 645 trips/day)
  - Average one-way trip length of 20.53 mile/trip.
  - Consists of the LDA and motorcycle (MCY) EMFAC2007 vehicle categories.
  - The fleet mix is based on the CalEEMod default fleet mix normalized to the overall vehicle ratio.

- Delivery Vehicles
  - 25 percent of total passenger vehicle trips (i.e., 215 trips/day).
  - Average one-way trip length of 20.53 mile/trip.
  - Consists of the light-duty truck 1 (LDT1), light-duty truck 2 (LDT2), medium-duty vehicle (MDV), light heavy-duty 1 (LHD1), light heavy-duty 2 (LHD2), medium heavy-duty truck (MHDT), other bus (OBUS), urban bus (UBUS), school bus (SBUS), and motorhome (MH) EMFAC2007 vehicle categories.
  - The fleet mix is based on the CalEEMod default fleet mix normalized to the overall vehicle ratio.

- Drayage Trucks
  - 20 percent of total heavy vehicles vehicle trips (i.e., 48 trips/day).
  - Average one-way trip length of 28.61 mile/trip.
  - Consist of the heavy heavy-duty truck (HHDT) EMFAC2007 vehicle category. However, emissions data is based on the EMFAC2011 heavy-duty diesel drayage truck (T7 POAK) vehicle category.
  - The fleet mix is based on the CalEEMod default fleet mix normalized to the overall vehicle ratio.

- Heavy-Duty Trucks
  - 80 percent of total heavy vehicles vehicle trips (i.e., 192 trips/day).
  - Average one-way trip length of 28.61 mile/trip.
  - Consist of and utilizes the emissions data for the HHDT EMFAC2007 vehicle category.
  - Emissions data obtained from EMFAC2017 are based on model year 2014 and newer trucks. The range of model years is from model year 2014 through the model year for each calendar year modeled (i.e., 2021, 2023, 2025, and 2027). The emissions data for the range of model years is used to calculate aggregated emission rates based on EMFAC methodology. The calculated aggregated emissions data is further processed based on CalEEMod methodology in converting EMFAC data for use in CalEEMod (Appendix B).
  - The fleet mix is based on the CalEEMod default fleet mix normalized to the overall vehicle ratio.

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 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. Outdoor water use is based on water usage calculated from the "Water

Budget Workbook for New and Rehabilitated Nonresidential Landscapes." 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 consumer products and cleaning supplies.

Energy. Emissions from this sector are from use of electricity and natural gas by the proposed buildings. New buildings are assumed to comply with the 2019 Building Energy Efficiency Standards and are modeled to be 10.7 percent and 1 percent more energy efficient for electricity and natural gas, respectively, compared to the 2016 Building Energy Efficiency Standards.[82] Based on the default CalEEMod electricity rates adjusted to reflect the increased energy efficiency associated with the 2019 Building Energy Efficiency Standards, the proposed project would generate an electricity demand of 6,760,296 kWh/year. The proposed project would include a photovoltaic (PV) system that is estimated to generate up to 8,083,000 kWh/year of renewable electricity. Thus, for purposes of this analysis, it is assumed 100 percent of the proposed project's building electricity demand would be provided by the PV system. The CO_2 intensity of electricity supplied by Pacific Gas and Electric Company (PG&E) is based on the year 2018 CO_2 intensity reported to the Climate Registry.[83] For year 2025, the PG&E CO_2 intensity is adjusted to account for the SB 100 RPS target of 44 percent by year 2024. For year 2027, the PG&E CO_2 intensity is adjusted to account for the SB 100 RPS target of 50 percent by year 2026.

Off-Road Equipment. Per the Applicant, 12 forklifts and six yard trucks are modeled as electric-powered. Emissions from forklifts are based on County year 2021 emissions data obtained from the ARB OFFROAD2017 Version 1.0.1 web database for the Industrial-Forklifts vehicle class rated at 100 horsepower. Additionally, each forklift is modeled to operate for 12 hours per day per unit (hours/day/unit) and 365 days per year.[84] Yard truck emissions are based on OFFROAD2017 emissions data for the Cargo Handling Equipment (CHE)-Rail Yard Tractor vehicle class rated at 175 horsepower. Each yard truck is modeled to operate 4 hours/day/unit and 365 days per year.[85] Lifecycle emissions are not included in the GHG analysis because not enough information is available. Black carbon emissions are not included in the GHG analysis because the ARB does not include it in the State's AB 32 inventory but treats this short-lived climate pollutant separately.

Indirect GHG Emissions

For GHG emissions, CalEEMod contains calculations to estimate indirect GHG emissions. Indirect emissions are emissions where the location of consumption or activity is different from where the actual emissions are generated. For example, electricity would be consumed at the proposed apartment building; however, the emissions associated with producing that electricity are generated off-site at a power plant.

---

[82] NORESCO. 2018, June 29. Impact Analysis: 2019 Update to California Energy Efficiency Standards for Residential and Nonresidential Buildings

[83] Climate Registry, The (Climate Registry). CRIS Public Reports: 2018 Emission Rates. https://www.theclimateregistry.org/our-members/cris-public-reports/. Accessed March 23, 2021.

[84] In comparison, based on OFFROAD2017 data, the average daily hours in which a 100-horsepower Industrial – Forklift operates is 2.06 hours based on the reported 143,411 annual hours and total population of 191 units for Contra Costa County

[85] In comparison, based on OFFROAD2017 data, the average daily hours in which a 175-horsepower CHE – Rail Yard Tractor operates is 1.43 hours based on the reported 1,047 annual hours and total population of 2 units for Contra Costa County.

CalEEMod includes calculations for indirect GHG emissions for electricity consumption, water consumption, and solid waste disposal. For water consumption, CalEEMod calculates the embedded energy (e.g., treatment, conveyance, and distribution) associated with providing each gallon of potable water to the project. For solid waste disposal, CalEEMod calculates the GHG emissions generated as solid waste generated by the project decomposes in a landfill.

Specific Thresholds of Significance

GHG Emissions Generation

The County utilizes BAAQMD quantitative thresholds for evaluation of GHG emissions. BAAQMD provides multiple options in its 2017 BAAQMD CEQA Guidelines for operational GHG emissions generation significance thresholds. However, at the time of this analysis, the BAAQMD has not yet provided a construction-related GHG emissions generation significance threshold, but it does recommend that construction-generated GHGs be quantified and disclosed.

Because the proposed project would be constructed after 2020, the BAAQMD's quantitative threshold of significance of 1,100 MT CO_2e per year was adjusted to a "substantial progress" threshold that was calculated based on the SB 32 target of 40 percent below 1990 levels (i.e., 60 percent of 1990 levels). The mass emission threshold of significance applied in this analysis is 660 MT of CO_2e per year (1,100 x 0.60 = 660). If operation of the proposed project would generate GHG emissions that exceed the above threshold, the proposed project is considered to have a significant impact related to GHG emissions. In addition, to demonstrate the proposed project's consistency with and contribution toward achieving post-2030 GHG reduction targets, the proposed project is analyzed against the carbon neutrality goal starting in the year 2045, as established by Executive Order B-55-18. Therefore, if the proposed project would generate any net GHG emissions in 2045 and beyond, impacts would be potentially significant.

According to the County's CAP, unincorporated County GHG emissions in its 2005 baseline year totaled approximately 1,403,610 MT CO_2e/year.[86] Consistent with the Governor's Office of Planning and Research (OPR) guidance on CAP development, the 2005 baseline year should demonstrate a 15 percent reduction by 2020 to be consistent with the reduction targets contained in AB 32 to be representative of 1990 emission levels. A 15 percent reduction would result in an emissions inventory target of approximately 1,193,069 MT CO_2e/year. As SB 32 requires a 40 percent reduction from 1990 levels by 2030, unincorporated Contra Costa County would therefore have a GHG emissions inventory target of approximately 715,841 MT CO_2e/year. According to the ABAG Plan Bay Area 2040 projections, unincorporated Contra Costa County would have an estimated 184,585 residents and 39,895 jobs in 2030, totaling a 2030 service population of 224,480 persons.[87] With a GHG emissions inventory target of approximately 715,841 MT CO_2e/year and service population of 224,480 persons in 2030, the efficiency metric for unincorporated Contra Costa County in 2030 would be 3.2 MT CO_2e per service population per year. As such, an efficiency threshold of 3.2 MT

[86] Contra Costa County. 2015. Contra Costa County Climate Action Plan. December 15. Website: https://www.contracosta.ca.gov/DocumentCenter/View/39791/Contra-Costa-County-Climate-Action-Plan?bidId=. Accessed September 16, 2021.

[87] Association of Bay Area Governments (ABAG). 2018. Plan Bay Area Projections 2040. November. Website: https://mtc.ca.gov/sites/default/files/Projections_2040-ABAG-MTC-web.pdf. Accessed September 16, 2021.

CO_2e per service population per year is utilized in this analysis. The proposed project would have a potentially significant impact if both the bright-line and efficiency thresholds are exceeded.

Impact Evaluation

Greenhouse Gas Emissions

Impact GHG-1: The proposed project could generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

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 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

At the time of this analysis, construction of the proposed project was expected to occur in 2020 and 2021. If the construction schedule moves to later years, construction emissions would likely decrease because of improvements in technology and more stringent regulatory requirements on construction equipment. The duration of construction activity and associated equipment represent a reasonable approximation of the expected construction fleet as provided by the project applicant.

The BAAQMD does not have thresholds of significance for construction-related GHG emissions, which are short-term emissions and therefore would not significantly contribute to the long-term cumulative GHG emissions impacts of the proposed project. Short-term construction emissions are converted to average annual emissions by amortizing them over the service life of a building. For buildings in general, it is reasonable to look at a 30-year time frame, since this is a typical interval before a new building requires the first major renovation.[88] Project-related construction emissions are shown in Table 3.7-5.

Table 3.7-5: Project GHG Emissions: Construction Phase

Year	GHG Emissions MMT CO_2e Per Year
2020	691
2021	1,360
Total Construction Emissions	**2,051**
30-Year Amortized Construction	68

[88] International Energy Agency (IEA). 2008, July. Energy Efficiency Requirements in Building Codes, Energy Efficiency Policies for New Buildings.

Year	GHG Emissions MMT CO_2e Per Year
Notes: BAAQMD = Bay Area Air Quality Management District MMT = million metric tons CO_2e = carbon dioxide equivalent Source: CalEEMod Version 2016.3.2; Appendix B.	

Operation

The proposed project would contribute to global climate change through direct and indirect emissions of GHG from transportation sources (passenger vehicles, trucks), energy (natural gas and purchased energy), water use and wastewater generation, and solid waste generation. In 2021, the proposed project assumes 100 percent of off-road equipment and drayage trucks used in daily operations would be zero emission. Additionally, 33 percent of delivery vehicles are also assumed to be ZEVs, and 100 percent of heavy-duty trucks are assumed to be model year 2014 and newer. The GHG emissions associated with operation of the proposed project starting in year 2021 are shown in Table 3.7-6, which includes the amortized construction emissions from Table 3.7-5.

However, although zero emission and newer model year trucks are assumed, the proposed project is estimated to generate 5,522 $MTCO_2e$/year, which would exceed the bright-line threshold of 660 $MTCO_2e$/year and efficiency threshold of 3.2 $MTCO_2e$/year per service population. Passenger vehicles, which would not have restrictions placed on them, would alone generate emissions that exceed the bright-line threshold. In general, passenger vehicle trips are associated with employees and visitors. In addition, while it is anticipated that the proposed PV system would provide 100 percent of electricity demand, which would eliminate GHG emissions associated with electricity demand, the proposed project would still generate energy sector GHG emissions from natural gas usage. As a result, a potentially significant impact would occur.

Table 3.7-6: Year 2021 Operational GHG Emissions Forecast

Source	GHG Emissions (MT CO_2e/year)
	MT CO_2e/year
Amortized Construction	68
Area	< 1
Energy[1,2]	571
On-Road Mobile Sources (Passenger)[3]	1,283
On-Road Mobile Sources (Delivery Vehicles)[3,4]	404
On-Road Mobile Sources (Drayage)[3,5]	0
On-Road Mobile Sources (Heavy-Duty Trucks)[6,7]	2,740
Waste	341
Water/Wastewater	115

Source	GHG Emissions (MT CO_2e/year)
	MT CO_2e/year
Total	**5,522**
Bright-Line Screening Threshold[8]	**660**
Exceeds Threshold?	**Yes**
Service Population (Employees)	573
MT CO_2e/Year/Service Population	**9.6**
Efficiency Threshold	**3.2**
Exceeds Threshold?	**Yes**
MT CO_2e Beyond Threshold	**3,688**

Notes: Manual summation of the sources may not equal to the Total due to rounding.
BAAQMD = Bay Area Air Quality Management District
MT = metric ton
CO_2e = carbon dioxide equivalent
GWh = gigawatt-hours

1 New buildings are assumed to comply with the 2019 Building Energy Efficiency Standards and are modeled to be 10.7 percent and 1 percent more energy efficient for electricity and natural gas, respectively, compared to the 2016 Building Energy Efficiency Standards (NORESCO 2018). The proposed solar photovoltaic system would generate up to 8.083 GWh per year of renewable electricity and would provide 100 percent of the anticipated electricity demand of the proposed project.
Source: NORESCO. 2018, June 29. Impact Analysis: 2019 Update to California Energy Efficiency Standards for Residential and Nonresidential Buildings.

2 Energy sector emissions are associated with project-related natural gas usage.

3 Based on calendar year 2021 aggregated emission rates derived from EMFAC2017 Version 1.0.2 emissions data and CalEEMod methodology.

4 Assumes 33 percent of vehicles would be zero emission.

5 Assumes 100 percent zero-emission drayage trucks.

6 Assumes 100 percent of trucks would be model year 2014 or newer.

7 Based on model years 2014 through 2021 emission rates derived from EMFAC2017 Version 1.0.2 emissions data and CalEEMod methodology.

8 Based on BAAQMD's 1,100 MT CO_2e/year bright-line threshold for AB 32 and the SB 32 GHG reduction target of 40 percent below 1990 levels by year 2030.

Source: CalEEMod Version 2016.3.2; Appendix B.

In 2023, the proposed project assumes 100 percent of off-road equipment and drayage trucks used in daily operations would be zero emission. Additionally, 65 percent of delivery vehicles are also assumed to be ZEVs, and 100 percent of heavy-duty trucks are assumed to be model year 2014 and newer. The GHG emissions associated with operation of the proposed project starting in year 2023 are shown in Table 3.7-7, which includes the amortized construction emissions from Table 3.7-5. As shown therein, the proposed project is estimated to generate 5,219 MT CO_2e/year, which would exceed the bright-line threshold of 660 MT CO_2e/year and efficiency threshold of 3.2 MT CO_2e/year per service population.

Table 3.7-7: Year 2023 Operational GHG Emissions Forecast

Source	GHG Emissions (MT CO_2e/year)
	MT CO_2e/year
Amortized Construction	68
Area	< 1
Energy[1,2]	571
On-Road Mobile Sources (Passenger)[3]	1,219
On-Road Mobile Sources (Delivery Vehicles)[3,4]	200
On-Road Mobile Sources (Drayage)[3,5]	0
On-Road Mobile Sources (Heavy-Duty Trucks)[6,7]	2,704
Waste	341
Water/Wastewater	115
Total	**5,218**
Bright-Line Screening Threshold[8]	**660**
Exceeds Threshold?	**Yes**
Service Population (Employees)	**573**
MT CO_2e/Year/Service Population	**9.1**
Efficiency Threshold	**3.2**
Exceeds Threshold?	**Yes**
MT CO_2e Beyond Threshold	**3,384**

Notes: Manual summation of the sources may not equal to the Total due to rounding.
BAAQMD = Bay Area Air Quality Management District
MT = metric ton
CO_2e = carbon dioxide equivalent
GWh = gigawatt-hours

1 New buildings are assumed to comply with the 2019 Building Energy Efficiency Standards and are modeled to be 10.7 percent and 1 percent more energy efficient for electricity and natural gas, respectively, compared to the 2016 Building Energy Efficiency Standards (NORESCO 2018). The proposed solar photovoltaic system would generate up to 8.083 GWh per year of renewable electricity and would provide 100 percent of the anticipated electricity demand of the proposed project.
Source: NORESCO. 2018, June 29. Impact Analysis: 2019 Update to California Energy Efficiency Standards for Residential and Nonresidential Buildings.

2 Energy sector emissions are associated with project-related natural gas usage.

3 Based on calendar year 2021 aggregated emission rates derived from EMFAC2017 Version 1.0.2 emissions data and CalEEMod methodology.

4 Assumes 65 percent of vehicles would be zero emission.

5 Assumes 100 percent zero-emission drayage trucks.

6 Assumes 100 percent of trucks would be model year 2014 or newer.

7 Based on model years 2014 through 2021 emission rates derived from EMFAC2017 Version 1.0.2 emissions data and CalEEMod methodology.

8 Based on BAAQMD's 1,100 MT CO_2e/year bright-line threshold for AB 32 and the SB 32 GHG reduction target of 40 percent below 1990 levels by year 2030.

Source: CalEEMod Version 2016.3.2; Appendix B.

In 2025, the proposed project assumes 100 percent of off-road equipment and drayage trucks used in daily operations would be zero emission. Additionally, 80 percent of delivery vehicles are also assumed to be ZEVs, and 100 percent of heavy-duty trucks are assumed to be ZEVs. The GHG emissions associated with operation of the proposed project starting in year 2025 are shown in Table 3.7-8, which includes the amortized construction emissions from Table 3.7-5. As shown therein, the proposed project is estimated to generate 2,364 MT CO_2e/year, which would exceed the bright-line threshold of 660 MT CO_2e/year and efficiency threshold of 3.2 MT CO_2e/year per service population.

Table 3.7-8: Year 2025 Operational GHG Emissions Forecast

Source	GHG Emissions (MT CO_2e/year)
	MT CO_2e/year
Amortized Construction	68
Area	< 1
Energy[1,2]	571
On-Road Mobile Sources (Passenger)[3]	1,160
On-Road Mobile Sources (Delivery Vehicles)[3,4]	109
On-Road Mobile Sources (Drayage)[3,5]	0
On-Road Mobile Sources (Heavy-Duty Trucks)[6,7]	0
Waste	341
Water/Wastewater	115
Total	**2,364**
Bright-Line Screening Threshold[8]	**660**
Exceeds Threshold?	**Yes**
Service Population (Employees)	**573**
MT CO_2e/Year/Service Population	**4.1**
Efficiency Threshold	**3.2**
Exceeds Threshold?	**Yes**
MT CO_2e Beyond Threshold	**530**

Notes: Manual summation of the sources may not equal to the Total due to rounding.
BAAQMD = Bay Area Air Quality Management District
MT = metric ton
CO_2e = carbon dioxide equivalent
GWh = gigawatt-hours
ZEV = Zero-Emission Vehicle

[1] New buildings are assumed to comply with the 2019 Building Energy Efficiency Standards and are modeled to be 10.7 percent and 1 percent more energy efficient for electricity and natural gas, respectively, compared to the 2016 Building Energy Efficiency Standards (NORESCO 2018). The proposed solar photovoltaic system would generate up to 8.083 GWh per year of renewable electricity and would provide 100 percent of the anticipated electricity demand of the proposed project.

Source: NORESCO. 2018, June 29. Impact Analysis: 2019 Update to California Energy Efficiency Standards for Residential and Nonresidential Buildings.

[2] Energy sector emissions are associated with project-related natural gas usage.

Source	GHG Emissions (MT CO_2e/year)
	MT CO_2e/year
[3] Based on calendar year 2021 aggregated emission rates derived from EMFAC2017 Version 1.0.2 emissions data and CalEEMod methodology.	
[4] Assumes 80 percent of vehicles would be zero emission.	
[5] Assumes 100 percent zero-emission drayage trucks.	
[6] Assumes 100 percent of trucks would ZEVs.	
[7] Based on model years 2014 through 2021 emission rates derived from EMFAC2017 Version 1.0.2 emissions data and CalEEMod methodology.	
[8] Based on BAAQMD's 1,100 MT CO_2e/year bright-line threshold for AB 32 and the SB 32 GHG reduction target of 40 percent below 1990 levels by year 2030.	
Source: CalEEMod Version 2016.3.2; Appendix B.	

In 2027, the proposed project assumes 100 percent of off-road equipment and drayage trucks used in daily operations would be zero emission. Additionally, 100 percent of delivery vehicles and heavy-duty trucks are assumed to be ZEVs. The GHG emissions associated with operation of the proposed project starting in year 2027 are shown in Table 3.7-9, which includes the amortized construction emissions from Table 3.7-5. As shown therein, the proposed project is estimated to generate 2,205 MT CO_2e/year, which would exceed the bright-line threshold of 660 MT CO_2e/year and efficiency threshold of 3.2 MT CO_2e/year per service population.

Table 3.7-9: Year 2027 Operational GHG Emissions Forecast

Source	GHG Emissions (MT CO_2e/year)
	MT CO_2e/year
Amortized Construction	68
Area	< 1
Energy[1,2]	571
On-Road Mobile Sources (Passenger)[3]	1,110
On-Road Mobile Sources (Delivery Vehicles)[3,4]	0
On-Road Mobile Sources (Drayage)[3,5]	0
On-Road Mobile Sources (Heavy-Duty Trucks)[6]	0
Waste	341
Water/Wastewater	115
Total	**2,205**
Bright-Line Screening Threshold[7]	**660**
Exceeds Threshold?	**Yes**
Service Population (Employees)	**573**
MT CO_2e/Year/Service Population	**3.8**
Efficiency Threshold	**3.2**

Source	GHG Emissions (MT CO_2e/year)
	MT CO_2e/year
Exceeds Threshold?	**Yes**
MT CO_2e Beyond Threshold	**371**

Notes: Manual summation of the sources may not equal to the Total due to rounding.
BAAQMD = Bay Area Air Quality Management District
MT = metric ton
CO_2e = carbon dioxide equivalent
GWh = gigawatt-hours

1 New buildings are assumed to comply with the 2019 Building Energy Efficiency Standards and are modeled to be 10.7 percent and 1 percent more energy efficient for electricity and natural gas, respectively, compared to the 2016 Building Energy Efficiency Standards (NORESCO 2018). The proposed solar photovoltaic system would generate up to 8.083 GWh per year of renewable electricity and would provide 100 percent of the anticipated electricity demand of the proposed project.
Source: NORESCO. 2018, June 29. Impact Analysis: 2019 Update to California Energy Efficiency Standards for Residential and Nonresidential Buildings.

2 Energy sector emissions are associated with project-related natural gas usage.

3 Based on calendar year 2021 aggregated emission rates derived from EMFAC2017 Version 1.0.2 emissions data and CalEEMod methodology.

4 Assumes 100 percent of vehicles would be zero emission.

5 Assumes 100 percent zero-emission drayage trucks.

6 Assumes 100 percent of heavy-duty trucks would zero emission.

7 Based on BAAQMD's 1,100 MT CO_2e/year bright-line threshold for AB 32 and the SB 32 GHG reduction target of 40 percent below 1990 levels by year 2030.

Source: CalEEMod Version 2016.3.2; Appendix B.

The proposed project would install a PV system that would provide up to 8,083,000 kWh/year of renewable electricity, which is anticipated to cover the electricity demand of the proposed project. In addition, the proposed project would include the purchase and use of zero-emission on-road vehicles and trucks in addition to off-road equipment, as illustrated in the operational GHG emission tables above. Additionally, providing the necessary infrastructure to support ZEV and equipment operating on-site is also included in the proposed project. Therefore, Mitigation Measure (MM) GHG-1f would require the project applicant to ensure the proposed project's electricity demand, including that resulting from the EV fleet, would be satisfied by rooftop solar or carbon-free electricity service. Furthermore, implementation of MM GHG-1a through MM GHG-1e would complement and supplement actions to be taken as part of the conditions of approval and reduce emissions to the extent possible. Because the majority of operational GHG emissions would be generated from the operation of employee passenger vehicles traveling to and from the facility, MM TRANS-1 would also serve to reduce potential GHG emission generation from mobile sources. MM TRANS-1 would require the implementation of a Transportation Demand Management (TDM) Program which would outline commuter and ride-sharing programs for the proposed facility. Nevertheless, even with incorporation of these recommended measures, it is anticipated that operation of the proposed project would still exceed the bright-line GHG emissions threshold of 660 MT CO_2e/year and efficiency threshold of 3.2 MT CO_2e/year per service population.

Moreover, as the anticipated lifetime of the proposed project (30 years) would extend into and beyond 2045, the proposed project would need to achieve carbon neutrality to demonstrate

consistency with the GHG reduction goal established by Executive Order B-55-18. As demonstrated in Table 3.7-9, the proposed project would generate an estimated 2,205 MT CO_2e per year beyond 2027, including into and beyond 2045. As such, the proposed project would generate net GHG emissions and would require mitigation to achieve consistency with the carbon neutrality goals established by Executive Order B-55-18.

As shown in above, the proposed project would continue to exceed the BAAQMD significance threshold for GHG emissions. Therefore, MM GHG-1g would be required to reduce operational GHG emissions to less than significant levels, which would require the project applicant to purchase carbon credits in an amount sufficient to offset operational GHG emissions generated by the proposed project to below the previously identified significance thresholds. Therefore, impacts would be less than significant with mitigation.

Level of Significance Before Mitigation

Potentially significant

Mitigation Measures

MM GHG-1a Prior to the issuance of building permits, the project applicant/developer shall demonstrate (e.g., provide building plans) to the satisfaction of the Contra Costa County Department of Conservation and Development, that the proposed buildings are designed and will be built to, at minimum, meet the Tier 2 advanced energy efficiency requirements of the Nonresidential Voluntary Measures of the California Green Building Standards Code, Division A5.2, Energy Efficiency, as outlined under Section A5.203.1.2.2.

MM GHG-1b Prior to issuance of occupancy permits, the project applicant/developer shall demonstrate to the satisfaction of the Contra Costa County Department of Conservation and Development, that the proposed parking areas for passenger automobiles are designed and will be built to accommodate electric vehicle (EV) charging stations. At minimum, the parking shall be designed to accommodate a number of EV charging stations equal the Tier 2 Nonresidential Voluntary Measures of the California Green Building Standards Code, Section A5.106.5.3.2.

MM GHG-1c Prior to issuance of occupancy permits, the project applicant/developer shall demonstrate to the satisfaction of the Contra Costa County Department of Conservation and Development, that the proposed parking areas for passenger automobiles are designed and will be built to provide parking for low-emitting, fuel-efficient, and carpool/van vehicles. At minimum, the number of preferential parking spaces for passenger automobiles shall equal the Tier 2 Nonresidential Voluntary Measures of the California Green Building Standards Code, Section A5.106.5.1.2.

MM GHG-1d To reduce idling emissions from transport trucks, which places restrictions on idling, the project applicant/developer shall have signage placed at truck access gates, loading docks, and truck parking areas that clearly notes idling is strictly prohibited on the subject property. In coordination with Contra Costa County, the project

applicant/developer shall also place similar signs in the adjacent streets in the Richmond/San Pablo area. At minimum, each sign placed outside the interior premises of the subject property shall note the idling prohibition on the adjacent streets and include telephone numbers of the building facilities manager and the California Air Resources Board (ARB) to report violations. All signage shall be made of weather-proof materials. All site and architectural plans submitted to the Contra Costa County Department of Conservation and Development shall note the locations of these signs. Prior to issuance of occupancy permits, the Contra Costa County Department of Conservation and Development shall verify compliance with these requirements herein.

MM GHG-1e All landscaping equipment (e.g., leaf blower) used for property management shall be electric-powered only. The property manager/facility owner shall provide documentation (e.g., purchase, rental, and/or services agreement) to the Contra Costa County Department of Conservation and Development to verify, to the County's satisfaction, that all landscaping equipment utilized will be electric-powered.

MM GHG-1f Prior to the issuance of grading and building permits for the proposed project, the project applicant shall provide Contra Costa County with documentation demonstrating that the rooftop photovoltaic system will satisfy 100 percent of operational electricity consumed by the project, including the electricity demand resulting from the electric vehicle (EV) fleet.

If the rooftop photovoltaic system will not be able to supply the additional electricity demand resulting from the EV fleet charging requirements, the project applicant shall, prior to the issuance of the certificate of occupancy for the proposed project, provide Contra Costa County 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, 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. This documentation shall also demonstrate that 100 percent carbon-free electricity sources will be utilized for the first 30 years of operation.

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 of all electricity consumption and supply associated with the proposed project's operation for five years and make these records available to the County upon request.

MM GHG-1g Prior to the issuance of the certificate of occupancy for the proposed project, the project applicant shall provide the County with documentation demonstrating the purchase of voluntary carbon credits pursuant to the following performance standards and requirements: the carbon offsets shall achieve real, permanent,

quantifiable, verifiable, and enforceable reductions as set forth in California Health and Safety Code Section 38562(d)(1); and ii. one carbon offset credit shall mean the past reduction or sequestration of one metric ton (MT) of carbon dioxide equivalent (CO_2e) that is "not otherwise required" (CEQA Guidelines § 15126.4(c)(3)). The purchase shall be through a verified greenhouse gas (GHG) emissions credit broker in an amount sufficient to offset operational GHG emissions of no less than 3,688 MT CO_2e per year starting in 2021, 3,384 MT CO_2e per year starting in 2023, 530 MT CO_2e per year starting in 2025, 371 MT CO_2e per year starting in 2027, and 2,205 MT CO_2e per year starting in 2045 for the first 30 years of project operations, based on current estimates of the project related GHG emissions. Alternatively, the project applicant may purchase the total amount estimated over the lifetime of the proposed project (30 years), which is estimated to be 35,112 MT CO_2e. The purchase shall be verified as occurring prior to approval of occupancy permits. Copies of emission estimates and offset purchase contract(s) shall be provided to the County for review and approval prior to the issuance of the certificate of occupancy for the proposed project.

MM TRANS-1 Prior to issuance of the certificate of occupancy, the applicant shall retain a qualified transportation consultant to prepare a project-specific Transportation Demand Management (TDM) Program that could incorporate the following measures, where feasible. The TDM Program shall be reviewed and approved by the County, and the applicant shall implement all approved TDM measures.

- Commute Trip Reduction Program
- Ride-sharing Program
- End of Trip Facilities
- Last Mile Services
- New Employee Commute Orientation
- Preferential Parking Program
- Employer-Sponsored Vanpool
- Transportation Network Company (TNC) Partnership
- Employer-Sponsored Shuttle to/from BART Station(s) or Other Transit Hub
- Carpool and Vanpool Ride-Matching Services

Level of Significance After Mitigation

Less than significant impact.

GHG Emissions Reduction Plan Consistency

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.

The following discusses project consistency with applicable plans adopted for the purpose of reducing GHG emissions, which include the ARB Scoping Plan, MTC/ABAG Plan Bay Area 2040, and the County CAP.

ARB Scoping Plan

The ARB Scoping Plan is the State's strategy to achieve the GHG emissions reduction goals under AB 32 and SB 32, as well as a long-term strategy to achieve the State's overall carbon neutrality goals for 2050 under Executive Order S-03-05. It is applicable to State agencies but is not directly applicable to cities/counties and individual projects (i.e., the Scoping Plan does not require the County to adopt policies, programs, or regulations to reduce GHG emissions). However, new regulations adopted by the State agencies outlined in the Scoping Plan result in GHG emissions reductions at the local level. As a result, local jurisdictions benefit from reductions in transportation emissions rates, increases in water efficiency in the building and landscape codes, and other Statewide actions that affect a local jurisdiction's emissions inventory from the top down.

Transportation Sector

Trucks

The use of ZEVs for delivery vehicles would be phased in with 33 percent ZEV in analysis year 2021, 65 percent ZEV in year 2023, 80 percent ZEV in year 2025, and 100 percent ZEV in year 2027. Drayage vehicles are assumed to be 100 percent ZEV in all analysis years, and heavy-duty trucks would be model year 2014 or newer in analysis years 2021 and 2023 while they are assumed to be 100 percent ZEV in years 2025 and 2027.

In general, the State strategy for the transportation sector for medium and heavy-duty trucks is focused on making trucks more efficient and expediting truck turnover rather than reducing VMT from trucks. This is in contrast to the passenger vehicle component of the transportation sector, where both per capita VMT reductions and an increase in vehicle efficiency are forecast to be needed to achieve the overall State emissions reductions goals.

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 the medium and heavy-duty trucks:

- ARB's Mobile Source Strategy focuses on reducing GHGs through the transition to zero and low emission vehicles and from medium-duty and heavy-duty trucks. [89]
- 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. [90]
- ARB's Emissions Reduction Plan for Ports and Goods Movement (Goods Movement Plan) in California focuses on reducing heavy-duty truck-related emissions focus on establishment of emissions standards for trucks, fleet turnover, truck retrofits, and restriction on truck idling. [91]

[89] California Air Resources Board (ARB). 2017. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. November. Website: https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf. Accessed: March 18, 2021.

[90] Ibid

[91] California Air Resources Board (ARB). 2006. Emission Reduction Plan for Ports and Goods Movement in California. April 20. Website:

> While the focus of 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.

Thus, these strategies would contribute to controlling heavy-duty truck GHG emissions associated with the proposed project. The proposed project would not conflict with Statewide strategies. Trucks on-site are 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 ARB's Advance Clean Truck (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 3 truck sales, 75 percent of Class 4 to 8 straight truck sales, and 40 percent of truck tractor sales.[92] Furthermore, the conditions of approval for the proposed project would require use of model year 2014 or newer heavy-duty trucks with a transition to zero-emission trucks, which is also consistent with the State's goal to expedite turnover of older trucks with newer, more efficient trucks.

Passenger Vehicles

By the year 2027, approximately 51 percent of the project's total operational GHG emissions would be associated with light-duty passenger vehicles. Statewide strategies to reduce GHG emissions from passenger vehicles and the transportation sector in general include the LCFS and changes in the Corporate Average Fuel Economy Standards (e.g., Pavley I and Pavley California Advanced Clean Cars program).

In addition, as previously discussed under Impact GHG-1, the proposed project would be required to implement MM GHG-1b and MM GHG-1c, which each would require the installation of EV charging infrastructure and establish preferential parking for low-emitting, fuel-efficient, and carpool/van vehicles beyond what would otherwise be required by the California Building Code or County Municipal Code. As stipulated by MM GHG-1b, the proposed project would be required to ensure that parking be designed to accommodate a number of EV charging stations as prescribed by the Tier 2 Nonresidential Voluntary Measures of the California Green Building Standards Code, Section A5.106.5.3.2. As the proposed project would develop greater than 200 parking spaces total (438 auto parking spaces and 266 trailer parking spaces), MM GHG-1b would require the installation of EV charging stations that equal no less than 8 percent of total parking spaces, or 57 EV charging stations. Similarly, as stipulated by MM GHG-1c, the proposed project would be required to ensure that parking be designed to accommodate a number of preferential parking stalls as prescribed by the Tier 2 Nonresidential Voluntary Measures of the California Green Building Standards Code, Section A5.106.5.1.2. As the proposed project would develop greater than 200 parking spaces total

https://bayplanningcoalition.org/downloads/library/Emission_Reduction_Plan_for_Ports_and_Intl_Goods_Movement_in_CA.pdf. Accessed March 18, 2021.

[92] California Air Resources Board (ARB). 2020. California Greenhouse Emissions for 2000 to 2018: Trends of Emissions and Other Indicators. Website: https://www.arb.ca.gov/cc/inventory/data/data.htm. Accessed: May 18, 2021.

(438 auto parking spaces and 266 trailer parking spaces), MM GHG-1c would require the establishment of preferential parking stalls for low-emitting, fuel-efficient, and carpool/van vehicles that equal no less than 12 percent of total parking spaces, or 84 parking stalls. The implementation of these measures would ensure that the proposed project includes EV charging infrastructure beyond what would otherwise be required by the California Building Code and County Municipal Code to support the future use of EVs and yield potential mobile source GHG emissions reductions.

Moreover, Table 3.13-3 in Section 3.13, Transportation, provides a list of TDM commuter strategies that could be implemented as part of the proposed project. The proposed project would be required to implement MM TRANS-1, which would require the implementation of feasible TDM measures to encourage carpooling, the use of existing public transit networks, and other VMT-reducing strategies. As such, the implementation of TRANS-1 would assist in reducing employee generated VMT and subsequent mobile source GHG emissions.

Energy/Commercial-Residential Sectors

Energy use generated by the project represents the second largest source of emissions (10 percent) after the transportation sector. New buildings under the proposed project would meet the current CALGreen and Building Energy Efficiency standards. In addition, the proposed PV system is anticipated to provide up to 8,083,000 kWh/year of renewable electricity, which is anticipated to cover 100 percent of the building and land use electricity demand of the proposed project. Furthermore, MM GHG-1f would require the proposed project to implement all-electric building features and eliminate the consumption of natural gas during project operation. As a result, the proposed project would be consistent with the State's goals for this sector.

Other Sources

Other sources of GHG emissions represent approximately 8 percent of the total emissions inventory, with the vast majority from solid waste disposal (6 percent), 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. [93] Therefore, the proposed project would be consistent with the State's goals for the recycling and waste sector.

The proposed project would be required to adhere to the programs and regulations identified by the Scoping Plan and implemented by State, regional, and local agencies to achieve the Statewide GHG reduction goals of AB 32 and SB 32. In addition, as described under Impact GHG-1, MMs GHG-1a through GHG-1g would ensure that the proposed project would not exceed significance emissions thresholds consistent with the reduction goals of AB 32, SB 32, and Executive Order B-55-18. Therefore, the proposed project would not obstruct implementation of the ARB Scoping Plan.

[93] California Air Resources Board (ARB). 2020. California Greenhouse Emissions for 2000 to 2018: Trends of Emissions and Other Indicators. Website: https://www.arb.ca.gov/cc/inventory/data/data.htm. Accessed: May 18, 2021.

Metropolitan Transportation Commission Plan Bay Area

As part of the implementing framework for Plan Bay Area 2040, local governments have identified planned development areas to focus growth. The project site is within the North Richmond planned development area. Thus, the proposed project would be consistent with the overall goals of Plan Bay Area, which include concentrating new investment in areas that would encourage job growth. In addition, the proposed project would be developed in an area with existing infrastructure. Therefore, the proposed project would not conflict with the land use concept plan in Plan Bay Area 2040.

Contra Costa County Climate Action Plan

Contra Costa County adopted its CAP on December 15, 2015. The CAP is intended to streamline future environmental review of development projects in Contra Costa County by following the CEQA Guidelines and meeting the BAAQMD expectations for a qualified GHG reduction strategy. The County's strategy is structured around the following six topic areas: energy efficiency and conservation, renewable energy, land use and transportation, solid waste, water conservation, and government operations.

The proposed project incorporates several design elements that would reduce GHG emissions, such as conformance to the 2019 Building Energy Efficiency Standards and CALGreen building regulations and installation of a PV system. In addition, a development checklist under the CAP has been filled out for the proposed project to demonstrate compliance and is included in Appendix B. As identified in the checklist, the proposed project would not require a general plan amendment. The project will also be pursuing Leadership in Energy and Environmental Design (LEED$^{TM)}$ certification, resulting in additional energy efficiency, water conservation, and waste reduction strategies. The proposed project would also be consistent with the measures in the CAP, as illustrated in Table 3.7-10. Therefore, this impact would be less than significant.

Table 3.7-10: Contra Costa County Climate Actional Plan Consistency

Applicable Goals	Measures	Consistency Analysis
Energy Efficiency and Conservation		
Increase energy efficiency in residential and commercial building stock and reduce community-wide electricity and natural gas use.	EE-2: Provide opportunities for nonresidentialbuildings to become more energy efficient.	**Consistent.** The proposed project would comply with the CaliforniaBuilding Code and the 2019 Building Energy Efficiency Standards. This would improve energy efficiency by 10.7 percent and 1 percent for electricity and natural gas, respectively, compared to the 2016 Building Energy Efficiency Standards. The proposed project would also beLEED^{TM} certified and will include insulated office spaces, warehouse motion-sensor lighting, and low power density warehouse lighting.
	EE-6: Support the Statewide transition to net zeroenergy construction for new residential buildings by 2020 and new nonresidential buildings by 2030.	

Applicable Goals	Measures	Consistency Analysis
Renewable Energy		
Increase the production of renewable energy from small-scale andcommercial-scale renewable energy installations.	RE-1: Promote installation of alternative energy facilities on homes and businesses	**Consistent.** The proposed project would install a PV systemthat would provide 8,083,000 kWh/year of renewable electricity.Additionally, overall, the proposed buildings would comply with Title 24 solar requirements and would be constructed to support a roof-mounted solar system.
Land Use and Transportation		
Reduce transportation emissions.	LUT-1: Maintain and expand access to goods, services, and other destinations through increased transportation alternatives (mobility improvements) and improved proximity (land use improvements).	**Consistent**. The proposed project would be subject to the Bay Area's Commuter Benefits Program, which requires all employers in the Air District's jurisdiction with 50 or more full-time employees to offer commuter benefits to their employees.
	LUT-2: Expand the use of alternative fuels invehicle travel.	**Consistent.** CenterPoint would provide preferred parking for low-emitting and fuel-efficient vehicles. Electrical conduits would be provided in the parking lot to accommodate future EV parking spaces. Additionally, per the conditions of approval, future tenants would be required to obtain ZEVs and trucks for their fleets.
	LUT-4: Reduce VMT.	**Consistent**. While the proposed project is not adjacent to transit stations, CenterPoint would provide other VMT-reducing measures, such as bicycle parking to encourage alternative forms of travel. The proposed project is consistent with the overarching goals of LUT-4.
Waste Reduction and Recycling		
Increase recycling and composting in the commercial sector.	W-1: Develop a waste reduction strategy toincrease recycling and reuse of materials.	**Consistent**. The proposed project would comply with AB 341, which requires mandatory commercial recycling for businesses that generate 4 cubic yards or more of commercial solid waste perweek. Additionally, the proposed project would reduce construction waste by 75 percent and use 30 percent recycled content during construction of the proposed facility.
Water Conservation		
Conserve water.	WE-1: Reduce water demand.	**Consistent**. The proposed project would include water efficiency measures required under CALGreen. In addition, the project would be designed and built to attain LEED™ certification and would include water efficient indoor fixtures above and beyond the requirements of CALGreen as well as water efficient landscaping outdoors.

Applicable Goals	Measures	Consistency Analysis
Source: Contra Costa County. 2015. December 15. Climate Action Plan. Website: http://www.co.contra-costa.ca.us /DocumentCenter/View/39791. Accessed March 9, 2021.		

Level of Significance

Less than significant impact.

3.7.5 - Cumulative Impacts

GHG emissions and global climate change inherently represent cumulative impacts. GHG emissions cumulatively contribute to the significant adverse environmental impacts of global climate change. No single project could generate enough GHG emissions to noticeably change the global average temperature; instead, the GHG emissions from past, present, and future projects and activities have contributed to and would contribute to global climate change and its associated environmental impacts. According to the BAAQMD, project GHG emissions are inherently cumulative and do not require the estimation of cumulative projects in the region of the project. Thus, the determination of GHG cumulative impacts is based on the State target established by AB 32 to reduce GHG emissions to 1990 levels by 2020. In order to ensure that this goal would be achieved, Air Districts and Lead Agencies developed GHG thresholds to ensure compliance with the State target. Projects with GHG emissions in conformance with these thresholds, therefore, would not be considered significant for purposes of CEQA. In addition, although the emissions from such cumulative projects would add an incremental amount to the overall GHG emissions that cause global climate change impacts, emissions from projects consistent with these thresholds would not be a "cumulatively considerable" contribution under CEQA. Such projects would not be "cumulatively considerable," because they would be helping to solve the cumulative problem as a part of the AB 32 process. As such, there would be a less than significant impact related to GHG emissions generation.

Level of Cumulative Significance

Less than significant impact.

3.8 - Hazards and Hazardous Materials

3.8.1 - Introduction

This section describes the existing hazards and hazardous materials in the project area as well as the relevant regulatory framework. This section also evaluates the possible impacts related to hazards and hazardous materials that could result from implementation of the proposed project. Information included in this section is based, in part, on the Phase I Environmental Site Assessment (Phase I ESA), 506 to 540 Brookside Drive, prepared by Cornerstone Earth Group, Inc. (Cornerstone) in March 2018, and the Phase I ESA, 550 and 560 Brookside Drive, prepared by Cornerstone in March 2018, included as Appendix F. No comments were received during the Notice of Preparation (NOP) comment period related to hazards and hazardous materials.

3.8.2 - Environmental Setting

Fundamentals

Hazards

This description of existing conditions focuses on hazards from fire and the potential for fire-related sparking from overhead power lines, as well as hazardous materials and wastes. A hazard is a situation that poses a level of threat to life, health, property, or the environment. Hazards can be dormant or potential, with only a theoretical risk of harm. However, once a hazard becomes active, it can create an emergency. A hazardous situation that has already occurred is called an incident. Emergency response is action taken in response to an unexpected and dangerous occurrence in an attempt to mitigate its impact on people, structures, or the environment. Emergency situations can range from natural disasters to hazardous materials problems and transportation incidents.

Hazards Materials and Wastes

Hazardous materials include but are not limited to hazardous materials, hazardous substances, and hazardous wastes, as defined in Section 25501 and Section 25117, respectively, of the California Health and Safety Code. A hazardous material is any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety, or to the environment, if released; and any material that a handler or an administering regulatory agency under Health and Safety Code Section 25501 has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment. Various properties of a substance may cause that substance to be considered hazardous, including:

- Toxicity—causes human health effects;
- Ignitibility—has the ability to burn;
- Corrosivity—causes severe burns or damage to materials; and
- Reactivity—causes explosions or generates toxic gases.

Hazardous Building Materials

Many older buildings contain building materials consisting of hazardous materials. These materials include lead-based paint (LBP), asbestos-containing material (ACM), and polychlorinated biphenyls (PCBs).

Prior to the United States Environmental Protection Agency (EPA) ban in 1978, LBP was commonly used on interior and exterior surfaces of buildings. Disturbances such as sanding and scraping activities, renovation work, gradual wear and tear, old peeling paint, and paint dust particulates have been found to contaminate surface soils or cause lead dust to migrate and affect indoor air quality. Exposure to residual lead can cause severe health effects, especially in children.

Asbestos is a naturally occurring fibrous material that was extensively used as a fireproofing and insulating agent in building construction materials before such uses were banned by the EPA in the 1970s. In addition, many types of electrical equipment contained PCBs as an insulator, including transformers and capacitors. After PCBs were determined to be a carcinogen in the mid to late 1970s, the EPA banned PCB use in new equipment and began a program to phase out certain existing PCB-containing equipment. For example, fluorescent lighting ballasts manufactured after January 1, 1978, do not contain PCBs, and are required to have a label clearly stating that PCBs are not present in the unit.

Hazardous Substances

A hazardous substance can be any biological, natural, or chemical substance, whether solid, liquid, or gas, which may cause harm to human health. Hazardous substances are classified based on their potential health effects, whether acute (immediate) or chronic (long-term). Dangerous goods are classified based on immediate physical or chemical effects, such as fire, explosion, corrosion, and poisoning. An accident involving dangerous goods could seriously harm human health or damage property or the environment. Harm to human health may happen suddenly (acute), such as dizziness, nausea, and itchy eyes or skin; or it may happen gradually over years (chronic), such as dermatitis or cancer. Some people can be more susceptible than others. Hazardous substances and dangerous goods can include antiseptic used for a cut, paint for walls, a cleaning product for the bathroom, chlorine in a pool, carbon monoxide from a motor vehicle, fumes from welding, vapors from adhesives, or dust from cement, stone, or rubber operations. Such hazardous substances can make humans very sick if they are not used properly.

Hazardous Wastes

Hazardous waste is any hazardous material that is to be discarded, abandoned, or recycled. The criteria that define a material as hazardous also define a waste as hazardous. Specifically, materials and waste may be considered hazardous if they are poisonous (toxic); can be ignited by open flame (ignitable); corrode other materials (corrosive); or react violently, explode, or generate vapors when mixed with water (reactive). Soil or groundwater contaminated with hazardous materials above specified regulatory State or federal thresholds is considered hazardous waste if it is removed from a site for disposal. If handled, disposed, or otherwise handled improperly, 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, Sections 66261.20–24 contains technical descriptions of toxic characteristics that could cause soil or groundwater to be classified as hazardous waste.

Hazardous Materials Listing

The Cortese List is a list of known hazardous materials or hazardous waste facilities that meet one or more of the provisions of Government Code Section 65962.5, including:

- The list of hazardous waste and substances sites from the California Department of Toxic Substances Control (DTSC) EnviroStor database.[1]
- The list of Leaking Underground Storage Tank (LUST) sites by County and fiscal year from the California State Water Resources Control Board (State Water Board) GeoTracker database.[2]
- The list of solid waste disposal sites identified by the State Water Board with waste constituents exceeding hazardous waste levels outside the waste management unit.[3]
- The list of active cease-and-desist orders and cleanup and abatement orders from the State Water Board.[4]
- The list of hazardous waste facilities subject to corrective action under Section 25187.5 of the Health and Safety Code, as identified by the DTSC.[5]

Existing Fire-related Conditions and Presence of Hazardous Materials

Hazards in the County and project area discussed in this section are primarily related to fire and hazardous materials. Fire hazards and hazardous materials are typically site-specific, so existing conditions related to fire hazards and the transport, use, and disposal of hazardous materials are discussed below under "project site."

Fire hazards present a considerable problem to vegetation and wildlife habitats throughout the County. Grassland fires easily ignite, particularly in dry seasons. These fires are relatively easily controlled if they can be reached by fire equipment; the burned slopes, however, are highly subject to erosion and gullying. While brushlands are naturally adapted to frequent light fires, fire protection in recent decades has resulted in heavy fuel accumulation on the ground. Wildfire is a serious hazard in undeveloped areas and on large lot home sites with extensive areas of unirrigated vegetation, particularly near areas of natural vegetation and steep slopes, since fires tend to burn more rapidly on steeper terrain. Wildfire is also a serious hazard in areas of high wind, given that fires will travel faster and farther geographically when winds are higher.

---

1 California Department of Toxic Substances Control (DTSC). "Cortese" list of DTSC's EnviroStor database list of Hazardous Waste and Substances sites. DTSC's Hazardous Waste and Substances Site List—Site Cleanup (Cortese List). Website: https://www.envirostor.dtsc.ca.gov/public/. Accessed March 20, 2021.

2 California State Water Resources Control Board (State Water Board). GeoTracker Database Map. Website: https://geotracker.waterboards.ca.gov/map/. Accessed March 20, 2021.

3 California Environmental Protection Agency (Cal/EPA). 2020. Site Portal. Website: https://siteportal.calepa.ca.gov/nsite/map/results. Accessed March 20, 2021.

4 Ibid.

5 California Environmental Protection Agency (Cal/EPA). "Cortese" list of sites subject to Corrective Action pursuant to Health and Safety Code 25187.5. Website: https://www.calepa.ca.gov/sitecleanup/corteselist/section-65962-5a/. Accessed March 20, 2021.

Contra Costa County

The County contains extensive heavy industrial development that may be associated with hazardous materials uses along its west and north coasts. These heavy industrial uses present potential risks to public safety due to explosion and flammability of petroleum and chemical materials.[6] In addition, storage tanks and pipelines are located throughout the County and could present public safety risks due to geologic conditions. The County does not designate any routes for hazardous material transportation. Most of these materials are regularly carried on the freeways and major roads designated as explosives routes.[7]

Hazardous materials such as asbestos and lead are also likely present in building materials and paints in older structures. Emergency response in the County is coordinated by the Contra Costa County Fire Protection District (CCCFPD). The CCCFPD provides response services to hazardous materials incidents, as well as fire protection and emergency medical services, as discussed further in Section 3.12, Public Services.

The Contra Costa County Office of the Sheriff Emergency Services Division is responsible for planning, outreach, and training or disaster management and emergency preparedness.[8] Land uses in the County range from rural, agricultural, and open space to urban and developed. Most of the County is identified as susceptible to moderate wildland fire hazards, while isolated areas in the western and central areas of the County have a high susceptibility.[9] According to the California Department of Forestry and Fire Protection (CAL FIRE) Fire Hazard Severity Zone Map, much of the County is in a moderate, high, and very high fire hazard zone due to the mountainous terrain and natural vegetation.[10]

Project Site

Cornerstone prepared a Phase I ESA for the 506 to 540 Brookside Drive properties and evaluated hazards and hazardous materials present on-site associated with the former Ninomiya greenhouse nursery and agricultural uses (Appendix F).

Cornerstone also prepared a Phase I ESA for the 550 and 560 Brookside Drive properties and evaluated hazards and hazardous materials present on-site associated with the former Sugihara greenhouse nursery and agricultural uses (Appendix F).

The Phase I ESAs were prepared in accordance with the American Society of Testing and Materials (ASTM) Standard E 1527-13 and the EPA's Standards and Practices for All Appropriate Inquiries rule. As part of preparation of the Phase I ESAs, Cornerstone reviewed prior site investigation documents, aerial photographs, topographic maps, Sanborn fire insurance maps, and City, County, and State

[6] California Environmental Protection Agency (Cal/EPA). "Cortese" list of sites subject to Corrective Action pursuant to Health and Safety Code 25187.5. Website: https://www.calepa.ca.gov/sitecleanup/corteselist/section-65962-5a/. Accessed March 20, 2021.
[7] Contra Costa County General Plan 2005-2020. 2005.
[8] Contra Costa County Office of the Sheriff. Emergency Services Division. Website: https://www.cocosheriff.org/disaster-preparedness/emergency-services-division. Accessed March 20, 2021.
[9] Contra Costa County General Plan 2005-2020. 2005.
[10] California Department of Forestry and Fire Protection (CAL FIRE). Fire Hazard Severity Zone Viewer. Website: http://egis.fire.ca.gov/FHSZ/. Accessed March 20, 2021.

agency files. Cornerstone conducted a review of federal, State, and local regulatory agency databases provided by Environmental Data Resources to evaluate the likelihood of contamination incidents at or near the project site. Lastly, Cornerstone interviewed knowledgeable persons about the site and conducted a site reconnaissance to observe existing property conditions, including the presence of hazardous materials.

506 to 540 Brookside Drive

Based on the findings of the Phase I ESA for 506 to 540 Brookside Drive, the following Recognized Environmental Conditions (RECs) were identified for the project site:

- The project site was historically used for agricultural purposes. The soil quality evaluation identified elevated concentrations of the organochlorine pesticide compound dieldrin, lead, and arsenic in the shallow soil. The soil with these elevated concentrations may require management or removal prior to construction. Based on the proposed development, capping or consolidating and capping beneath impervious pavements or structures would reduce potential risks to future occupants at the project site. Based on the proposed development, capping, or consolidating and capping beneath impervious pavements or structures would reduce potential risks to future occupants at the project site. Alternatively, soil exceeding commercial/industrial screening levels could be removed for off-site disposal at a licensed facility. With either approach, a land use restriction prohibiting sensitive uses, such as residences, and an operation and maintenance plan would be required.

In addition, the Regional Water Quality Control Board (RWQCB) documentation indicated the presence of one 2,000-gallon gasoline underground storage tank (UST) on the Ninomiya Nursery (506 Brookside Drive). No additional information was available related to this reported UST. Cornerstone's magnetometer survey and exploratory test pit investigation did not encounter a UST. If a UST is discovered during site development activities, the Phase I ESA recommends removal under appropriate permits and under appropriate agency oversight.

550 and 560 Brookside Drive

Based on the findings of the Phase I ESA for 550 and 560 Brookside Drive, the following RECs were identified for the project site:

- The project site was historically used for agricultural purposes. The soil quality evaluation identified elevated concentrations of the organochlorine pesticide compound dieldrin, lead, and arsenic in the shallow soil. The soil with these elevated concentrations may require management or removal prior to construction. Based on the proposed development, capping, or consolidating and capping beneath impervious pavements or structures would reduce potential risks to future occupants at the project site. Alternatively, soil exceeding commercial/industrial screening levels could be removed for off-site disposal at a licensed facility. With either approach, a land use restriction prohibiting sensitive uses, such as residences, and an operation and maintenance plan would be required.

The Phase I ESA identified the following Historical RECs for the project site:

- Five USTs (one 500-gallon gasoline, one 2,000-gallon gasoline, two 6000-gallon diesel, and one 10,000-gallon diesel) were located at the Sugihara Nursery (550 Brookside Drive). The USTs were removed on December 15, 1987, and the RWQCB closed the case in 2001 based on "available information, including land use" and that "if a change in land use is proposed, the owner must promptly notify this agency."

3.8.3 - Regulatory Framework

Federal

Occupational Health and Safety Act

The Occupational Safety and Health Administration (OSHA) of the United States Department of Labor is responsible for implementing and enforcing federal laws and regulations that address worker health and safety. OSHA requires specific training for hazardous materials users and handlers, provision of information (procedures for personal safety, hazardous materials storage and handling, and emergency response) to employees who may be exposed to hazardous materials, and acquisition of Material Safety Data Sheets (MSDS) from materials manufacturers. MSDS describe the risks, as well as proper handling and procedures, related to hazardous materials. Employee training must include response and remediation procedures for hazardous material releases and exposures. Construction workers and operational employees at the project site would be subject to these requirements.

Code of Federal Regulations, Titles 29 and 40

Regulations in Code of Federal Regulations Title 29 include requirements to manage and control exposure to LBP and ACM. In California, these requirements are implemented by the California Occupational Safety and Health Administration (Cal/OSHA) under California Code of Regulations Title 8 (see further discussion of California Code of Regulations Title 8 below). The removal and handling of ACM is governed primarily by EPA regulations under Code of Federal Regulations Title 40. The regulations require that the appropriate State agency be notified before any demolition, or before any renovations, of buildings that could contain asbestos or ACM above a specified threshold.

Resource Conservation and Recovery Act and Comprehensive Environmental Response, Compensation, and Liability Act

The EPA is responsible for implementing and enforcing federal laws and regulations pertaining to hazardous materials. The primary legislation includes the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) and the Emergency Planning and Community Right-to-Know Act (known as SARA Title III). RCRA and the 1984 RCRA amendments regulate the treatment, storage, and disposal of hazardous and non-hazardous wastes and mandate that hazardous wastes be tracked from the point of generation to their ultimate fate in the environment, including detailed tracking of hazardous materials during transport and permitting of hazardous material handling facilities. As permitted by RCRA, in 1992, the EPA approved California's program called the Hazardous Waste Control Law (HWCL), administered by the DTSC, to regulate hazardous wastes in California, as discussed further below. The purpose of CERCLA is to identify and clean up chemically contaminated sites that pose a significant environmental

health threat, and the Hazard Ranking System is used to determine whether a site should be placed on the National Priorities List for cleanup activities. SARA relates primarily to emergency management of accidental releases and requires annual reporting of continuous emissions and accidental releases of specified compounds that are compiled into a nationwide Toxics Release Inventory. Finally, SARA Title III requires formation of State and local emergency planning committees that are responsible for collecting material handling and transportation data for use as a basis for planning and provision of chemical inventory data to the community at large under the "right-to-know" provision of the law.

Hazardous Materials Transportation Act

Under the Hazardous Materials Transportation Act of 1975, the United States Department of Transportation (USDOT), Office of Hazardous Materials Safety regulates the transportation of hazardous materials on water, rail, highways, through air, or in pipelines, and enforces guidelines created to protect human health and the environment and reduce potential impacts by creating hazardous material packaging and transportation requirements. It also includes provisions for material classification, packaging, marking, labeling, placarding, and shipping documentation. The USDOT provides hazardous materials safety training programs and supervises activities involving hazardous materials. In addition, the USDOT develops and recommends regulations governing the multimodal transportation of hazardous materials.

Aboveground Petroleum Storage Act, and Spill Prevention, Control, and Countermeasure Rule

The Aboveground Petroleum Storage Act of 1990, and the Spill Prevention, Control, and Countermeasure (SPCC) Rule (amended 2010) of the Oil Pollution Prevention regulation (40 Code of Federal Regulations [CFR] Part 112) require the owner or operator of a tank facility with an aggregate storage capacity greater than 1,320 gallons to notify the local Certified Unified Program Agency (CUPA) and prepare an SPCC Plan. The SPCC Plan must identify appropriate spill containment measures and equipment for diverting spills from sensitive areas and must discuss facility-specific requirements for the storage system, inspections, recordkeeping, security, and training.

Clean Water Act

The Clean Water Act (CWA) (Title 33 § 1251 *et seq*. of the United States Code [33 USC 1251, *et seq*.]) is the major federal legislation governing water quality. The CWA established the basic structure for regulating discharges of pollutants into waters of the United States (not including groundwater). The objective of the act is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters."[11] The CWA establishes the basic structure for regulating the discharge of pollutants into waters of the United States. Responsibility for administering the CWA resides with the State Water Board and nine RWQCBs; the San Francisco Bay RWQCB administers the CWA for western Contra Costa County. Section 404 of the CWA regulates temporary and permanent fill and disturbance of waters of the United States, including wetlands. The United States Army Corps of Engineers (USACE) requires that a permit be obtained if a project proposes to place fill in navigable

[11] United States Environmental Protection Agency (EPA). 2018. Clean Water Act (CWA) and Federal Facilities. Website: https://www.epa.gov/enforcement/clean-water-act-cwa-and-federal-facilities#:~:text=CWA%20is%20the%20primary%20Federal,in%20compliance%20with%20a%20permit. Accessed May 12, 2021.

waters and/or to alter waters of the United States below the ordinary high-water mark in non-tidal waters. Section 401 of the CWA requires compliance with State water quality standards for actions within State waters. Compliance with the water quality standards required under Section 401 is a condition for issuance of a Section 404 permit. Under Section 401 of the CWA, every applicant for a permit or license for any activity that may result in a discharge to a water body must obtain a State water quality certification from the RWQCB to demonstrate that the proposed activity would comply with State water quality standards.

State

California Hazardous Waste Control Law

The HWCL is the primary hazardous waste statute in the State of California and implements RCRA as a "cradle-to-grave" waste management system for handling hazardous wastes in a manner that protects human health and the environment and reduces potential resulting impacts of hazardous waste. The law specifies that generators of hazardous waste have the primary duty to determine whether their waste is hazardous and to ensure proper management. The HWCL also establishes criteria for the reuse and recycling of hazardous waste used or reused as raw materials. The law exceeds federal requirements by mandating source reduction planning and a much broader requirement for permitting facilities that treat hazardous waste. It also regulates several types of waste and waste management activities that are not covered by federal law.

California Health and Safety Code

The California Health and Safety Code (Health and Safety Code [HSC] § 25141)[12] defines hazardous waste as a waste or combination of waste that may:

> . . . because of its quantity, concentration, or physical, chemical, or infection characteristics:
>
> (1) Cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitation-reversible illness.
>
> (2) Pose a substantial present or potential hazard to human health or the environment, due to factors including but not limited to carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties, or persistence in the environment, when improperly treated, stored, transported, or disposed of or otherwise managed.

These regulations establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe management practices for hazardous wastes; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous waste that commonly would be disposed of in landfills.

[12] FindLaw. 2020. California Code, Health and Safety Code - HSC § 25141. Website: https://codes.findlaw.com/ca/health-and-safety-code/hsc-sect-25141.html. Accessed May 12, 2021.

Under both the RCRA and the HWCL, hazardous waste manifests must be retained by the generator for a minimum of 3 years. The generator must match copies of the manifests with copies of manifest receipts from the treatment, disposal, or recycling facility.

In accordance with Chapter 6.11 of the California Health and Safety Code (HSC § 25404, *et seq*.), local regulatory agencies enforce many federal and State regulatory programs through the CUPA program, including:

- Hazardous Materials Business Plans (HMBPs) (HSC § 25501, *et seq*.);
- Uniform Fire Code requirements (Uniform Fire Code [UFC] § 80.103, as adopted by the State Fire Marshal under HSC § 13143.9);
- Underground storage tanks (HSC § 25280, *et seq.*);
- Aboveground storage tanks (HSC § 25270.5(c)); and
- Hazardous waste generator requirements (HSC § 25100, *et seq.*).

Contra Costa Health Services Hazardous Materials Division is the CUPA for the County. As the CUPA, they enforce State statutes and regulations through the Hazardous Materials Unified Program Agency, which oversees aboveground petroleum tanks; generation of hazardous materials; storage and treatment; USTs; generation of medical waste; the accidental release prevention program; and Local Oversight Program. If a facility ever handles any individual hazardous material in an aggregate amount equal to or greater than 55 gallons (liquids), 500 pounds (solids), or 200 cubic feet (gases), an HMBP must be submitted. An HMBP must include:

- Details that include facility floor plans and identify the business conducted at the site.
- An inventory of hazardous materials handled or stored on the site.
- An emergency response plan.
- A training program in safety procedures and emergency response for new employees who may handle hazardous materials, with an annual refresher course in the same topics for those same employees.

California Code of Regulations, Title 8

Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations. These regulations concern the use of hazardous materials in the workplace, including requirements for employee safety training; availability of safety equipment; accident and illness prevention programs; hazardous substance exposure warnings; and preparation of emergency action and fire prevention plans.

Cal/OSHA also enforces hazard communication program regulations, including procedures for identifying and labeling hazardous substances, and requires that MSDS be available for employee information and training programs. Cal/OSHA standards are generally more stringent than federal regulations. Construction workers and operational employees at the project site would be subject to these requirements.

California Code of Regulations, Title 8, Section 1529 authorizes Cal/OSHA to implement the survey requirements of Code of Federal Regulations Title 29 relating to asbestos. These federal and State regulations require facilities to take all necessary precautions to protect employees and the public from exposure to asbestos. Workers who conduct asbestos abatement must be trained in accordance with federal and State OSHA requirements. The Bay Area Air Quality Management District (BAAQMD) oversees the removal of regulated ACMs (see "Asbestos Demolition, Renovation, and Manufacturing Rule" below).

California Code of Regulations Title 8, Section 1532.1 includes requirements to manage and control exposure to LBP. These regulations cover the demolition, removal, cleanup, transportation, storage, and disposal of lead-containing material. The regulations outline the permissible exposure limit, protective measures, monitoring, and compliance to ensure the safety of construction workers exposed to lead-based material. Loose and peeling LBP must be disposed of as a State and/or federal hazardous waste if the concentration of lead equals or exceeds applicable hazardous waste thresholds. Federal and State OSHA regulations require a supervisor who is certified in identifying existing and predictable lead hazards to oversee air monitoring and other protective measures during demolition activities in areas where LBP may be present. Special protective measures and notification of Cal/OSHA are required for highly hazardous construction tasks related to lead, such as manual demolition, abrasive blasting, welding, cutting, or torch burning of structures, where LBP is present.

California Code of Regulations Title 22, Division 4.5

California Code of Regulations Title 22, Division 4.5 contains the Environmental Health Standards for the Management of Hazardous Waste, which includes California waste identification and classification regulations. California Code of Regulations, Title 22, Chapter 11, Article 3, "Soluble Threshold Limits Concentrations/Total Threshold Limits Concentration Regulatory Limits," identifies the concentrations at which soil is determined to be a California hazardous waste. California's Universal Waste Rule (22 CCR § 66273) provides an alternative set of management standards in lieu of regulation as hazardous wastes for certain common hazardous wastes, as defined in California Code of Regulations, Title 22, Section 66261.9. Universal wastes include fluorescent lamps, mercury thermostats, and other mercury-containing equipment. Existing structures may contain fluorescent light ballasts that could contain mercury or lead. The Alternative Management Standards for Treated Wood Waste (22 CCR § 67386) were developed by the DTSC to allow for disposal of treated wood as a non-hazardous waste, to simplify and facilitate the safe and economic disposal of such waste. Chemically treated wood can contain elevated levels of hazardous chemicals (e.g., arsenic, chromium, copper, pentachlorophenol, or creosote) that equal or exceed applicable hazardous waste thresholds. The Alternative Management Standards provide for less stringent storage requirements and extended accumulation periods, allow shipments without a hazardous waste manifest and a hazardous waste hauler, and allow disposal at specific non-hazardous waste landfills.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act) is California's statutory authority for the protection of water quality. Under the Porter-Cologne Act, the State must adopt water quality policies, plans, and objectives that protect the State's waters for the use and

enjoyment of the people. Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The RWQCBs are required to formulate and adopt water quality control plans (also known as basin plans) for all areas of the region and establish water quality objectives in the plans. The Porter-Cologne Act sets forth the obligations of State Water Board and RWQCBs to adopt and periodically update water quality control plans that recognize and reflect the differences in existing water quality, the beneficial uses of the region's groundwater and surface water, and local water quality conditions and problems. It also authorizes the State Water Board and RWQCBs to issue and enforce waste discharge requirements and to implement programs for controlling pollution in State waters. Finally, the Porter-Cologne Act also authorizes the State Water Board and RWQCBs to oversee site investigation and cleanup for unauthorized releases of pollutants to soils and groundwater and in some cases to surface waters or sediments.

California Emergency Response Plan

California has developed an emergency response plan to coordinate emergency services provided by federal, State, and local governments and private agencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the California Governor's Office of Emergency Services, which coordinates the responses of other agencies. The Contra Costa County Office of the Sheriff's Emergency Services Division coordinates response to emergencies in unincorporated areas of the County. Emergency response team members respond and work with local fire and police agencies, emergency medical providers, the California Highway Patrol, California Department of Forestry and Fire Protection (CAL FIRE), the California Department of Fish and Wildlife (CDFW), and the California Department of Transportation (Caltrans).

California Department of Forestry and Fire Protection

CAL FIRE has mapped fire threat potential throughout California. CAL FIRE maps fire threat based on the availability of fuel and the likelihood of an area burning (based on topography, fire history, and climate). The threat levels include no fire threat, moderate, high, and very high fire threat. Further, the maps designate the County as the Local Responsibility Area (LRA) for the project site. Additionally, CAL FIRE produced a 2010 Strategic Fire Plan for California, which contains goals, objectives, and policies to prepare for and mitigate the effects of fire on California's natural and built environments. CAL FIRE's Office of the State Fire Marshal provides oversight of enforcement of the California Fire Code as well as overseeing hazardous liquid pipeline safety.

California Building Standards Code

The State of California provided a minimum standard for building design through the 2019 California Building Standards Code (CBC), which is located in Part 2 of Title 24 of the California Code of Regulations. The 2019 CBC is based on the 2018 International Building Code, but has been modified for California conditions. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. Commercial and residential buildings are plan-checked by local City and County building officials for compliance with the CBC. Typical fire safety requirements of the CBC include the installation of sprinklers in all new high-rise buildings and residential buildings; the establishment of fire resistance standards for fire doors, building material; and specific types of construction.

California Public Resources Code

The California Public Resources Code includes fire safety regulations that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction equipment that use an internal combustion engine; [13] specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire suppression equipment that must be provided on-site for various types of work in fire-prone areas.

These regulations include the following:

- Earthmoving and portable equipment with internal combustion engines shall be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (Public Resources Code [PRC] § 4442).
- Appropriate fire suppression equipment shall be maintained during the highest fire danger period—from April 1 to December 1 (PRC § 4428).
- On days when a burning permit is required, flammable materials shall be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor shall maintain the appropriate fire suppression equipment (PRC § 4427).
- On days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines shall not be used within 25 feet of any flammable materials (PRC § 4431).

Regional

BAAQMD Asbestos Demolition, Renovation, and Manufacturing Rule

The removal of building ACMs is subject to the limitations of BAAQMD Regulation 11, Rule 2, "Hazardous Materials; Asbestos Demolition, Renovation, and Manufacturing." This rule prohibits visible emissions to outside air from any operation involving the demolition of any structure containing asbestos, and sets out requirements for demolition of such structures, including a pre-demolition survey conducted by a certified professional. All friable (i.e., crushable by hand) or non-friable ACMs that may be damaged must be abated before demolition in accordance with applicable requirements. Friable ACMs must be disposed of as asbestos waste at an approved facility. Non-friable ACMs may be disposed of as non-hazardous waste at landfills that accept such wastes.

Association of Bay Area Governments Hazard Mitigation Plan

The Association of Bay Area Governments (ABAG) multi-jurisdictional Local Hazard Mitigation Plan for the San Francisco Bay Area was updated in 2010 in partnership with the Bay Conservation and Development Commission. Adapting to Rising Tides Program to support local governments in the regional plan for existing and future hazards of climate change. This detailed 5-year plan identifies potential natural and human-made hazards, assesses their potential risks, and includes mitigation methods to reduce risks. The potential hazards identified in the plan include earthquakes and

[13] A spark arrestor is a device that prohibits exhaust gases from an internal combustion engine from passing through the impeller blades where they could cause a spark. A carbon trap is commonly used to retain carbon particles from the exhaust.

liquefaction, wildfires, floods, drought, solar storms, dam or levee failure, disease outbreak, freezes, wind, heat, thunder and lightning storms, siltation, tornadoes, hazardous materials, slope failure and mudflows, and other hazards. Similarly, mitigation measures include hazard event planning, emergency preparedness coordination, education, facility upgrades, and monitoring actions.

Local

Contra Costa County Hazard Mitigation Plan

Contra Costa County and a partnership of local governments within the County have developed a Hazard Mitigation Plan (HMP) to reduce future losses resulting from disasters. Hazard mitigation is the use of long- and short-term strategies to reduce the loss of life, personal injury, and property damage that can result from a disaster. It involves planning efforts, policy changes, programs, capital projects, and other activities that can mitigate the impacts of hazards. The HMP contains the following goals aimed at reducing the vulnerability from natural hazards within the County in a cost-effective manner:

Goal 1 Save, or protect lives and reduce injury.

Goal 2 Increase resilience of infrastructure and critical facilities.

Goal 3 Avoid, minimize, or reduce damage to property.

Goal 4 Encourage the development and implementation of long-term, cost-effective, and environmentally sound mitigation projects.

Goal 5 Build and support capacity to enable local government and the public to prepare, respond, and recover from the impact of natural hazards.

Contra Costa County Emergency Operations Plan

The Contra Costa County Operational Area Emergency Operations Plan (EOP) addresses response to emergency incidents affecting the County. The Contra Costa Operational Area consists of the cities/towns, special districts, reclamation districts, municipal improvement districts and the unincorporated areas within the County. The EOP is based on the functions and principles of the California Standardized Emergency Management System, the National Incident Management System, and the Incident Command System. It identifies how the County emergency operational system fits into the overall California and national risk-based, all-hazard emergency response and recovery operations plans.

Contra Costa County General Plan

The General Plan establishes the following goals, policies, and implementation measures related to hazards and hazardous materials relevant to this analysis:

Hazardous Materials Uses

Goal 10-I To provide public protection from hazards associated with the use, transport, treatment, and disposal of hazardous substances.

Goal 10-N To provide for a continuing high level of public protection services and coordination of services in a disaster.

Policies

Policy 10-62 Storage of hazardous materials and wastes shall be strictly regulated.

Policy 10-68 When an emergency occurs in the transportation of hazardous materials, the County Office of Emergency Services shall be notified as soon as possible.

Policy 10-86 In order to ensure prompt public protection services, dwelling unit numbers shall be required to be easily seen from the street or road.

Fire Protection

Goal 7-AA To incorporate requirements for fire safe construction into the land use planning and approval process.

Goal 7-AD To provide special fire protection for high-risk land uses and structures.

Policies

Policy 7-64 New development shall pay its fair share of costs for new fire protection facilities and services.

Policy 7-66 Sprinkler systems may be required in new residential structures, where necessary to protect health, safety, and welfare.

Policy 7-81 All structures located in Hazardous Fire Areas, as defined in the Uniform Fire Code, shall be constructed with fire-resistant exterior materials, such as fire-safe roofing, and their surroundings are to be irrigated and landscaped with fire-resistant plants, consistent with drought resistance and water conservation policies.

Policy 10-89 Every high-rise building shall be designed and constructed to provide for the evacuation of occupants and/or for the creation of a safe environment in case of a substantial disaster, such as a severe earthquake or fire.

Implementation Measures

Implementation Measure 7-at

The Conservation and Development Department shall include fire agency code requirements requested by the districts as advisory notes to the applicant within proposed conditions of project approval when the Planning Agency is considering subdivisions, development plans, use permits and other entitlement requests.

Implementation Measure 7-au

Fire protection agencies shall be afforded the opportunity to review projects and submit conditions of approval for consideration to determine whether:

- There is an adequate water supply for fire fighting

- Road widths, road grades and turnaround radii are adequate for emergency equipment; and
- Structures are built to the standards of the Uniform Building Code, the Uniform Fire Code, other State regulations, and local ordinances regarding the use of fire-retardant materials and detection, warning, and extinguishment devices.

Public Facilities/Services Element

Policies

Policy 7-64 New development shall pay its fair share of costs for new fire protection facilities and services.

Policy 7-72 Special fire protection measures shall be required in high risk uses (e.g., mid-rise and high-rise buildings, and those developments in which hazardous materials are used and/or stored) as conditions of approval or else be available by the district prior to approval.

Policy 7-81 All structures located in Hazardous Fire Areas, as defined in the Uniform Fire Code, shall be constructed with fire-resistant exterior materials, such as fire safe roofing, and their surroundings are to be irrigated and landscaped with fire-resistant plants, consistent with drought resistance and water conservation policies.

Safety Element

Goal 10-I To provide public protection from hazards associated with the use, transport, treatment, and disposal of hazardous substances.

Goal 10-N To provide for a continuing high level of public protection services and coordination of services in a disaster.

Policies

Policy 10-62 Storage of hazardous materials and wastes shall be strictly regulated.

Policy 10-64 Industrial facilities shall be constructed and operated in accordance with up-to-date safety and environmental protection standards.

Policy 10-65 Industries which store, and process hazardous materials shall provide a buffer zone between the installation and the property boundaries sufficient to protect public safety. The adequacy of the buffer zone shall be determined by the County Planning Agency.

Policy 10-69 Industry should be encouraged to utilize underground pipelines, rail, and water transportation of hazardous materials to the greatest extent feasible to take advantage of the greater separation from the general public provided by these modes of transportation.

Contra Costa County Ordinance Code

Division 450, Hazardous Materials and Wastes, of the Contra Costa County Ordinance Code provides regulations regarding hazardous material response plans, inventories, underground storage, and risk management. In part, this Ordinance Code requires that any business that handles a specific quantity of hazardous materials establish a HMBP for emergency response to a release or threatened release of a hazardous material.

3.8.4 - Impacts and Mitigation Measures

Significance Criteria

According to the California Environmental Quality Act (CEQA) Guidelines Appendix G Environmental Checklist, to determine whether impacts related to hazards and hazardous materials have significant environmental effects, the following questions are analyzed and evaluated. Would the proposed project:

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?

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 it 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, would the project 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?

g) Expose people or structures, either directly or indirectly to a significant risk of loss, injury, or death involving wildland fires?

Approach to Analysis

This evaluation focuses on whether the proposed project would result in changes to the physical environment that would cause or exacerbate adverse effects related to the use, transportation, disposal, accidental release, or emission of hazardous materials. The evaluation also includes a determination of whether the proposed project would result in changes to the physical environment, or would impair or interfere with emergency response plans, or would expose people or structures to increased wildfire hazards or dangers from overhead power lines. For the evaluation of potential construction-related and operational impacts from existing hazardous materials in

project site soils, sediments, groundwater, surface water, and structures, the results of environmental sampling are compared to identified screening levels. The following analysis is based, in part, on information provided by the General Plan and the Phase I ESAs prepared for the proposed project.

Additional analyses regarding hazards and health risk related to emissions of toxic air contaminants (TACs) are addressed in Section 3.2, Air Quality. Flooding and inundation hazards, including those related to erosion and mudflow, are addressed in Section 3.9, Hydrology and Water Quality. Transportation-related safety hazards are addressed in Section 3.13, Transportation. Other geotechnical-related safety hazards, such as earthquakes, are addressed in Section 3.6, Geology and Soils. Finally, excessive noise exposure with respect to airport use or air traffic is addressed in Section 3.11, Noise.

Specific Thresholds of Significance

For purposes of this analysis, the following thresholds are used to evaluate the significance of hazards and hazardous materials impacts resulting from implementation of the proposed project.

- Routine transport, use, and/or disposal of hazardous materials.
- Regular transport of hazardous materials to/from the project site on an unsuitable road or use of highly volatile hazardous materials.
- Location within 0.25-mile of an existing or proposed school in conjunction with hazardous emissions or handle hazardous materials, waste, or substances.
- Listing on hazardous materials site list and distance of project site to listed hazardous material sites. These lists include the following:
  - The California Environmental Protection Agency (Cal/EPA)
  - California Facility Inventory Database (CA FID) UST and State Water Efficiency and Enhancement Program (SWEEP)
  - Hazardous Waste Tracking System (HAZNET)
  - DTSC EnviroStor and BAAQMD)
  - State Water Board GeoTracker regulated facilities databases for files related to possible RECs
- Location proximate to an airport and reduction of safety of people working or residing in the area.
- Impairing implementation of or interference with an adopted emergency response plan or emergency evacuation plan via blockage of an evacuation route or provision of only one access point for emergency vehicles.
- Placement of structures in a designated wildland fire urban interface zone or proximate to unmanaged open space area that is susceptible to wildfires.

Impact Evaluation

Routine Transport, Use, or Disposal of Hazardous Materials

Impact HAZ-1: The proposed project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Construction

During construction, both within the project site and within the areas proposed for the off-site improvements, the proposed project would be expected to involve the transport, use, and disposal of hazardous materials, such as diesel fuels, aerosols, and paints. The proposed project would be subject to the Hazardous Materials Transportation Act, California Public Resources Code, and other State and local regulations that would reduce and limit the associated risks. Any handling, transporting, use, or disposal would comply with applicable laws, policies, and programs set forth by various federal, State, and local agencies and regulations, including the EPA, RCRA, Caltrans, and HMP.

During project site preparation and construction, the proposed project would require excavation. Potential release of hazardous materials associated with excavation and construction is discussed below.

As described in the Phase I ESA for 506 to 540 Brookside Drive, RWQCB documentation indicated the presence of a 2,000-gallon gasoline UST at the Ninomiya Nursery (506 Brookside Drive). Cornerstone's magnetometer survey and exploratory test pit investigation did not encounter a UST. Should a UST be discovered during ground disturbing activities, construction workers could potentially be exposed to a significant hazard. This represents a potentially significant impact. Therefore, Mitigation Measure (MM) HAZ-1 would be implemented, which requires preparation of a Soil Management Plan and Health Safety Plan prior to site grading activities. The Soil Management Plan and Health Safety Plan would include protocols to be implemented if buried tanks are encountered during construction activities to ensure that the USTs are removed and disposed in accordance with local, State, and federal regulations. With implementation of MM HAZ-1, impacts related to identified or unidentified USTs would be less than significant.

Based on the findings of the Phase I ESA for 506 to 540 Brookside Drive and the Phase I ESA for 550 and 560 Brookside Drive, given the historical use of the project site for agricultural purposes, it is possible that site grading activities and utility trench excavation could encounter contaminated soils, soil vapor, and contaminated groundwater requiring special handling. Removal and disposal of contaminated soils, soil vapor, and contaminated groundwater could potentially create a significant hazard to construction workers. This represents a potentially significant impact. Therefore, MM HAZ-1 would be implemented, which would require the preparation of a Soil Management Plan and Health Safety Plan prior to site grading activities. With implementation of MM HAZ-1, impacts related to contaminated soils, soil vapor, and contaminated groundwater would be less than significant.

Operation

During project operations, hazardous materials may be handled on the project site. Because of the nature of the project, hazardous materials used on-site may vary but would likely be limited to small quantities of fertilizers, herbicides, pesticides, solvents, cleaning agents, and similar materials used for landscaping and maintenance activities. These types of materials are common for general landscaping and maintenance activities associated with warehouses and represent a low risk to people and the environment when used as intended. Further, compliance with applicable plans and regulations, including General Plan policies, would provide public protection from hazards associated with the use, transport, and disposal of hazardous substances. Therefore, operational impacts related to public hazard risk from hazardous materials transport, use, or disposal would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HAZ-1 Prepare Soil Management Plan and Health and Safety Plan

Prior to issuance of grading permits, the applicant shall retain a licensed professional to prepare and submit a Soil Management Plan and Health and Safety Plan for review and approval by Contra Costa Environmental Health. These plans shall include the following:

- Site control procedures to control the flow of personnel, vehicles, and materials in and out of the project site.
- Measures to minimize dust generation, stormwater runoff, and tracking soil off-site.
- If excavation de-watering is required, protocols to evaluate water quality and discharge/disposal alternative should be described.
- Protocols for conducting earthwork activities in areas where impacts soil, soil vapor, and/or groundwater are present or suspected. Worker training requirements, health and safety measures, and soil handling procedures shall be described.
- Protocols to be implemented if buried tanks, structures, wells, debris, or unidentified areas of impacted soils are encountered during construction activities.
- Protocols to evaluate the quality of soil suspected of being contaminated so that appropriate mitigation, disposal or reuse alternatives, if necessary, can be determined.
- Procedures to evaluate and document the quality of any soil imported to the project site. Soil containing chemicals exceeding residential (unrestricted use) screening levels or typical background concentrating of metals should not be accepted.
- Methods to monitor excavations for the potential presence of volatile chemical vapors.

Level of Significance After Mitigation

Less than significant impact.

Hazardous Materials Upset Risk

Impact HAZ-2:	**The proposed project could 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.**

Construction

Construction activity, both within the project site and within the areas proposed for the off-site improvements, would be expected to involve the transport, use, and disposal of hazardous materials, such as diesel fuels, aerosols, and paints. The use of these materials would be subject to the Hazardous Materials Transportation Act, California Public Resources Code, and other State and local regulations that would limit the use of hazardous materials and reduce the associated risks of exposure. Any handling, transporting, use, or disposal would comply with applicable laws, policies, and programs set forth by various federal, State, and local agencies and regulations, including the EPA, RCRA, Caltrans, the Hazardous Materials Transportation Act, and the Contra Costa County HMP. Therefore, construction impacts related to hazardous materials upset risk would be less than significant.

Operation

During operation, tenants may use potentially hazardous substances, including lubricants, hydraulic oils, and other substances associated with warehouse operations. Small quantities of hazardous materials would be used on-site during operation of the project, but not in sufficient quantities to create significant hazard in the unlikely event of upset or accident. These types of materials are common in such warehouse projects and represent a low risk to people and the environment when used as intended and would not be expected to result in the release of hazardous materials into the environment. The handling, transport, and disposal of such substances must comply with all local, State, and federal laws and regulations. As such, operational impacts related to hazardous materials upset risk would be less than significant.

Level of Significance

Less than significant impact.

Hazardous Emissions Proximate to a School

Impact HAZ-3:	**The proposed project could emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.**

Construction

The project site, including the areas proposed for off-site improvements along Fred Jackson Way and Brookside Drive, are located within 0.25 mile of an existing school, Verde Elementary School, which is located directly adjacent to the south of the project site.

The proposed project would include the installation of off-site traffic calming improvements in the local neighborhood south of Wildcat Creek as well as the installation of a traffic signal at the Fred

Jackson Way/Pittsburgh Avenue intersection. The new traffic signal would be located approximately 0.13 mile northwest of Verde Elementary School. The curb bulbouts at the intersection of Market Avenue and Giaramita Street would be located approximately 0.16 mile south of the school. The speed reduction chicane along Market Avenue between Seventh Street and the railroad tracks would be located approximately 0.22 mile from the school. All other potential off-site calming improvements would be located approximately 0.26 to 0.44 mile from the school, and would enhance the safety of pedestrians, cyclists, and/or motorists traveling through the area.

Construction activity, including the construction of the identified traffic calming improvements, would be expected to involve the transport, use, and disposal of hazardous materials, such as diesel fuels, aerosols, and paints. However, the duration of these actions would only be temporary and limited to the period of construction. In addition, the use of these materials would be subject to the Hazardous Materials Transportation Act, California Public Resources Code, and other State and local regulations that would limit the use of hazardous materials and reduce the associated risks of exposure. Therefore, although the proposed project would result in the hazardous emissions and handle hazardous materials associated with construction within 0.25-mile of a school, compliance with applicable laws and regulations would reduce impacts to a less than significant. Therefore, construction impacts related to hazardous emissions proximate to a school would be less than significant.

Operation

The project site is located within 0.25 mile of Verde Elementary School. Because of the nature of the project, hazardous materials used on-site may vary but would likely be limited to small quantities of fertilizers, herbicides, pesticides, solvents, cleaning agents, and similar materials used for landscaping and maintenance activities. These types of materials are common for general landscaping and maintenance activities associated with warehouses and represent a low risk to people and the environment when used as intended. In addition, the proposed project would be required to operate in compliance with existing laws and regulations pertaining to handling, storage, use, and transport of hazardous materials. Therefore, operational impacts related to hazardous emissions proximate to a school would be less than significant. See Section 3.2, Air Quality, for a discussion of air quality impacts related to vehicular emissions.

Level of Significance

Less than significant impact.

Government Code Section 65962.5 Sites

Impact HAZ-4:	**The proposed project would not 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.**

Construction and Operation

The project site is not on the DTSC Hazardous Waste and Substances Site List – Site Cleanup (Cortese List).[14]

A regulatory records review of the Cal/EPA, State Water Board, CA FID UST and SWEEPS, HAZNET, DTSC EnviroStor, BAAQMD, and GeoTracker regulated facilities databases for files related to possible RECs was conducted for the project site. The results are compiled in the Phase I ESAs included as Appendix F. Based on the findings of this assessment the project site was historically used for agricultural purposes. The soil quality evaluation determined the project site soils contain elevated concentrations of the organochlorine pesticide compound dieldrin, lead, and arsenic in the shallow soil. RWQCB documentation indicated the presence of a 2,000-gallon gasoline UST located on the project site at the former Ninomiya Nursery (506 Brookside Drive); however, Cornerstone did not encounter a UST during their site survey. In addition, five USTs were present at the Sugihara Nursery (550 Brookside Drive); the five USTs were removed in 1987 and the RWQCB closed the case in 2001.

As described under Impact HAZ-1, MM HAZ-1 would be implemented, which requires preparation of a Soil Management Plan and Health Safety Plan prior to site grading activities. The Soil Management Plan and Health Safety Plan would include protocols to be implemented if USTs are encountered during construction activities as well as procedures for the removal and disposal of contaminated soils, soil vapor, and contaminated groundwater. With implementation of MM HAZ-1, impacts related to contaminated soils, soil vapor, contaminated groundwater, and identified or unidentified USTs, would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement MM HAZ-1.

Level of Significance After Mitigation

Less than significant impact.

Proximity to Public Airport Safety Hazard

Impact HAZ-5:	**The proposed project would not be 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, and result in a safety hazard or excessive noise for people residing or working the project area.**

Construction

Impacts related to exposure of people to safety hazards or excessive noise in proximity to an airport are limited to operational impacts. No respective construction impacts would occur.

[14] Department of Toxic Substances Control (DTSC). 2021. DTSC Hazardous Waste and Substances Site List – Site Cleanup (Cortese List), Website: https://dtsc.ca.gov/dtscs-cortese-list/. Accessed June 13, 2021.

Operation

The project site would not be located within an airport land use plan or within 2 miles of a public airport. The closest public airport, Gnoss Field Airport, is located approximately 15 miles northwest of the project site. Buchanan Field is located approximately 16.5 miles east of the project site. Oakland International Airport is located approximately 18 miles to the southeast. At these distances, the proposed project is not located within an airport land use plan or within 2 miles of a public airport. Therefore, no impacts related to exposure of people to safety hazards or excessive noise in proximity to an airport would occur.

Level of Significance

No impact.

Level of Significance

No impact.

Emergency Response and Evacuation

Impact HAZ-6:	**The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.**

Construction and Operation

During construction, it is expected that construction equipment and vehicles would be accessing and leaving the project site, which in turn could potentially impede evacuation or emergency vehicle access. The off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements could also potentially impede evacuation or emergency vehicle access. During operation, employee vehicles and delivery trucks would need to access and leave the project site, which in turn could potentially impede evacuation or emergency vehicle access.

The County EOP outlines general procedures in response to emergency crises, such as evacuations. The County EOP includes information regarding evacuations and shelter-in-place orders as well as the entity that has the authority to issue these orders. The main arterial roads into and out of the project vicinity are Richmond Parkway and Brookside Drive, which would serve as the main emergency response and evacuation routes into and out of the project vicinity. In addition, there are secondary roads that could be used for emergency response and evacuation, such as Fred Jackson Way, Pittsburgh Avenue, and Parr Boulevard. With adherence to the procedures of the County EOP, the proposed project would not conflict with the County EOP or General Plan safety policies. Therefore, construction and operational impacts related to emergency response and evacuation would be less than significant.

Level of Significance

Less than significant impact.

Wildland Fires

Impact HAZ-7: The proposed project would not expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires.

Construction

Impacts related to wildland fire hazard risks are limited to operational impacts. No respective construction impacts would occur.

Operation

As indicated by the General Plan, fire hazards present a considerable problem throughout the County, primarily within undeveloped areas with natural vegetation and steep slopes. The project site is located within the western portion of the County and is relatively flat in elevation (approximately 12 to 20 feet above mean sea level). The project site is mostly surrounded by urbanized uses on areas relatively flat in elevation (approximately 10 to 25 feet above mean sea level) lacking in woodlands or vegetation that could provide fuel load for wildfire, or steep slopes that could cause fire to spread more rapidly. The project site is surrounded by other features that provide fuel breaks in the event of a fire, such as Fred Jackson Way, Brookside Drive, Goodrick Avenue, and Wildcat Creek. In addition, San Pablo Bay is approximately 0.75 mile north (and approximately 1.5 mile west) of the project site, which provides the project site with a more temperate climate.

According to CAL FIRE, the project site is not located in a State Responsibility Area or an LRA Fire Hazard Severity Zone.[15] The nearest Fire Hazard Severity Zone is located approximately 2.25 miles southeast of the project site and is designated as a Very High Fire Hazard Severity Zone.[16] The BAAQMD monitors air quality and wind speed at a number of stations and the closest station to the project site is located at Point San Pablo in the City of Richmond, approximately 3.3 miles to the west. The average wind speed at Point San Pablo varies from month to month and ranged from 6-14 miles per hour in 2018.[17] Given that the project site is not located on or near steep terrain surrounded by natural vegetation, is mostly surrounded by urban uses, and does not consistently experience high winds, the project site would not be prone to wildfires.

The proposed removal of existing vegetation from the project site would reduce the site's existing fuel load. Furthermore, compliance with applicable State and local plans and regulations would decrease the risk of impacts related to wildland fire hazards. Specifically, General Plan policies incorporate requirements for fire safe construction into the land use planning and approval process and ensure special fire protection for high-risk land uses and structures. The County also implements an EOP, which addresses response to emergency incidents affecting the County. Furthermore, as indicated in Section 3.12, Public Services, the project would be adequately served in terms of fire protection services by the CCCFPD. Finally, the proposed warehouses would be required to comply

[15] California Department of Forestry and Fire Protection (CAL FIRE). Fire Hazard Severity Zone Viewer. Website: http://egis.fire.ca.gov/FHSZ/. Accessed March 20, 2021.

[16] Ibid.

[17] Bay Area Air Quality Management District (BAAQMD). 2019. Air District Air Quality Data. Website: http://www.baaqmd.gov/about-air-quality/current-air-quality/air-monitoring-data/#/air-quality-home. Accessed March 21, 2021.

with the California Fire Code regarding emergency access and types of building materials. Therefore, impacts related to wildland fire risk would be less than significant.

Level of Significance

Less than significant impact.

3.8.5 - Cumulative Impacts

The geographic scope of the cumulative analysis related to hazards and hazardous materials is the project vicinity or roughly the western portion of the County. The analysis also considers the foreseeable development projects listed in Table 3-1 (See Chapter 3, Environmental Impact Analysis) in unincorporated Contra Costa County and the surrounding cities, in addition to the proposed project.

Hazardous Materials Exposure Risk

In general, exposure to hazardous materials may cause localized adverse effects. A combination of federal, State, and local regulations limit or minimize the potential for exposure to hazardous materials. Development listed in Table 3-1 primarily consists of industrial, commercial, and residential development. The types and sizes of development anticipated in the project area would not involve large quantities of hazardous materials or activities that transport or handle hazardous materials. Cumulative projects would be subject to the Hazardous Materials Transportation Act, California Public Resources Code, and other State and local regulations that would reduce and limit the associated risks. Any handling, transporting, use, or disposal would comply with applicable laws, policies, and programs set forth by various federal, State, and local agencies and regulations, including the EPA, RCRA, Caltrans, and HMP.

However, cumulative projects listed in Table 3-1 may encounter contaminated soils, soil vapor, contaminated groundwater, and identified or unidentified USTs. To address potential release of hazardous materials, the County, City of Richmond, and City of San Pablo would require the preparation of Phase I ESAs prior to construction and impose mitigation related to the removal and proper disposal of hazardous materials to minimize hazardous materials exposure risk. Additionally, regional, State, and federal regulations would apply to countywide development, and, for these reasons cumulative projects, would result in a less than significant cumulative impact related to exposure to hazardous materials.

Moreover, the proposed project's incremental contribution would not be significant. To reduce the proposed project's impacts to below a level of significance and ensure a less than significant contribution to cumulative impacts, the proposed project would implement MM HAZ-1 and comply with all applicable policies related to transport, use, and disposal of hazardous materials, as discussed above.

Hazards and Emergency Response

The main arterial streets that would act as the most likely evacuation routes out of the western portion of the County include Richmond Parkway, San Pablo Avenue, Interstate 80 (I-80), I-580, and State Route 4 (SR-4). Planned uses as proposed by the cumulative projects are contemplated in the General Plan, would result in predominantly in-fill development, and would not significantly increase

need for emergency services, including those related to wildfires. Furthermore, all construction would adhere to the regulations included in the California Fire Code that are designed to minimize the potential for the release of hazardous materials or uncontrolled fires. Once development is proposed, the County would assess the needs for fire protection services and inform efforts to improve or expand needed facilities.

As listed in Table 3-1, cumulative development in the County primarily consists of industrial, commercial, and residential development. The types of development would increase the population include residential uses. All development would, however, comply with emergency access requirements as projects condition. Furthermore, cumulative development in County, including the proposed project, would not result in permanent road closures, nor impede established emergency access routes, nor interfere with emergency response requirements. As such, there would be a less than significant cumulative impact associated with hazards and emergency response. Moreover, as discussed above, the proposed project would fully comply with all applicable regulations and, therefore, its contribution would not be cumulatively considerable.

Level of Cumulative Significance

Less than significant impact.

3.9 - Hydrology and Water Quality

3.9.1 - 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 information contained in the Contra Costa County General Plan (General Plan) and the site-specific Preliminary Hydrology and Hydraulics Report and Preliminary Stormwater Control Plan (included in Appendix G). During the Notice of Preparation (NOP) comment period, the following comments were received related to the proposed project regarding Hydrology and Water Quality:

- Contra Costa County Flood Control & Water Conservation District (FC District) asks that the Draft Environmental Impact Report (Draft EIR) state the project site is located within Drainage Area 19A and that it should discuss mitigation for the proposed development.
- The FC District asks that the Draft EIR identify existing downstream water resources and drainage facilities adjacent to the project site.
- The FC District asks that the Draft EIR quantify runoff and discuss potential impacts to downstream capacity.
- Contra Costa Mosquito and Vector Control District notes California Health and Safety Code Sections 2060-2067 on property owner's responsibility to address potential vectors.

3.9.2 - Environmental Setting

Surface Hydrology

San Pablo Creek and Wildcat Creek Watersheds

The Contra Costa Clean Water Program (CCCWP) designates watersheds in the County. According to the CCCWP, the project site is located within two watersheds: the San Pablo Creek Watershed and the Wildcat Creek Watershed. The northern portion of the project site is located within the San Pablo Creek Watershed, which encompass 27,640 acres in western Contra Costa County.[1] Several tributaries within the San Pablo Creek Watershed flow into San Pablo and Briones Reservoirs, and all major tributaries eventually drain into San Pablo Bay and San Francisco Bay, and ultimately into the Pacific Ocean. The southern portion of the project site is located within the Wildcat Creek Watershed, which encompasses 6,848 acres.[2] The Wildcat Creek Watershed consists of two main sections: the upper watershed contained in Wildcat Canyon, and the lower watershed, which enters the alluvial plain at Alvarado Park and continues to Wildcat Marsh and San Francisco Bay.

[1] Contra Costa Clean Water Program (CCCWP). San Pablo Creek Watershed. 2021 Website: https://www.cccleanwater.org/userfiles/kcfinder/files/San-Pablo-Creek-Watershed-via-Paint.jpg. Accessed March 19, 2021.
[2] Contra Costa Clean Water Program (CCCWP). San Pablo Creek Watershed. 2021 Website: https://www.cccleanwater.org/userfiles/kcfinder/files/Wildcat-Creek-Watershed-Cropped-25.jpg. Accessed May 27, 2021.

Project Site

As detailed in Section 3.3, Biological Resources, the project site does not contain any wetland, streams, or other water features. As shown in Exhibit 3.9-1, the closest water body to the project site is Wildcat Creek, located approximately 400 feet to the south. San Pablo Creek is located approximately 750 feet north of the project site. The project site is at elevations ranging from approximately 12 to 20 feet above mean sea level, with a gentle downward slope to the northwest, toward San Pablo Bay.[3]

Surface Water Quality

Contra Costa County

The San Francisco Bay Regional Water Quality Control Board (RWQCB) (Region 2) and the County monitor surface water quality in the County. The Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin outlines the beneficial water uses that the California State Water Resources Control Board (State Water Board) will protect, and the water quality objectives and strategies for achieving these objectives.

Project Site

The project site would be subject to regulations imposed by the San Francisco Bay RWQCB and the County.

Groundwater Basin Hydrology

Contra Costa County Area

The primary groundwater basin in western Contra Costa County is the East Bay Plain Subbasin, a subbasin of the Santa Clara Valley Groundwater Basin. The East Bay Plain Subbasin extends approximately along the East Bay foothills to the San Francisco Bay from Richmond to Hayward. The East Bay Plain Subbasin includes a confined, deep aquifer that is present in the southern half of the subbasin. That deep aquifer has historically served as a water source to meet the needs of the region in its early days (the 1800s thru to the 1920s). The deep aquifer thins out to the north and becomes an insignificant source of groundwater as it approaches an area just to the south of downtown Oakland. The confined, deep aquifer is not found in the remaining parts of the East Bay Plain Subbasin, although areas to the far north in the East Bay Plain Subbasin (within the city limits of the Cities of Richmond and San Pablo) have aquifer(s) that are capable of producing water in quantities sufficient to serve the irrigation needs of schools, parks, and a local golf course. The remaining portion of the East Bay Plain Subbasin has shallow aquifers that cannot serve as a significant source of groundwater.[4]

Project Site

The project site does not contain active groundwater wells used for potable water supplies and is located within the East Bay Plain Subbasin, a subbasin of the Santa Clara Valley Groundwater Basin.

[3] Cornerstone Earth Group. 2018. Phase I Environmental Site Assessment Update. August.

[4] East Bay Municipal Utility District (EBMUD). Urban Water Management Plan 2015. Website: https://www.ebmud.com/water/about-your-water/water-supply/urban-water-management-plan/. Accessed March 19, 2021.

The Phase I Environmental Site Assessment (Phase I ESA) for 550 and 560 Brookside Drive identified an agricultural water well under artesian[5] conditions on the project site.[6]

Groundwater Water Quality

Contra Costa County Area

The San Francisco Bay RWQCB identified major areas of groundwater pollution in the East Bay Plain Subbasin. The main sources of pollution were due to the release of fuels and solvents within the upper 50 feet of the subsurface.[7]

Project Site

The project site is located within the East Bay Plain Subbasin, a subbasin of the Santa Clara Valley Groundwater Basin, and is under the jurisdiction of the San Francisco Bay RWQCB.

Stormwater Runoff

Contra Costa County

The San Francisco Bay RWQCB administers the National Pollution Discharge Elimination System (NPDES) stormwater permitting program and regulates stormwater in the San Francisco Bay region. The County is a permittee under the Phase II NPDES Municipal Stormwater Permit, and implements the County-specific components of the CCCWP.

The FC District guides regional drainage plans throughout the County. All stormwater drains into San Francisco Bay via stormwater drainage systems and regional creeks and streams. The County Watershed Program is responsible for ensuring that the County complies with its municipal stormwater NPDES permits.[8] Drainage facilities within unincorporated Contra Costa County are maintained by County Public Works, the FC District, or private property owners.[9]

The FC District owns property throughout the County for the purpose of constructing and maintaining regional flood control basins, channels, and creeks.[10]

---

[5] Groundwater that flows to the land surface because pressure in the rocks underground force it to the surface.

[6] Cornerstone Earth Group, Inc. 2018. Phase I Environmental Site Assessment, 550 and 560 Brookside Drive. March 22.

[7] California Department of Water Resources San Francisco Bay Hydrologic Region. California's Groundwater Bulletin 118: Santa Clara Valley Groundwater Basin, East Bay Plain Subbasin. 2004. Website: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/2_009_02_SantaClaraSubbasin.pdf. Accessed March 19, 2021.

[8] Contra Costa County. 2021. Contra Costa County Watershed Program. Website: https://www.contracosta.ca.gov/344/County-Watershed-Program. Accessed April 15, 2021.

[9] Contra Costa County Flood Control & Water Conservation District (FC District). 2020. Frequently Asked Questions For Drainage, Watershed, and Water Quality. Website: https://www.contracosta.ca.gov/DocumentCenter/View/1871/Drainage-Watershed-and-Water-Quality-FAQs-PDF?bidId=#:~:text=GENERAL%20DRAINAGE%20QUESTIONS-,1)%20Who%20maintains%20the%20creek%2C%20channel%2C%20or%20drainage%20pipe,or%20easements%20accepted%20for%20maintenance. Accessed April 21. 2020.

[10] Contra Costa County. 2021. Welcome to the Flood Control District. Website: https://www.contracosta.ca.gov/5586/Flood-Control-District. Accessed March 19, 2021.

Project Site

As shown in Exhibit 3.9-1, the project site is located within Drainage Area 19A, as designated by the FC District.[11] The northern 17.6 acres of the project site drain north to San Pablo Creek, while the southern 13.4 acres of the project site drain south to Wildcat Creek.

Stormwater runoff on the northern portion of the project site flows overland from the southeast to the northwest, where it is collected by a series of open channel ditches and pipe culverts that flow west along Brookside Drive and ultimately into an existing 48-inch storm drain at the corner of Brookside Drive and Fred Jackson Way. The 48-inch storm drain conveys the stormwater across Fred Jackson Way and then to the north and across Brookside Drive to a discharge point at San Pablo Creek. This system is designated as Line B by the FC District. The existing stormwater runoff rate for the northern portion of the project site draining to Line B is approximately 34.5 cubic feet per second (cfs).

Stormwater runoff on the southern portion of the project site flows overland from the east to the west where it is collected along the eastern side of Fred Jackson Way. The stormwater is then conveyed south into an existing 36-inch storm drain along Fred Jackson Way that discharges into Wildcat Creek. This system is designated as Line A by the FC District. The existing stormwater runoff rate for the southern portion of the project site draining to Line A is approximately 23 cfs.

Flooding and Inundation

Contra Costa County

100-year Flood

Flood hazard areas—those areas susceptible to flooding—are mapped by the Federal Emergency Management Agency (FEMA). FEMA maps do not consider future conditions. To protect such areas from flood hazards, FEMA administers the National Flood Insurance Program (NFIP). The NFIP is a federal program created to avert future flood losses through building and zoning ordinances and to provide federally backed flood insurance protection for property owners. The County is a participant in the NFIP.

To support the NFIP, FEMA publishes Flood Insurance Rate Maps (FIRMs) for participating communities for flood insurance and floodplain management purposes. The FIRMs delineate different Special Flood Hazard Area zones. Special flood hazard areas associated with the 1 percent probability of annual exceedance are zones that begin with the letter “A” (e.g., Zone A, Zone AE, and Zone AO).

Mudflow

Mudflows typically occur on steep slopes where vegetation is not sufficient to prevent rapid erosion. In the County, mudflows could occur on steep slopes near Mount Diablo, Briones Regional Park, and adjacent to waterway banks.

[11] Contra Costa County Flood Control & Water Conservation District (FC District). 2015. Zones and Drainage Areas. https://www.contracosta.ca.gov/DocumentCenter/View/61290/County-Zones-and-Drainage-Areas-PDF?bidId=. Accessed May 27, 2021.

Project Site

100-year Flood

According to FEMA FIRM 06013C0228G, effective September 30, 2015, the project site is designated Zone X—0.2 percent annual chance flood hazard.[12]

Mudflow

The project site is relatively flat and does not contain steep, unvegetated slopes susceptible to mudflows.

3.9.3 - Regulatory Framework

Federal

Clean Water Act

The Clean Water Act (CWA) (33 United States Code [USC] § 1251, *et seq*.) is the major federal legislation governing the water quality aspects of construction and operation of the proposed project or variant. The CWA established the basic structure for regulating discharges of pollutants into waters of the United States (not including groundwater) and waters of the State. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the nation's waters." The CWA establishes the basic structure for regulating the discharge of pollutants into waters of the United States.

The CWA authorizes the United States Environmental Protection Agency (EPA) to implement pollution control programs. Under the CWA, it is unlawful for any person to discharge any pollutant from a point source into navigable waters, unless an NPDES permit is obtained. In addition, the CWA requires each state to adopt water quality standards for receiving water bodies and to have those standards approved by the EPA. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality objectives necessary to support those uses.

Responsibility for protecting water quality in California resides with the State Water Board and nine RWQCBs. The State Water Board establishes Statewide policies and regulations for the implementation of water quality control programs mandated by federal and State water quality statutes and regulations. The RWQCBs develop and implement water quality control plans (basin plans) that consider regional beneficial uses, water quality characteristics, and water quality problems. Water quality standards applicable to the proposed project are listed in the San Francisco Bay RWQCB Basin Plan.

Section 303—Water Quality Standards and Total Maximum Daily Loads

Section 303(c)(2)(b) of the CWA requires states to adopt water quality standards for all surface waters of the United States based on the water body's designated beneficial use. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are

[12] Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) FIRMette. 2020. Website: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd. Accessed March 19, 2021.

typically numeric, although narrative criteria based on biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards.

CWA Section 303(d) requires states and authorized Native American tribes to develop a list of water quality–impaired segments of waterways. The list includes waters that do not meet water quality standards necessary to support a waterway's beneficial uses even after the minimum required levels of pollution control technology have been installed. Listed water bodies are to be priority ranked for development of a Total Maximum Daily Load (TMDL). A TMDL is a calculation of the TMDL (amount) of a pollutant that a water body can receive on a daily basis and still safely meet water quality standards. The TMDLs include waste load allocations for urban stormwater runoff as well as municipal and industrial wastewater discharges, with allocations apportioned for individual Multiple Separate Storm Sewer Systems (MS4s) and wastewater treatment plants, including those in Contra Costa County. For stormwater, load reductions would be required to meet the TMDL waste load allocations within the 20 years required by the TMDLs.

The State Water Board, RWQCBs, and EPA are responsible for establishing TMDL waste load allocations and incorporating approved TMDLs into water quality control plans, NPDES permits, and Waste Discharge Requirements (WDRs) in accordance with a specified schedule for completion. The San Francisco Bay RWQCB develops TMDLs for the Contra Costa County area.

Section 401—Water Quality Certification

Section 401 of the CWA requires compliance with State water quality standards for actions within State waters. Under CWA Section 401, an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the United States) must first obtain a certificate from the appropriate agency stating that the fill is consistent with the State's water quality standards and criteria. In California, the State Water Board delegates authority to either grant water quality certification or waive the requirements to the nine RWQCBs. The San Francisco Bay RWQCB is responsible for the project site.

Section 402—National Pollution Discharge Elimination System Permits

The RWQCBs administer the NPDES stormwater permitting program, under Section 402(d) of the federal CWA, on behalf of EPA. The objective of the NPDES program is to control and reduce levels of pollutants in water bodies from discharges of municipal and industrial wastewater and stormwater runoff. CWA Section 402(d) establishes a framework for regulating nonpoint-source stormwater discharges (33 USC § 1251). Under the CWA, discharges of pollutants to receiving water are prohibited unless the discharge complies with an NPDES permit. The NPDES permit specifies discharge prohibitions, effluent limitations, and other provisions, such as monitoring deemed necessary to protect water quality based on criteria specified in the National Toxics Rule (NTR), the California Toxics Rule (CTR), and the Basin Plan.

Discharge prohibitions and limitations in an NPDES permit for wastewater treatment plants are designed to maintain public health and safety, protect receiving water resources, and safeguard the water's designated beneficial uses. Discharge limitations typically define allowable effluent quantities for flow, biochemical oxygen demand, total suspended matter, residual chlorine,

settleable matter, total coliform, oil and grease, pH, and toxic pollutants. Limitations also typically encompass narrative requirements regarding mineralization and toxicity to aquatic life. Under the NPDES permits issued to the City/County to operate the treatment plants, the City/County is required to implement a pretreatment program. This program must comply with the regulations incorporated in the CWA and the General Pretreatment Regulations (Code of Federal Regulations [CFR] Title 40, Part 403 [40 CFR 403]).

Section 404—Permitting Discharges of Dredge or Fill Material

Section 404 of the CWA regulates temporary and permanent fill and disturbance of wetlands and waters of the United States. Under Section 404, the discharge (temporary or permanent) of dredged or fill material into waters of the United States, including wetlands, typically must be authorized by the United States Army Corps of Engineers (USACE) through either the Nationwide Permit (general categories of discharges with minimal effects) or the Individual Permit.

River and Harbors Act Section 10

Section 10 of the Rivers and Harbors Act of 1899 requires that regulated activities conducted below the ordinary high-water elevation of navigable waters of the United States be approved and permitted by the USACE. Regulated activities include the placement or removal of structures, work involving dredging, disposal of dredged material, filling, excavation, or any other disturbance of soils/sediments or modification of a navigable waterway. Navigable waters of the United States are those waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high-water mark and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce. Section 10 also regulates tributaries and backwater areas that are associated with navigable waters of the United States and are located below the ordinary high-water elevation of the adjacent navigable waterway.

A project proponent can apply for a permit/letter of permission for work regulated under Section 404 (CWA) and Section 10 (Rivers and Harbors Act) by completing and submitting one application form. An application for a USACE permit will serve as an application for both Section 404 and Section 10 permits.

Federal Antidegradation Policy

The federal antidegradation policy is designed to protect existing water uses, water quality, and national water resources. The federal policy directs states to adopt a Statewide policy that includes the following primary provisions:

- Existing instream uses and the water quality necessary to protect those uses shall be maintained and protected.
- Where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the State finds that allowing lower water quality is necessary for important local economic or social development.
- Where high-quality waters constitute an outstanding national resource, such as waters of national and State parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

National Toxics Rule and California Toxics Rule

In 1992, the EPA promulgated the NTR under the CWA to establish numeric criteria for priority toxic pollutants for 14 states to bring all states into compliance with the requirements of CWA Section 303(c)(2)(B). The NTR established water quality standards for 42 pollutants not covered under California's Statewide water quality regulations at that time. Because of the court-ordered revocation of California's Statewide basin plans in September 1994, the EPA initiated efforts to promulgate additional federal water quality standards for California. In May 2000, the EPA issued the CTR, which includes all the priority pollutants for which the EPA has issued numeric criteria not included in the NTR.

Executive Order 11988

Executive Order 11988, "Floodplain Management," directs all federal agencies to avoid, to the extent possible, long- and short-term adverse impacts of occupancy and modification of floodplains, and to avoid supporting development in a floodplain either directly or indirectly wherever there is a practical alternative. Compliance requirements are outlined in 23 Code of Federal Regulations 650, Subpart A, "Location and Hydraulic Design of Encroachment on Floodplains."

If a project involves significant encroachment into the floodplain, the final environmental document must include:

- The reasons why the proposed action must be located in the floodplain;
- Alternatives considered and the reasons they were not practical; and
- A statement indicating whether the action conforms to applicable State or local floodplain protection standards.

National Toxics Rule and California Toxics Rule

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 were enacted to reduce the need for flood protection structures and limit disaster relief costs by restricting development in floodplains. FEMA, established in 1979, is responsible for predicting hazards from flooding events and forecasting the level of inundation under various conditions. As part of its duty to develop standards for delineating fluvial and coastal floodplains, FEMA provides information on FIRMs about the potential for flood hazards and inundation and, where appropriate, designates regions as Special Flood Hazard Areas (SFHAs). SFHAs are defined as areas that have a 1 percent chance of flooding in a given year.

FEMA also administers the NFIP, a federal program that enables property owners in participating communities to purchase insurance as protection against flood losses in exchange for State and community floodplain management regulations that reduce future flood damages.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act) is California's statutory authority for the protection of water quality. Under the Porter-Cologne Act, the State must adopt water quality policies, plans, and objectives that protect the State's waters for the use and

enjoyment of the people. Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The RWQCBs are required to formulate and adopt basin plans for all areas in the region and establish water quality objectives in the plans. The Porter-Cologne Act sets forth the obligations of the State Water Board and RWQCBs to adopt and periodically update basin plans. The San Francisco Bay RWQCB is responsible for the project site.

Basin plans are the regional water quality control plans required by both the CWA and the Porter-Cologne Act that establish beneficial uses, water quality objectives, and implementation programs for each of the nine regions in California. The Act also requires waste dischargers to notify the RWQCBs of their activities by filing reports of waste discharge and authorizes the State Water Board and RWQCBs to issue and enforce WDRs, NPDES permits, CWA Section 401 water quality certifications, or other approvals. The RWQCBs are also authorized to issue waivers to reports of waste discharge and WDRs for broad categories of "low threat" discharge activities that have minimal potential to cause adverse water quality effects when implemented according to prescribed terms and conditions.

California Code of Regulations (Wetlands and Waters Definition)

The State Water Board indicates that no single accepted definition of wetlands exists at the State level, and that the RWQCBs may have different requirements and levels of analysis regarding the issuance of water quality certifications. Generally, an area is a wetland if, under normal circumstances:

(1) the area 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.

Under California State law, waters of the State mean "any surface water or groundwater, including saline waters, within the boundaries of the state." As such, water quality laws apply to both surface water and groundwater. After the U.S. Supreme Court decision in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (53 USC 159), the Office of Chief Counsel of the State Water Board released a legal memorandum confirming the State's jurisdiction over isolated wetlands. The memorandum stated that under the Porter-Cologne Act, discharges to wetlands and other waters of the State are subject to State regulation, and this includes isolated wetlands. In general, the State Water Board regulates discharges to isolated waters in much the same way as it does for waters of the United States, using the Porter-Cologne Act rather than CWA authority.

National Pollutant Discharge Elimination System

The NPDES permits all involve similar processes, which include submitting notices of intent for discharging to water in areas under the San Francisco Bay RWQCB's jurisdiction and implementing Best Management Practices (BMPs) to minimize those discharges. The San Francisco Bay RWQCB may also issue site-specific WDRs, or waivers to WDRs, for certain waste discharges to land or waters of the State.

Construction Activity

The State Water Board stormwater general permit for construction activity (Order 2009-009-DWQ, as amended by Order Nos. 2010-0014-DWQ and 2012-0006-DWQ) applies to all construction activities that would disturb 1 acre of land or more. Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters.

Through the NPDES and WDR processes, the State Water Board seeks to ensure that the conditions at a project site during and after construction do not cause or contribute to direct or indirect impacts on water quality (i.e., pollution and/or hydromodification) upstream and downstream. To comply with the requirements of the Construction General Permit, the project applicant must file a notice of intent with the State Water Board to obtain coverage under the permit; prepare a Storm Water Pollution Prevention Plan (SWPPP); and implement inspection, monitoring, and reporting requirements appropriate to the proposed project's risk level as specified in the SWPPP. The SWPPP includes a site map, describes construction activities and potential pollutants, and identifies BMPs that will be employed to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources, such as petroleum products, solvents, paints, and cement. The permit also requires the discharger to consider using post-construction permanent BMPs that will remain in service to protect water quality throughout the life of the project. All NPDES permits also have inspection, monitoring, and reporting requirements.

Project sites served by the combined sewer system are not required to obtain coverage under the NPDES Construction General Permit.

Industrial General Stormwater Permit

The Statewide stormwater NPDES permit for general industrial activity (Order 2014-0057-DWQ, superseding Order 97-03-DWQ) regulates discharges associated with 10 broad categories of industrial activities, such as operation of wastewater treatment works, and with recycling facilities. The industrial general permit requires the implementation of Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology to achieve performance standards. The permit also requires development of a SWPPP that identifies the site-specific sources of pollutants and describes the measures at the facility applied to reduce stormwater pollution. A monitoring plan is also required.

Stormwater

In November 1990, the EPA published regulations establishing NPDES permit requirements for municipal and industrial stormwater discharges. Phase I of the permitting program applied to municipal discharges of stormwater in urban areas where the population exceeded 100,000 persons. Phase II of the NPDES stormwater permit regulations, which became effective in March 2003, required that NPDES permits be issued for construction activity for projects disturbing 1–5 acres. Phase II of the municipal permit system (known as the NPDES General Permit for Small MS4s, Order No. 2003-0005-DWQ as amended by 2013-0001-DWQ) required small municipalities of fewer than 100,000 persons to develop stormwater management programs. This permit authorizes discharges of stormwater and some categories of non-stormwater that are not "significant contributors of pollutants."

California Toxics Rule and State Implementation Policy

The CTR, presented in 2000 in response to requirements of EPA's NTR, establishes numeric water quality criteria for approximately 130 priority pollutant trace metals and organic compounds. The CTR criteria are regulatory criteria adopted for inland surface waters, enclosed bays, and estuaries in California that are on the CWA Section 303(c) list for contaminants. The CTR includes criteria for the protection of aquatic life and human health. Human health criteria (water- and organism-based) apply to all waters with a municipal and domestic water supply beneficial use designation as indicated in the basin plans. The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, also known as the State Implementation Policy, was adopted by the State Water Board in 2000. It establishes provisions for translating CTR criteria, NTR criteria, and basin plan water quality objectives for toxic pollutants into:

- NPDES permit effluent limits,
- Effluent compliance determinations,
- Monitoring for 2,3,7,8-tcdd (dioxin) and its toxic equivalents,
- Chronic (long-term) toxicity control provisions,
- Site-specific water quality objectives, and
- Granting of effluent compliance exceptions.

The goal of the State Implementation Plan is to establish a standardized approach for permitting discharges of toxic effluent to inland surface waters, enclosed bays, and estuaries throughout the State.

California Code of Regulations (Vector Control)

In California, local vector control agencies have the authority to conduct surveillance for vectors, prevent the occurrence of vectors, and abate production of vectors (California Codes, Health and Safety Code § 2040). Vector control agencies also have authority to participate in review, comment, and make recommendations regarding local, State, or federal land use planning and environmental quality processes, documents, permits, licenses, and entitlements for projects and their potential effects with respect to vector production (California Codes, Health and Safety Code, § 2041). Additionally, agencies have broad authority to influence landowners to reduce or "abate" the source of a vector problem. Agencies have authority to "abate" vector sources on private and publicly owned properties. (California Code, Health and Safety Code, § 2060-2065).

Local

Contra Costa County General Plan

Conservation Element

The General Plan Conservation Element sets forth the following applicable goals, policies, and implementation measures that are relevant to hydrologic resources:

Goal 8-T To conserve, enhance, and manage water resources, protect their quality, and assure an adequate long-term supply of water for domestic, fishing, industrial and agricultural use.

Goal 8-U To maintain the ecology and hydrology of creeks and streams and provide an amenity to the public, while at the same time preventing flooding, erosion and danger to life and property.

Goal 8-V To preserve and restore remaining natural waterways in the County which have been identified as important and irreplaceable natural resources.

Goal 8-W To employ alternative drainage system improvements which rely on increased retention capacity to lessen or eliminate the need for structural modifications to watercourses, whenever economically possible.

Policies

Policy 8-75 Preserve and enhance the quality of surface and groundwater resources.

Policy 8-78 Where feasible, existing natural waterways shall be protected and preserved in their natural state, and channels which already are modified shall be restored. A natural waterway is defined as a waterway which can support its own environment of vegetation, fowl, fish and reptiles, and which appears natural.

Policy 8-79 Creeks and streams determined to be important and irreplaceable natural resources shall be retained in their natural state whenever possible to maintain water quality, wildlife diversity, aesthetic values, and recreation opportunities.

Policy 8-82 Riparian habitat shall be protected by providing for channel cross-sections adequate to carry 100-year flows, as per policies contained in the Public Facilities/Services Element. If it is not possible to provide a channel cross-section sufficient to carry the 100-year flow, then detention basins should be developed.

Policy 8-86 Existing native riparian habitat shall be preserved and enhanced by new development unless public safety concerns require removal of habitat for flood control or other public purposes.

Policy 8-87 On-site water control shall be required of major new developments so that no increase in peak flows occurs relative to the site's pre-development condition, unless Planning Agency determines that off-site measures can be employed which are equally effective in preventing adverse downstream impacts.

Policy 8-91 Grading, filling and construction activity near watercourses shall be conducted in such a manner as to minimize impacts from increased runoff, erosion, sedimentation, biochemical degradation, or thermal pollution.

Policy 8-92 Revegetation of a watercourse shall employ native vegetation, providing the type of vegetation is compatible with the watercourse's maintenance program and does not adversely alter channel capacity.

Implementation Measure

Implementation Measure 8-cy

Through the environmental review process, the likely effects of construction and other proposed activities on nearby natural watercourses and related open space shall be determined. Measures shall be identified that will mitigate these effects and encourage the preservation of natural waterways and related open space. Such measures may include, but are not limited to:

(1) Clustering of buildings and other site design features;
(2) Restoration or enhancement of other riparian habitat within or near the project area; and
(3) Purchase of development rights for lands within other stream setback areas.

Contra Costa County Ordinance Code

Division 914 of the Ordinance Code addresses drainage. Section 914-2.002 requires that all portions of a subdivision shall be protected from flood hazards and storm drainage facilities within the subdivision shall be designed and constructed in compliance with current specifications and design standards of the Public Works Department.

Division 1014, Stormwater Management and Discharge Control, carries out the conditions in the County's NPDES Permit issued by the San Francisco Bay RWQCB that require implementation of appropriate source control and site design measures and stormwater treatment measures for projects that create or replace 1 acre or more of impervious surface.

Contra Costa County Green Infrastructure Plan

The County Green Infrastructure Plan provides a blueprint for how the County will add to and replace its "gray" infrastructure system of pipes and storm drains with "green" infrastructure or Low Impact Development (LID) practices throughout unincorporated areas. The Green Infrastructure Plan is a requirement of the NPDES Municipal Regional Stormwater Permit, issued by the San Francisco Bay RWQCB on November 19, 2015.[13] The intent of the Green Infrastructure Plan is to demonstrate how the County will move away from traditional stormwater infrastructure and toward green stormwater infrastructure to mitigate some of the impacts of urbanization on water quality to the creeks, waterways, and the San Francisco Bay. The focus of the County Green Infrastructure Plan is the integration of stormwater treatment into County-owned properties, parking lots, and road right-of-way. As a long-term (2020-2040) blueprint, it seeks to show how the County intends to gradually transform its urban landscape and storm drainage systems by allowing runoff to flow through stormwater treatment facilities (i.e., bioswales and bioretention cells) that remove many urban pollutants before they enter the storm drain system.

Brookside Drive, from Central Street to the railroad tracks, and Fred Jackson Way, from San Pablo Creek to Chesley Avenue, are both identified as future locations for a Green Infrastructure Projects (Exhibit 3.9-1). These areas were selected based on their locations adjacent to old urban and industrial land use areas where stormwater pollutants are the highest.

[13] Contra Costa County. 2019. Green Infrastructure Plan. Website: https://www.contracosta.ca.gov/DocumentCenter/View/61241/CCCPW-GI-Plan_Final_07-26-19-PDF?bidId=. Accessed April 14, 2021.

3.9.4 - Impacts and Mitigation Measures

Significance Criteria

According to the California Environmental Quality Act (CEQA) Guidelines Appendix G Environmental Checklist, to determine whether impacts related to hydrology and water quality are significant environmental effects, the following questions are analyzed and evaluated. Would the proposed project:

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 proposed project may impede sustainable groundwater management of the basin?

c) Substantially alter the existing drainage pattern of the site or 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?

Approach to Analysis

Impacts related to hydrology and water quality were determined by reviewing information regarding regional and local hydrology, climate, topography, and geology contained in the General Plan, San Francisco Bay RWQCB Basin Plan, FEMA FIRMs, project utility plans, and the site-specific Preliminary Hydrology and Hydraulics Report and Preliminary Stormwater Control Plan (Appendix G).

The evaluation of impacts is based on a comparison of existing conditions to anticipated conditions once the proposed project is constructed and operational, such as changes in impervious area, as well as facilities potentially located within flood zones. Specifically, the impact evaluation focuses on the effect of the proposed project on surface and groundwater quality, groundwater supply, and drainage (in terms of erosion, siltation, flooding, stormwater system exceedance, and polluted runoff). Water quality conditions are compared with water quality standards and WDRs by identifying potential contaminants and pollution pathways, amount of impervious area, and runoff treatment requirements. Finally, as part of the analysis, inundation and flooding on the project site is assessed by reviewing potential inundation zone elevations relative to the final grade elevations of facilities and features for the proposed project.

Specific Thresholds of Significance

For purposes of this analysis, the following thresholds are used to evaluate the significance of Hydrology and Water Quality impacts resulting from implementation of the proposed project.

- Violate any water quality standards or waste discharge requirements established by a regulatory body with jurisdiction over the project area.
- Deplete groundwater supplies or interfere with groundwater recharge such that the production rate or volumes of wells or aquifers would drop.
- Alter an existing drainage pattern through alteration of the course of a stream or river or increased impervious surfaces and resulting in erosion, siltation, or flooding on- or off-site.
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- Expose people to pollutants due to inundation related to flooding, tsunami, or seiche.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Impact Evaluation

Surface and Groundwater Quality

Impact HYD-1: **The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.**

Construction

Construction activities, including the areas proposed for off-site improvements, would expose soils on the project site to potential water erosion and construction equipment-related pollutants. Runoff from graded areas could carry eroded soils and pollutants into the storm drainage systems and into San Pablo Creek and Wildcat Creek, increasing sedimentation and degrading downstream water quality. These sediments also could be carried downstream and discharged into San Pablo Bay and San Francisco Bay and ultimately into the Pacific Ocean, degrading surface water quality, or allowed to seep into the associated groundwater table.

As detailed in the Geotechnical Investigation, groundwater was encountered in borings at depths of approximately 6 to 23 feet below ground surface (BGS).[14] Groundwater monitoring wells in the vicinity have measured groundwater levels at depths between 3- and 15-feet BGS. The Geotechnical Investigation advises that groundwater should generally be expected in on-site excavations as shallow as 3 feet BGS. As such, ground disturbance has the potential to encounter groundwater and may require dewatering during construction activities. The discharge of construction dewatering could result in increased sediment loads to the storm drain system, which could similarly impact water quality if not properly controlled.

[14] Cornerstone Earth Group. 2018. Geotechnical Investigation: 506 Brookside Drive Warehouses. August 22.

Given that proposed construction would disturb more than 1 acre of land, the proposed project would be required to comply with the terms of the NPDES permits and the Contra Costa County Ordinance Code (Ordinance Code) Chapter 1014-4, which requires the preparation and implementation of a SWPPP. The SWPPP would include BMPs to ensure reduction of pollutants from construction activities potentially entering surface waters. Additionally, implementation of the SWPPP would also prevent pollutants from entering the San Pablo Basin by preventing pollutants from moving off-site.

Therefore, although construction activities have the potential to generate increased sedimentation, compliance with applicable policies and regulations would minimize the potential to degrade water quality in downstream water bodies to the maximum extent possible. As a result, construction-related project impacts related to surface and groundwater, and respective water quality would be less than significant.

Operation

The project site is in a relatively urbanized area with mostly pervious surfaces. Project operation would generate runoff, which may carry pollutants such as pesticides, fertilizers, and deposits of fluids and metals from motor vehicles into San Pablo Creek or Wildcat Creek, or allow seepage of such pollutants into the associated groundwater table.

The proposed project would increase impervious surfaces compared to existing conditions, and therefore would generate increased amounts of runoff that could carry pollutants into San Pablo Creek, Wildcat Creek, or the San Pablo Basin. However, the proposed project would comply with the County's NPDES program and the CCCWP, and all County Ordinance Codes related to stormwater pollution, which would minimize the potential to degrade water quality in downstream water bodies to the maximum extent possible.

As described in the Preliminary Stormwater Control Plan, the proposed project would incorporate LID techniques to allow for stormwater infiltration and treatment before being discharged to the storm drain system. The proposed project would use 100 percent LID, meaning 100 percent of project runoff would be contained and treated on-site. This would be accomplished through the installation of five landscape-based bioretention areas as design elements (see Exhibit 2-6). Runoff from the impervious areas on the project site, including roofs and paved areas, would be routed to the bioretention areas. The proposed project would also include landscaping and bioretention swales on the Brookside Drive and Fred Jackson Way Frontages (see Chapter 2, Project Description, Exhibit 2-6). Therefore, operation-related project impacts related to surface and groundwater, and respective water quality would be less than significant.

Level of Significance

Less than significant impact.

Groundwater Supply/Recharge

Impact HYD-2: The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the proposed project may impede sustainable groundwater management of the basin.

Construction

Impacts related to depletion of groundwater supplies or interference with groundwater recharge are limited to operational impacts. No respective construction impacts would occur on the project site because construction activities would not involve the use of groundwater. Any dewatering required for groundwater encountered during construction would be in minimal amounts and would not deplete groundwater supplies.

Operation

As described in the Environmental Setting, the project site is located within the East Bay Plain Subbasin, a subbasin of the Santa Clara Valley Groundwater Basin but does not contain active groundwater wells used for potable water supplies. As detailed in the Geotechnical Investigation, groundwater was encountered in the borings during drilling at depths of approximately 6 to 23 feet BGS.[15] Groundwater monitoring wells in the vicinity have measured groundwater levels at depths between 3- and 15-feet BGS, indicating that groundwater could be encountered in on-site excavations as shallow as 3 feet below grade. However, the near-surface soils at the site are clayey and limit the infiltration of stormwater.

Although the proposed project would increase impervious surfaces compared to existing conditions, the incorporation of LID techniques, such as the installation of five landscape-based bioretention areas, would retain stormwater on-site and facilitate groundwater recharge. In addition, as described in Section 3.14, Utilities and Services Systems, East Bay Municipal Utility District (EBMUD) would be able to provide adequate water services to the project site and the rest of its service area during normal, dry, and multiple dry years, and no groundwater would be used. Thus, the proposed project would not interfere substantially with groundwater supply, recharge, or groundwater management. Therefore, impacts related to groundwater recharge and supply would be less than significant.

Level of Significance

Less than significant impact.

[15] Cornerstone Earth Group. 2018. Geotechnical Investigation: 506 Brookside Drive Warehouses. August 22.

Drainage Leading to Erosion/Siltation, Flooding, Additional Sources of Polluted Runoff, or Impedance of Flood Flows

Impact HYD-3: **The proposed project could substantially alter the existing drainage pattern of the site or 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.

i) Construction-related Erosion and Siltation

The proposed project would have a significant impact if it were to substantially alter the existing drainage pattern of the site in a manner that would result in substantial erosion or siltation on- or off-site. Such drainage effects could occur from grade changes at the project site, exposure of soils for periods of time during stormwater discharge, or alterations to creek beds. These types of changes would have a potentially significant impact to on-site drainage patterns.

The proposed project would involve construction in an area, the majority of which is currently comprised of pervious surfaces. On the northern portion of the project site, stormwater currently flows overland from the southeast to the northwest, where it is collected by a series of open channel ditches and pipe culverts that flow west along Brookside Drive and ultimately into an existing 48-inch storm drain at the corner of Brookside Drive and Fred Jackson Way. The 48-inch storm drain conveys the stormwater north until it is discharged into San Pablo Creek. On the southern portion of the project site, stormwater currently flows overland from the east to the west where it is collected along the eastern side of Fred Jackson Way. The stormwater is then conveyed south into an existing 36-inch storm drain along Fred Jackson Way that discharges into Wildcat Creek. Construction activity, such as grading and excavation, could result in substantial erosion or siltation due to drainage pattern alteration and could result in polluted runoff entering San Pablo Creek (approximately 750 feet north of the project site) and Wildcat Creek (approximately 400 feet south of the project site). This would represent a potentially significant impact.

Implementation of Mitigation Measure (MM) HYD-3 would ensure the proposed project complies with regulations of the NPDES permit consistent with Division 1014 of the Ordinance Code. Additionally, as part of compliance with Division 1014 of the Ordinance Code, the proposed project would also be required to prepare and implement a SWPPP to ensure that erosion, siltation, and flooding are prevented or minimized to the maximum extent feasible during construction. The SWPPP would include both structural (physical devices or measures) and operational (timing of construction) BMPs that would prevent or reduce the discharge of pollutants directly or indirectly into waterbodies. As part of the SWPPP, erosion and control measures would be implemented throughout the duration of construction, including rock barrier bags placed around the catch basin until the site is paved, temporary sediment basins, placement of coarse aggregate gravel at each

driveway entrance to the site such that mud or sediments would not be tracked off-site by construction vehicles, and maintaining the site to minimize sediment from entering any storm drain system in stormwater runoff. Therefore, the construction impact related to alteration of drainage patterns resulting in erosion or siltation would be less than significant.

Operation-related Erosion and Siltation

The project site is in an urbanized area and primarily consists of pervious surfaces. Development of the project site would therefore increase impervious surfaces compared to existing conditions and could result in increased amounts of stormwater runoff that could carry pollutants into San Pablo Creek and Wildcat Creek.

Implementation of MM HYD-3 would ensure the proposed project collects and conveys stormwater entering or originating from the project site consistent with Division 1014 of the County Ordinance Code. MM HYD-3 would also require the project applicant to prepare and submit a Final Storm Water Control Plan and Stormwater Control Operation and Maintenance Plan for review and approval by the County Public Works Department. Therefore, the potential operational impacts related to alteration of drainage pattern resulting in erosion or siltation would be less than significant.

ii) Construction-related Surface Runoff

As described previously, implementation of MM HYD-3 would ensure the proposed project complies with regulations of the NPDES permit consistent with Division 1014 of the County Ordinance Code. Additionally, as part of compliance with the County Ordinance Code the proposed project would be required to prepare and implement a SWPPP to ensure that erosion, siltation, and flooding are prevented or minimized to the maximum extent feasible during construction. The SWPPP would include both structural (physical devices or measures) and operational (timing of construction) BMPs that would prevent or reduce the amount of stormwater runoff that could be deposited directly or indirectly into waterbodies. As part of the SWPPP, erosion and control measures would be implemented throughout the duration of construction that would also limit the volume of stormwater that would be discharged. These measures include rock barrier bags placed around the catch basin until the site is paved and temporary sediment basins that would retain stormwater to prevent significant peak flows. As such, construction impacts related to flooding would be less than significant with mitigation incorporated.

Operation-related Surface Runoff

The proposed project would develop a 31.48-acre project site that is currently composed of mostly pervious surfaces. On the northern portion of the project site, stormwater flows overland from the southeast to the northwest, where it is collected by a series of open channel ditches and pipe culverts that flow west along Brookside Drive ultimately into an existing 48-inch storm drain at the corner of Brookside Drive and Fred Jackson Way. The 48-inch storm drain conveys the stormwater north until it is discharged into San Pablo Creek. On the southern portion of the project site, stormwater flows overland from the east to the west where it is collected along the eastern side of Fred Jackson Way. The stormwater is then conveyed south into an existing 36-inch storm drain along Fred Jackson Way that discharges into Wildcat Creek.

At operation, the proposed project would result in 555,537 square feet of warehouse space, 613,947 square feet of hardscape, and 129,719 square feet of landscaped areas. Compared to existing conditions, the proposed project would result in an increase of impervious surfaces, which could increase surface runoff and potentially cause flooding on- or off-site. This would represent a potentially significant impact.

The applicant would be required to comply with Division 914 of the Ordinance Code, Drainage, regarding collection and conveyance requirements and would also be required to implement MM HYD-3, which would ensure that the site discharges to facilities with adequate capacity, or that the downstream facilities be made adequate to accommodate runoff from and through the site. Furthermore, as part of the proposed improvements, runoff from impervious areas on the project site, including roofs and paved areas, would be routed to five bioretention areas. Overflow from the on-site bioretention areas would be conveyed to the off-site storm drain system designated Line A that drains to Wildcat Creek, and Line B that drains to San Pablo Creek. As described in the Preliminary Stormwater Control Plan, the proposed project has been designed to retain and treat stormwater runoff before being discharged to the storm drain system. As detailed in the Preliminary Hydrology and Hydraulics Report, the stormwater overflow from the on-site bioretention areas would be conveyed to the off-site stormwater system designated Line A and Line B and would not result in an adverse impact to the subject property, adjacent properties, or the existing storm drain system (see also Table 3.9-1 below). As described under Section iii) below, the proposed stormwater facilities as part of the proposed project would reduce the operational stormwater runoff rates below the existing stormwater runoff rates. Therefore, operation of the proposed project would reduce the amount of surface runoff as compared to existing conditions and would not result in substantial off-site flooding within FC District Drainage Area 19A or to downstream areas that are within a Special Flood Hazard Area.

iii) Construction-related Exceedance of Storm Drain Capacity

During construction, the proposed project could increase stormwater runoff generation, which could potentially lead to flooding on or off-site. However, the proposed project would be required to implement a SWPPP as part of its Construction General Permit to ensure that stormwater generation and pollutants are prevented or minimized to the maximum extent feasible during construction through the implementation of standard BMPs. Therefore, the construction impact related to exceedance of storm drain capacity and stormwater pollution would be less than significant.

Operation-related Exceedance of Storm Drain Capacity

The proposed project would increase impervious surfaces compared to existing conditions, and therefore would potentially generate increased amounts of runoff. As described in the Preliminary Stormwater Control Plan, the proposed project would incorporate LID techniques to allow for stormwater infiltration and treatment before being discharged to the storm drain system. The proposed project would use 100 percent LID, meaning 100 percent of project runoff would be contained and treated on-site. This would be accomplished through the installation of five landscape-based bioretention areas as design elements. Runoff from the impervious areas on the project site, including roofs and paved areas, would be routed to the bioretention areas. Overflow from the on-site bioretention areas would be conveyed to the off-site storm drain system designated Line A which drains to Wildcat Creek and Line B which drains to San Pablo Creek.

As summarized in Table 3.9-1, the proposed stormwater facilities as part of the proposed project would reduce the operational stormwater runoff rates below the existing stormwater runoff rates.

Table 3.9-1: Hydrology Comparison Summary–Existing vs. Proposed Condition

	Existing		Proposed		Difference
Storm Drain	Drainage Subareas	10-year, 24-hour, Peak Discharge Rate (cubic feet per second)	Drainage Area	10-year, 24-hour, Peak Discharge Rate (cubic feet per second)	(cubic feet per second)
Line A	Aa, Ac	23.0	A	19.2	-3.8
Line B	Ba, Bc, Be	34.5	B	25.2	-9.3
Source: Kier and Wright Civil Engineers and Surveyors. 2018. Preliminary Hydrology and Hydraulics Report. July 31.					

As detailed in the Preliminary Hydrology and Hydraulics Report, the proposed peak discharge rates for storm drain Line A and storm drain Line B would not exceed the existing condition for the 10-year 24-hour storm events. As such, the proposed storm drain system has sufficient capacity to convey the 10-year storm event.

Furthermore, implementation of MM HYD-3 would ensure the proposed project collects and conveys stormwater entering or originating from the project site in accordance with Division 914 of the County Ordinance Code. MM HYD-3 would also ensure that the proposed project complies with regulations of the NPDES permit, and that the project applicant prepares and submits a Final Storm Water Control Plan and Stormwater Control Operation and Maintenance Plan to the County Public Works Department for approval. As a result, the proposed project would not create substantial new stormwater runoff that would exceed existing stormwater facilities or generate excessive stormwater pollutants. Therefore, impacts would be less than significant.

iv) Construction-related Impacts to Flood Flows

As described in the Environmental Setting, the project site is designated Zone X—0.2 percent annual chance flood hazard. As described in further detail under Impact HYD-4, the project site is not susceptible to inundation from flood hazards, tsunamis, or seiches. As a result, construction of the project on the project site would not impede or redirect flows, and impacts would be less than significant.

Operation-related Impacts to Flood Flows

As discussed above, the project site is designated Zone X – 0.2 percent annual chance flood hazard and is not susceptible to inundation from flood hazards, tsunamis, or seiches. As a result, the proposed project would not impede of redirect flood flows. Therefore, there would be no operational impedance of flood flow impact and impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HYD-3 Prepare Final Drainage Plan Prior to Grading

- In accordance with Division 914 of the Contra Costa County Ordinance Code, the project applicant shall collect and convey all stormwater entering and/or originating on this property, without diversion and within an adequate storm drainage facility, to a natural watercourse having definable bed and banks, or to an existing adequate public storm drainage system that conveys the stormwater to a natural watercourse. Any proposed diversions of the watershed shall be subject to hearing body approval. Prior to issuance of a grading permit, the applicant shall submit improvement plans for proposed drainage improvements, and a drainage report with hydrology and hydraulic calculations to the Engineering Services Division of the Public Works Department for review and approval that demonstrates the adequacy of the on-site drainage system and the downstream drainage system. The applicant shall verify the adequacy at any downstream drainage facility accepting stormwater from this project prior to discharging runoff. If the downstream system(s) is not adequate to handle the Existing Plus Project condition for the required design storm, improvements shall be constructed to make the system adequate. The applicant shall obtain access rights to make any necessary improvements to off-site facilities.
- In accordance with Division 1014 of the Contra Costa County Ordinance Code, the applicant shall comply with all rules, regulations, and procedures of the National Pollutant Discharge Elimination System (NPDES) for municipal, construction and industrial activities as promulgated by the California State Water Resources Control Board, or any of its Regional Water Quality Control Boards (San Francisco Bay—Region 2); and
- Submit a Final Stormwater Control Plan and a Stormwater Control Operation and Maintenance Plan (O&M Plan) to the Public Works Department, which shall be reviewed for compliance with the County's NPDES Permit and shall be deemed consistent with the County's Stormwater Management and Discharge Control Ordinance (Division 1014) prior to issuance of a building permit. Improvement Plans shall be reviewed to verify consistency with the Final Stormwater Control Plan and compliance with the Contra Costa Stormwater C.3 Guidebook of the County's NPDES Permit and the County's Stormwater Management and Discharge Control Ordinance (Division 1014) and be designed to discourage prolonged standing/ponding of water on-site.

Level of Significance After Mitigation

Less than significant impact.

Risk of Pollutant Release Due to Inundation

Impact HYD-4: The proposed project would not be located in a flood hazard zone, tsunami, or seiche zone, or risk release of pollutants due to project inundation.

Construction

Impacts related to inundation are limited to operational impacts. As such, no construction impacts would occur.

Operation

As described previously, FEMA designates the project site as Zone X, which indicates a 0.2 Percent Annual Chance Flood Hazard, which according to FEMA is a moderate flood hazard zone or a 500-year flood zone.[16] The closest designated 100-year flood hazard zones to the project site are located approximately 400 feet to the south along Wildcat Creek and approximately 750 feet to the north along San Pablo Creek.[17] However, the proposed project does not include residential uses and would not therefore result in the development of any habitable structures in a flood zone.

Implementation of MM HYD-3 would ensure the proposed project collects and conveys stormwater entering or originating from the project site in accordance with Division 914 of the County Ordinance Code. MM HYD-3 would also ensure that the proposed project complies with regulations of the NPDES permit, and that the project applicant prepares and submits a Final Storm Water Control Plan and Stormwater Control Operation and Maintenance Plan (O&M Plan) to the County Public Works Department for approval. As a result, implementation of MM HYD-3 and compliance the Public Works Department review would ensure the proposed project would not increase flood risk compared to existing conditions due to stormwater runoff generated on the project site. As discussed in Section 3.8 Hazards and Hazardous Materials, the proposed project would not include the regular use, transport, or storage of significant amounts of hazardous materials. Therefore, the proposed project would not include uses that would be susceptible to the release of significant pollutants while inundated from a flood.

San Pablo Bay is approximately 0.75-mile northwest of the project site. Although the project site is not located within a designated tsunami inundation zone, the closest tsunami inundation zone to the project site is located approximately 750 feet to the north along San Pablo Creek.[18] However, as discussed previously, the proposed project would not use, handle, or transport significant amounts of hazardous materials that could be released during inundation from a tsunami. Therefore, impacts would be less than significant.

With respect to sea level rise, the appellate court has specifically held that an EIR need not contain an extensive analysis of sea level rise or evaluate the potential impacts of sea level rise on a project. (*Ballona Wetlands Land Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 473-74 [*Ballona]*).

[16] Federal Emergency Management Agency (FEMA). 2020. Flood Zones. July 8. Website: https://www.fema.gov/flood-zones. Accessed April 15, 2021.

[17] Federal Emergency Management Agency (FEMA). National Flood Hazard Layer (NFHL) FIRMette. 2020. Website: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd. Accessed March 19, 2021.

[18] California Emergency Management Agency. 2009. Tsunami Inundation Map for Emergency Planning. July 31. Website: https://www.conservation.ca.gov/cgs/tsunami/maps/contra-costa. Accessed April 15, 2021.

Therefore, this discussion related to project site inundation from sea level rise is included for informational purposes. Sea level rise is a multi-faceted and complex planning issue involving many stakeholders, including but not limited to, the San Francisco Bay Conservation and Development Commission (BCDC), San Francisco Bay RWQCB, Contra Costa County, and City of Richmond. BCDC's Adapting to Rising Tides Program (ART Program) works with stakeholders around the Bay Area to understand their vulnerability to sea level rise and how future flooding will communities, businesses, infrastructure, and natural systems.[19]

The ART Program conducted a climate adaptation planning effort in the County to understand and plan for the diverse challenges and opportunities presented by adapting to sea level rise. The Contra Costa ART Program resulted in the publication of a Final Project Report and Contra Costa County Shoreline and Inundation Mapbook. The inundation maps provide a regional-scale illustration of inundation and coastal flooding due to specific sea level rise and storm surge scenarios. For the project site, 10 maps were prepared to depict scenarios from 0 inches of sea level rise and a 1-year storm surge (lowest level of inundation) to 66 inches of sea level rise and a 100-year storm surge (highest level of inundation). As depicted on the inundation maps, the project site would not become inundated under any of the predicted scenarios.[20] As such, the proposed project would have low risks associated with flooding and inundation from the effects of sea level rise. Furthermore, because the proposed project would not include the regular use, transport, or storage of significant amounts of hazardous materials, any inundation of the project site from sea level rise would not result in the release of pollutants.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement MM HYD-3.

Level of Significance After Mitigation

Less than significant impact.

Water Quality Control or Sustainable Groundwater Management Plans Consistency

Impact HYD-5: The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Construction

The proposed project would not conflict with the County Watershed Program and the County's NPDES program. Given that proposed construction would disturb more than 1 acre of land, the proposed project would be required to comply with the terms of the Construction General Permit,

[19] San Francisco Bay Conservation and Development Commission (BCDC). 2021. Climate Change. Website: https://www.bcdc.ca.gov/cc/climate_change.html. Accessed April 16, 2021.

[20] San Francisco Bay Conservation and Development Commission (BCDC). 2017. Bay Area Sea Level Rise Analysis and Mapping Project Contra Costa County. April. Website: http://www.adaptingtorisingtides.org/wp-content/uploads/2015/04/ContraCostaCoARTSLRMaps2017.Web_.pdf. Accessed April 16, 2021.

which require the preparation and implementation of a SWPPP that would include BMPs to ensure reduction of pollutants from construction activities potentially entering surface or groundwater. Therefore, construction impacts related to a Basin Plan or groundwater management plan consistency would be less than significant.

Operation

The project site is located within the East Bay Plain Subbasin, a subbasin of the Santa Clara Valley Groundwater Basin but does not contain active groundwater wells used for potable water supplies. As described under Impact HYD-2, the near-surface soils at the site are clayey and limit the infiltration of stormwater. In addition, the proposed project would incorporate LID techniques to retain stormwater on-site and facilitate groundwater recharge. Lastly, the EBMUD would provide potable water to the project site and does not use groundwater as a water source.[21] As a result, the proposed project would not conflict with or obstruct a sustainable groundwater management plan. Therefore, operational impacts related to a Basin Plan or groundwater management plan consistency would be less than significant.

Level of Significance

Less than significant impact.

3.9.5 - Cumulative Impacts

Hydrology

Cumulative impacts related to hydrology and water quality typically occur within a defined watershed. The project site is located within the San Pablo Creek and Wildcat Creek Watersheds. Most of the cumulative projects listed in Chapter 3, Environmental Impact Analysis, Table 3-1, Cumulative Projects, are located within the San Pablo Creek and Wildcat Creek Watersheds, and all respective surface water in the watershed eventually discharges into San Francisco Bay. Some cumulative projects are located within the County, including the proposed project, and would be required to comply with the CCCWP and General Plan policies, which prevent a project from increasing off-site surface water flow from existing conditions and ensure that projects adhere to best practices during construction to prevent pollutants from being carried off-site. Some cumulative projects are in the City of Richmond and City of San Pablo. Cumulative development in the City of Richmond would be required to demonstrate consistency with the City of Richmond General Plan and applicable codes, ordinances, and policies related to preventing pollutants from being conveyed off-site. Cumulative development in the City of San Pablo would be required to demonstrate consistency with the City of San Pablo General Plan and applicable codes, ordinances, and policies related to preventing pollutants from being conveyed off-site. The combination of these policies and best practices would prevent significant cumulative impacts to hydrology. Thus, there would be a less than significant cumulative impact related to hydrology.

[21] East Bay Municipal Utility District (EBMUD). Urban Water Management Plan 2015. Website: https://www.ebmud.com/water/about-your-water/water-supply/urban-water-management-plan/. Accessed March 19, 2021.

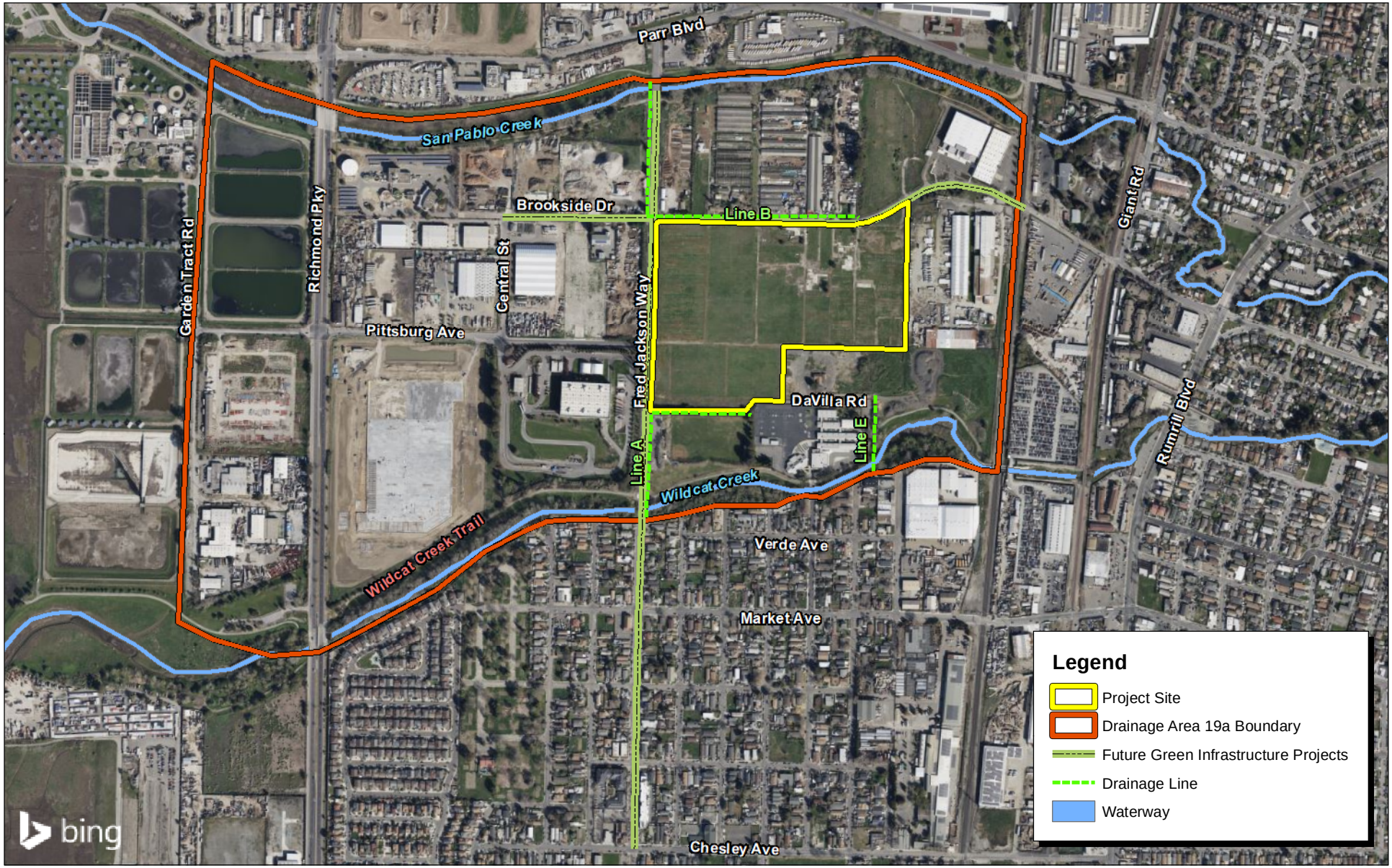
Water Quality

The geographic context for consideration of cumulative impacts related to surface water quality is the San Pablo Creek Watershed and the Wildcat Creek Watershed. All cumulative projects, including 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, including San Pablo Creek, Wildcat Creek, and San Francisco Bay. All cumulative project construction would be required to obtain a Construction General Permit from the State Water Board, which would require preparation of a SWPPP that would control potential discharges of contaminants into San Pablo Creek, Wildcat Creek, and San Francisco Bay. Operations of these cumulative projects would be required to comply with the CCCWP, Furthermore, implementation of MM HYD-3 would ensure the proposed project collects and conveys stormwater entering or originating from the project site in accordance with Division 914 of the County Ordinance Code. MM HYD-3 would also ensure the applicant complies with all rules, regulations and procedures of the NPDES in accordance with Division 1014 of the County Ordinance Code regarding stormwater. Development in the County would be required to implement similar measures in accordance with adopted regulations, while projects would be subject to the Construction General Permit if applicable. Development in the City of Richmond would be required to implement similar measures in accordance with adopted regulations, while projects would be subject to the Construction General Permit if applicable. Development in the City of San Pablo would be required to implement similar measures in accordance with adopted regulations, while projects would be subject to the Construction General Permit if applicable. Thus, there would be a less than significant cumulative impact related to surface water quality.

The geographic context for consideration of cumulative impacts related to groundwater quality and management is the East Bay Plain Subbasin. All cumulative projects, including the proposed project, would involve short-term construction and long-term operational activities that would have the potential to impact groundwater quality and management. If applicable, cumulative project construction would be required to obtain a Construction General Permit from the State Water Board, which would require preparation of a SWPPP that would control pollutants that could seep into groundwater. Operations of cumulative projects in County would be required to comply with the CCCWP and the County Ordinance Code regarding groundwater. Operations of cumulative projects in the City of Richmond would be required to comply with the CCCWP and the City of Richmond Ordinance Code regarding groundwater. Operations of cumulative projects in the City of San Pablo would be required to comply with the CCCWP and the City of San Pablo Ordinance Code regarding groundwater. Thus, there would be a less than significant cumulative impact related to groundwater quality.

Level of Cumulative Significance

Less than significant impact.



Source: Bing Aerial Imagery. Contra Costa County Flood Control and Water Conservation District.

FIRSTCARBON SOLUTIONS™

825 412.5 0 825 Feet

Exhibit 3.9-1
Adjacent and Nearby Waterways and Drainage Facilities

THIS PAGE INTENTIONALLY LEFT BLANK

3.10 - Land Use and Planning

3.10.1 - Introduction

This section describes existing conditions related to land use and planning as well as the relevant regulatory framework. This section also evaluates the possible impacts related to land use and planning that could result from implementation of the proposed project. Information included in this section is based on review of applicable land use policies and regulations, including the Contra Costa General Plan (General Plan) and Contra Costa County Ordinance Code (Ordinance Code). No comments were received during the Notice of Preparation (NOP) comment period related to land use and planning.

3.10.2 - Environmental Setting

Physical Land Use

Surrounding Area

Surrounding land uses are shown in Chapter 2, Project Description, Exhibits 2-2 and 2-3, and are described below.

To the West

Fred Jackson Way bounds the project site on the west. Land to the west of the site, across Fred Jackson Way, is used for industrial purposes (West County Recycling Center and Household Hazardous Waste Facility, commercial nurseries, and a security system supplier). Wildcat Creek Marsh is located approximately 0.7 mile west of the project site and San Pablo Creek Marsh is located approximately 0.5 mile northwest of the project site. San Pablo Bay is approximately 0.75 mile northwest of the project site.

To the North

Brookside Drive bounds the project site on the north. Land uses to the north across Brookside Drive include commercial greenhouses, a nursery, Urban Tilth's North Richmond Farm, a solar panel manufacturer, and unoccupied residential type structures that are proposed to be converted to warehouse land uses. San Pablo Creek is located approximately 750 feet north of the project site.

To the East

S & S RV Repairs and Lantier Tent Structures and associated parking are located east of the project site. Interstate 80 (I-80) is located approximately 1.75 miles to the east.

To the South

The Quarry House (an unoccupied single-family residence proposed to be converted to an office), DaVilla Road (a minor side street), North Richmond Baseball Field, and Verde Elementary School are located south of the project site. Wildcat Creek is located approximately 400 feet south of the project site. The Wildcat Creek Trail, a Class I bikeway, is located along the north side of Wildcat Creek, extending from Richmond Parkway to Giaramita Street. Single-family residences are located approximately 600 feet south of the project site, across Wildcat Creek. I-580 is located approximately

2.5 miles south of the project site and the Richmond-San Rafael Bridge is located approximately 3 miles southwest.

Project Site

The project site consists of 19 parcels, as shown in Chapter 2, Project Description, Exhibit 2-3; the 19 parcels are also listed in Chapter 2, Project Description, Table 2-1. The applicant has submitted a major subdivision application (tentative map) to consolidate the 19 parcels within the project site into three parcels.

The project site is relatively flat, with elevations ranging between approximately 12 to 20 feet above mean sea level, with a gentle downward slope to the northwest. The project site contains the foundations of several former residential structures, barns, and greenhouse buildings, but no structures remain on-site. Fallow agricultural land is found on-site, consisting primarily of non-native grasses, herbaceous plants, and forbs. The site contains several trees that qualify for protection and would require a removal permit. Several ornamental trees are also present on-site, which would not require a permit for removal.[1] There are telecommunication lines around the project site. However, there are no streetlights surrounding the project site.

Land Use Designations and Zoning

Surrounding Area

Exhibits 2-4 and 2-5 in Chapter 2, Project Description, depict the land use designations and zoning for surrounding properties, and are described below.

To the West

The Contra Costa County General Plan designates the surrounding area west of the project site as Heavy Industry (HI). The surrounding area west of the project site is located within the P-1 Zoning District on the County's Zoning Map.

To the North

The Contra Costa County General Plan designates the surrounding area north of the project site as Heavy Industry (HI). The surrounding area north of the project site is located within the P-1 Zoning District on the County's Zoning Map.

To the East

The Contra Costa County General Plan designates the surrounding area east of the project site as Heavy Industry (HI). The surrounding area east of the project site is located within the P-1 Zoning District on the County's Zoning Map.

To the South

The Contra Costa County General Plan designates the surrounding area south of the project site as Light Industry (LI) and Public and Semi-Public (PS). The City of Richmond General Plan designates an area south of the project site as Parks and Recreation (PR). The surrounding area south of the project

[1] Dmitri Tioupine 2018. Tree Care and Preservation. Pre-Development Tree Assessment Report. August.

site is located within the P-1 Zoning District on the County's Zoning Map and within the PR Zoning District on the City of Richmond's Zoning Map.

Project Site

The General Plan[2] designates the site as Light Industry (LI) and Heavy Industry (HI) (Exhibit 2-4). Pursuant to the General Plan Land Use Element, the LI designation allows for a floor area ratio (FAR) between 0.25 and 0.67 and maximum site coverage is allowed up to 50 percent with an average of 60 employees per gross acre. Primary land uses associated with the LI designation include research, engineering, product development and testing, sales development, light manufacturing, warehousing, distribution centers, and commercial nurseries. Support retail/service uses may also be located within this designation.

The HI designation allows a FAR between 0.1 and 0.4, and maximum site coverage is allowed up to 30 percent with an average of 45 employees per gross acre. Primary land uses associated with the HI designation include contractors' storage yards, warehouses, machine shops, commercial nurseries, metalworking, heavy equipment operation, and chemical or petroleum processing and refining. Support retail/service uses may also be located within this designation.

The project site is located within the P-1 Zoning District on the County's Zoning Map.

3.10.3 - Regulatory Framework

Federal

No federal plans, policies, regulations, or laws related to land use and planning are applicable to the proposed project.

State

No Statewide plans, policies, regulations, or laws related to land use and planning are applicable to the proposed project.

Regional

Local

Contra Costa County General Plan

The General Plan serves as the fundamental land use and development policy document and identifies how the unincorporated areas will grow and conserve their resources. The General Plan contains the following elements: Land Use, Growth Management, Transportation and Circulation, Housing, Public Facilities and Services, Conservation, Open Space, Safety, and Noise.

Within each element, the General Plan sets forth goals, policies, and implementation measures to guide future development and land use activities. Goals provide a description of general community values and set the direction for more specific policies and implementation programs related to public health, safety, or general welfare. Policies are based upon goals and provide a specific

[2] Contra Costa General Plan. 2005. Chapter 3: Land Use Element (reprint 2010), page 3-84. Website: http://www.co.contra-costa.ca.us/DocumentCenter/View/30913/Ch3-Land-Use-Element?bidId=. Accessed August 25, 2020.

statement intended to guide the decision-making body. Implementation measures are specific actions, procedures, programs, or techniques that carry out policies.

General Plan Land Use Element

The General Plan Land Use Element includes land use goals, objectives, and policies, as well as a Land Use Element Map. The map illustrates land use designations throughout the County. The Land Use Element Map designates the site LI and HI (Exhibit 2-4). Pursuant to the General Plan Land Use Element, the LI designation allows a FAR between 0.25 and 0.67 and maximum site coverage is allowed up to 50 percent with an average of 60 employees per gross acre. The HI designation allows a FAR between 0.1 and 0.4, and maximum site coverage is allowed up to 30 percent with an average of 45 employees per gross acre.[3]

Goals and policies as set forth in the Land Use Element that are applicable to the proposed project include the following:

Goal 3-A To coordinate land use with circulation, development of other infrastructure facilities, and protection of agriculture and open space, and to allow growth and the maintenance of the County's quality of life. In such an environment, all residential, commercial, industrial, recreational, and agricultural activities may take place in safety, harmony, and to mutual advantage.

Goal 3-C To encourage aesthetically and functionally compatible development which reinforces the physical character and desired images of the County.

Goal 3-D To provide for a range and distribution of land uses that serve all social and economic segments of the county and its subregions.

Goal 3-F To permit urban development only in locations of the County within identified outer boundaries of urban development where public service delivery systems that meet applicable performance standards are provided or committed.

Goal 3-J To encourage a development pattern that promotes the individuality and unique character of each community in the County.

Policies

Policy 3-5 New development within unincorporated areas of the County may be approved, providing growth management standards and criteria are met or can be assured of being met prior to the issuance of building permits in accordance with the growth management.

[3] Contra Costa General Plan, Chapter 3: Land Use Element. 2005 (reprint 2010), page 3-19. Website: http://www.co.contra-costa.ca.us/DocumentCenter/View/30913/Ch3-Land-Use-Element?bidId=. Accessed September 10, 2019.

Policy 3-6 Development of all urban uses shall be coordinated with provision of essential Community services or facilities including, but not limited to, roads, law enforcement and fire protection services, schools, parks, sanitary facilities, water and flood control.

Policy 3-7 The location, timing and extent of growth shall be guided through capital improvements programming and financing (i.e., a capital improvement program, assessment districts, impact fees, and developer contributions) to prevent infrastructure, facility, and service deficiencies.

Policy 3-18 Flexibility in the design of projects shall be encouraged in order to enhance scenic qualities and provide for a varied development pattern.

Policy 3-41 The continuing orderly development of research facilities, regional offices, and light industrial uses shall be encouraged in designated areas in order to improve the economic base and provide local employment.

Policy 3-42 Industrial development shall be concentrated in select locations adjacent to existing major transportation corridors and facilities.

Policy 3-43 Industrial employment centers shall be designed to be unobtrusive and harmonious with adjacent areas and development.

General Plan Growth Management Element

Goals and policies as set forth in the Growth Management Element that are applicable to the proposed project include the following:

Goal 4-A To provide for the levels of growth and development depicted in the Land Use Element, while preserving and extending the quality of life through the provision of public facilities and ensuring traffic levels of services necessary to protect the public health, safety, and welfare.

Policy

Policy 4-5 For the purpose of applying the Traffic Level of Service standards consistent with Measure C-1988 only, unincorporated areas subject to the growth management standards of this Element shall be characterized as Central Business District, Urban, Suburban, Semi-rural and Rural as depicted in Figure 4-2.

General Plan Transportation and Circulation Element

Goals and policies as set forth in the Transportation and Circulation Element that are applicable to the proposed project include the following:

Goal 5-D To maintain and improve air quality above air quality standards.

Goal 5-E To permit development only in locations of the County where appropriate traffic level of service standards are ensured.

Goal 5-G To provide access to new development while minimizing conflict between circulation facilities and land uses.

Goal 5-I To encourage use of transit.

Goal 5-L To reduce greenhouse gas emissions from transportation sources through provision of transit, bicycle, and pedestrian facilities.

Policies

Policy 5-3 Transportation facilities serving new urban development shall be linked to and compatible with existing and planned roads, bicycle facilities, pedestrian facilities and pathways of adjoining areas, and such facilities shall use presently available public and semi-public rights of way where feasible.

Policy 5-4 Development shall be allowed only when transportation performance criteria are met and necessary facilities and/or programs are in place or committed to be developed within a specified period of time.

Policy 5-13 The use of pedestrian and bicycle facilities shall be encouraged. Proper facilities shall be designed to accommodate bikes, pedestrians, and transit.

Policy 5-15 Adequate lighting shall be provided for pedestrian, bicyclist, and vehicular, safety, consistent with neighborhood desires.

Policy 5-16 Curbs and sidewalks shall be provided in appropriate areas.

Policy 5-17 Emergency response vehicles shall be accommodated in development project design.

Policy 5-20 New development (including redevelopment and rehabilitation projects) shall contribute funds and/or institute programs to reduce parking demand and/or provide adequate parking.

Policy 5-21 New development shall contribute funds and/or institute programs to provide adequate bicycle and pedestrian facilities where feasible.

Policy 5-24 Use of alternative forms of transportation, such as transit, bike and pedestrian modes, shall be encouraged in order to provide basic accessibility to those without access to a personal automobile and to help minimize automobile congestion and air pollution.

Policy 5-33 Landscaping and maintenance of street medians and curb areas shall be provided where appropriate.

General Plan Public Facilities Element

Goals and policies as set forth in the Public Facilities Element that are applicable to the proposed project include the following:

Goal 7-F To assure potable water availability in quantities sufficient to serve existing and future residents.

Goal 7-J To ensure that new development pays the costs related to the need for increased water system capacity.

Goal 7-N To assure that new development pays the costs related to the need for increased sewer system capacity.

Goal 7-O To protect and enhance the natural resources associated with creeks and the Delta, and their riparian zones, without jeopardizing the public health, safety, and welfare.

Goal 7-P To protect creeks and riparian zones identified as valuable from damage cause by nearby development activity.

Goal 7-T To ensure that new development pays its fair share of the costs related to increased runoff created by the development.

Goal 7-U To support the concept that existing development pays the cost of building and maintaining drainage improvements required to serve existing developed areas.

Goal 7-Y To ensure a high standard of fire protection, emergency, and medical response services for all citizens and properties throughout Contra Costa County.

Goal 7-AE To provide for the safe, efficient, and cost-effective removal of waste from residences, and businesses.

Policies

Policy 7-1 New development shall be required to pay its fair share of the cost of all existing public facilities it utilizes, based upon the demand for these facilities which can be attributed to new development.

Policy 7-2 New development, not existing residents, should be required to pay all costs of upgrading existing public facilities or constructing new facilities which are exclusively needed to serve new development.

Policy 7-21 At the project approval stage, the County shall require new development to demonstrate that adequate water quantity and quality can be provided. The County shall determine whether (1) capacity exists within the water system if a development project is built within a set period of time, or (2) capacity will be provided by a funded program or other mechanism. This finding will be based on information furnished or made available to the County from consultations with the appropriate water agency, the applicant, or other sources.

Policy 7-33 At the project approval stage, the County shall require new development to demonstrate that wastewater treatment capacity can be provided. The County shall determine whether (1) capacity exists within the wastewater treatment system if a development project is built within a set period of time, or (2) capacity will be provided by a funded program or other mechanism. This finding will be based on information furnished or made available to the County from consultations with the appropriate water agency, the applicant, or other sources.

Policy 7-44 New development should be required to finance its legal share of the full costs of drainage improvements necessary to accommodate projected peak flows due to the project. Reimbursement from subsequent developments which benefit from the added capacity may be provided.

Policy 7-64 New development shall pay its fair share of costs for new fire protection facilities and services.

General Plan Conservation Element

Goals and policies as set forth in the Conservation Element that are applicable to the proposed project include the following:

Goal 8-K To encourage the use of renewable resources where they are compatible with the maintenance of environmental quality.

Goal 8-L To reduce energy use in the County to avoid risks of air pollution and energy shortages which could prevent orderly development.

Policies

Policy 8-101 A safe, convenient and effective bicycle and trail system shall be created and maintained to encourage increased bicycle use and walking as alternatives to driving.

Policy 8-102 A safe and convenient pedestrian system shall be created and maintained in order to encourage walking as an alternative to driving.

Policy 8-113 New commercial and industrial projects exceeding 10,000 square feet of gross floor area shall incorporate measures to reduce or eliminate otherwise preventable air quality impacts and greenhouse gas (GHG) emissions. These measures may include, but are not limited to, limiting unnecessary truck and equipment idling, reducing on-site energy consumption, increasing on-site energy generation, reducing fugitive dust emissions, and contributing toward development of renewable energy projects in impacted communities.

General Plan Safety Element

Goals and policies as set forth in the Safety Element that are applicable to the proposed project include the following:

Goal 10-A To protect human life and reduce the potential for serious injuries from earthquakes; and to reduce the risks of property losses from seismic disturbances which could have severe economic and social consequences for the County as a whole.

Goal 10-B To reduce to a practical minimum injuries and health risks resulting from the effects of earthquake ground shaking on structures, facilities and utilities.

Goal 10-D To reduce to a practical minimum the potential for life loss, injury, and economic loss due to liquefaction-induced ground failure, levee failure, large lateral land movements toward bodies of water, and consequent flooding; and to mitigate the lesser consequences of liquefaction.

Policies

Policy 10-3 Because the region is seismically active, structures for human occupancy shall be designed to perform satisfactorily under earthquake conditions (see Table 10-6).

Policy 10-10 Policies regarding liquefaction shall apply to other ground failures which might result from ground shaking but which are not subject to such well-defined field and laboratory analysis.

General Plan Noise Element

Goals and policies as set forth in the Noise Element that are applicable to the proposed project include the following:

Goal 11-A To improve the overall environment in the County by reducing annoying and physically harmful levels of noise for existing and future residents and for all land uses.

Goal 11-C To ensure that new developments will be constructed so as to limit the effects of exterior noise on the residents.

Policies

Policy 11-1 New projects shall be required to meet acceptable exterior noise level standards as established in the Noise and Land Use Compatibility Guidelines contained in Figure 11-6. These guidelines, along with the future noise levels shown in the future noise contours maps, should be used by the county as a guide for evaluating the compatibility of “noise-sensitive” projects in potentially noisy areas.

Policy 11-2 The standard for outdoor noise levels in residential areas is a DNL of 60 dB. However, a DNL of 60 dB or less may not be achievable in all residential areas due to economic or aesthetic constraints. One example is small balconies associated with multi-family housing. In this case, second and third story balconies may be difficult to control to the goal. A common outdoor use area that meets the goal can be provided as an alternative.

Policy 11-4 Title 24, Part 2, of the California Code of Regulations requires that new multiple family housing projects, hotels, and motels exposed to a DNL of 60 dB or greater have a detailed acoustical analysis describing how the project will provide an interior DNL of 45 dB or less. The County also shall require new single-family housing projects to provide for an interior DNL of 45 dB or less.

Policy 11-8 Construction activities shall be concentrated during the hours of the day that are not noise-sensitive for adjacent land uses and should be commissioned to occur during normal work hours of the day to provide relative quiet during the more sensitive evening and early morning periods.

Contra Costa County Ordinance Code

The site is located within the P-1 Zoning District (Chapter 2, Project Description, Exhibit 2-5) on the County's Zoning Map.

As stated in Section 84-66.204, the intent of the P-1 Zoning District is to allow "diversification in the relationship of various uses, buildings, structures, lot sizes and open space while insuring (*sic*) substantial compliance with the General Plan and the intent of the Ordinance Code in requiring adequate standards necessary to satisfy the requirements of the public health, safety and general welfare. These standards shall be observed without unduly inhibiting the advantages of large-scale or special area planning."[4]

The P-1 Zoning District is intended to support large-scale integrated development in compliance with the General Plan designations. Ordinance Code, Title 8: Zoning,[5] allows for the following uses in the P-1 Zoning District:

- Any land uses permitted by an approved final development plan that are in harmony with each other, serve to fulfill the function of the planned unit development, and are consistent with the General Plan.
- A detached single-family dwelling on each legally established lot and the accessory structures and uses normally auxiliary to it.
- Single-room occupancy facilities that meet the requirements of Chapter 82-48.
- In a P-1 Zoning District for which residential uses are approved, the following uses are allowed:
  - Accessory dwelling units complying with the provisions of Chapter 82-24.
  - Supportive housing, operated by a person with all required State and local agency approvals and licenses, where not more than six persons reside.
  - Transitional housing, operated by a person with all required State and local agency approvals and licenses, where not more than six persons reside.
- Commercial cannabis activities that meet the requirements of Chapter 88-28.

[4] Contra Costa County. Contra Costa County Ordinance Code, Section 84-66.204 - Intent and purpose. Website: https://library.municode.com/ca/contra_costa_county/codes/ordinance_code?nodeId=TIT8ZO_DIV84LAUSDI_CH84-66PLUNDI. Accessed April 2, 2020.

[5] Contra Costa County. Contra Costa County Ordinance Code, Title 8: Zoning, Ch. 84-66. 2020. Website: https://library.municode.com/ca/contra_costa_county/codes/ordinance_code?nodeId=TIT8ZO_DIV84LAUSDI_CH84-66PLUNDI. Accessed August 25, 2020.

Table 3.10-1 identifies the development standards for land uses, structures, and site development within the P-1 Zoning District for Heavy Industrial and Light Industrial.

Table 3.10-1: North Richmond P-1 Zoning District Development Standards for Heavy Industrial and Light Industrial

Development Feature	Heavy Industrial Requirement	Light Industrial Requirement
Minimum Lot Area	10 acres (per Section 84-66.602)	7,500 square feet
Minimum Lot Width	N/A	N/A
Maximum Building Height	40 feet	50 feet
Floor Area Ratio	0.67	0.67
Maximum Lot Coverage	30 percent	50 percent
Parking	1 parking space/1,000 square feet (warehouse) 5 parking spaces/1,000 square feet (office)	1 parking space/1,000 square feet (warehouse) 5 parking spaces/1,000 square feet (office)
Minimum Landscaped Area	10 percent	10 percent

Notes:
* Pursuant to the North Richmond P-1 Development Standards, approved February 11, 2003, with additional mitigation for cumulative traffic impacts, the floor area ratio (FAR) may be increased to 0.67.
* Pursuant to the North Richmond P-1 Development Standards, approved February 11, 2003, 50 percent lot coverage is allowed for Light Industrial uses within Heavy Industrial land use designation.

Source: Contra Costa County North Richmond P-1 Development Standards. Approved February 11, 2003.

Section 84-66.1402 of the Ordinance Code establishes the following Design Objectives for the P-1 Zoning District:

- Building bulk, height, land coverage, visual appearance from adjacent land, and design compatibility with existing adjoining development and land which will remain, shall be considered, and controlled.
- A development's design should successfully integrate individual buildings and building groups with the surrounding development, other physical features in the area, and existing development which will remain.
- The design of structures should provide for harmonious composition of mass, scale, color, and textures, with special emphasis on the transition from one building type to another, termination of groups of structures, relationships to streets, exploitation of views, and integration of spaces and building forms with the topography of the site and the urban or suburban character of the area.
- Provisions are to be made for an efficient, direct and convenient system of pedestrian circulation, together with landscaping and appropriate treatment of any public areas or lobbies.

- Off-street parking and loading areas should be integrated into the overall vehicular circulation system.

82-16.406 Required number of parking spaces

a) The following number of off-street parking spaces must be provided for the following land uses:

(28) Warehouses and other storage buildings: One space per every one thousand square feet of gross floor area.

b) For any use not specified in this section, the number of parking spaces that must be provided is the number of spaces required to be provided for the most similar land use specified in this section, as determined by the zoning administrator.

Bicycle Parking

Section 82-16.412 of the Ordinance Code sets forth the amounts of long-term and short-term bicycle parking that a project must provide. The Ordinance Code requires an industrial building to provide one space for each 15,000 square feet of floor area, or two spaces (whichever is greater) for long-term parking, and one space for each 20,000 square feet of floor area, or two spaces (whichever is greater) for short-term parking.[6] Therefore, the proposed project would be required to provide 37 long-term and 28 short-term spaces, for a total of 65 bicycle parking spaces.

3.10.4 - Impacts and Mitigation Measures

Significance Criteria

According to the California Environmental Quality Act (CEQA) Guidelines Appendix G Environmental Checklist, to determine whether impacts related to land use and planning are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

a) Physically divide an established community?

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?

Approach to Analysis

Analysis in this section focuses on whether project implementation would physically divide an established community and whether the proposed project would conflict with land use plans, policies, or regulations adopted to avoid or mitigate an environmental effect. Conflicts and inconsistencies with a policy, in and of themselves, do not constitute significant environmental impacts, unless such conflicts or inconsistencies result in direct physical environmental impacts. Physical project impacts are discussed throughout Chapter 3, Environmental Impact Analysis, of this

[6] Contra Costa County. Contra Costa County Ordinance Code. 2021. Chapter 82-16.412—Bicycle Parking. Website: https://library.municode.com/ca/contra_costa_county/codes/ordinance_code?nodeId=TIT8ZO_DIV82GERE_CH82-16OREPA_82-16.412BIPA. Accessed April 17, 2021.

Draft Environmental Impact Report (Draft EIR). The potential for land use impacts was assessed through review of applicable land use policy documents.

Specific Thresholds of Significance

For purposes of this analysis, the following thresholds are used to evaluate the significance of land use and planning impacts resulting from implementation of the proposed project:

- Development resulting in physically dividing the surrounding community
- Development conflicting with the General Plan or the Ordinance Code

Impact Evaluation

Divide an Established Community

Impact LAND-1: The proposed project would not physically divide an established community.

Construction

Impacts related to physical division of an established community are limited to operational impacts. No respective construction impacts would occur.

Operation

The physical division of an already established community typically refers to construction of a linear feature, such as an interstate, railroad tracks, or the removal of a means of access that would impact mobility within an existing community and an outlying area. The proposed project would include the construction of three industrial warehouse buildings, landscaping, parking, and off-site improvements within unincorporated Contra Costa County. The project site currently contains the foundations of several former residential structures, barns, and greenhouse buildings, but no structures remain on-site. Fallow agricultural land is found on-site, consisting primarily of non-native grasses, herbaceous plants, forbs, and several trees. The development of the proposed warehouse buildings would not impair access to any established community, impede travel or otherwise constitute division of an established community. The off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would similarly not impair access to any established community, impede travel or otherwise constitute division of an established community. Therefore, impacts would be less than significant.

Level of Significance

Less than significant impact.

Conflict with Applicable Plans, Policies, or Regulations

Impact LAND-2: The proposed project would not 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.

Development of the proposed project would result in a significant impact if it would conflict with applicable land use plans and policies of the General Plan or the Ordinance Code that were adopted

for the purpose of avoiding or mitigating an environmental effect. A policy inconsistency is considered a significant adverse impact only if the inconsistency would result in a significant adverse physical impact based on the established significance criterion. Consistency of the proposed project with applicable land use plans and policies, pursuant to CEQA Guidelines Section 15125(d), is evaluated below. Consistency with the County's adopted land use compatibility standards specifically with respect to noise are evaluated in Section 3.11, Noise.

Construction

Impacts related to consistency with applicable land use plans and policies are limited to operational impacts. No respective construction impacts would occur.

Operation

Contra Costa County General Plan Consistency

The General Plan designates the project site as Light Industry (LI) and Heavy Industry (HI). Pursuant to the General Plan Land Use Element, the Light Industry designation allows for a FAR between 0.25 and 0.67 and maximum site coverage is allowed up to 50 percent with an average of 60 employees per gross acre. The HI designation allows a FAR between 0.1 and 0.4, and maximum site coverage is allowed up to 30 percent with an average of 45 employees per gross acre. The proposed project would develop three 1-story industrial warehouse buildings with associated parking and landscaping. The proposed project would not require a General Plan Amendment and would be consistent with the LI and HI land use designations.

The proposed project would be consistent with the General Plan goals and policies. Table 3.10-2 summarizes the proposed project's consistency with the applicable policies of the General Plan adopted for various land use planning reasons, including the purpose of avoiding or mitigating an environmental impact.

Table 3.10-2: General Plan Consistency Analysis

Element	Goal/Objective/Policy		Consistency Determination
	No.	Text	
Chapter 3—Land Use Element	Goal 3-A	To coordinate land use with circulation, development of other infrastructure facilities, and protection of agriculture and open space, and to allow growth and the maintenance of the County's quality of life. In such an environment, all residential, commercial, industrial, recreational, and agricultural activities may take place in safety, harmony, and to mutual advantage.	**Consistent:** The proposed project would construct three industrial warehouses, which would be compatible with the surrounding land use designations of Heavy Industry and Light Industry and the industrial nature of the surrounding area.
	Goal 3-C	To encourage aesthetically and functionally compatible development which reinforces the physical character and desired images of the County.	**Consistent:** The proposed project would construct three industrial warehouse buildings in an industrial area of unincorporated Contra Costa County. See Impact AES-3.

Element	Goal/Objective/Policy		Consistency Determination
	No.	Text	
	Goal 3-D	To provide for a range and distribution of land uses that serve all social and economic segments of the county and subregions.	**Consistent:** The proposed project's construction would generate employment opportunities for local candidates. In its operation, the proposed project would provide employment opportunities.
	Goal 3-F	To permit urban development only in locations of the County within identified outer boundaries of urban development where public service delivery systems that meet applicable performance standards are provided or committed.	**Consistent:** Public Service delivery systems are adequate to serve the proposed project. Refer to Section 3.12, Public Services, for further analysis.
	Goal 3-J	To encourage a development pattern that promotes the individuality and unique character of each community in the County.	**Consistent:** The proposed project would be consistent with the General Plan, zoning, and existing and proposed development patterns in the project vicinity. See Impact AES-3.
	Policy 3-5	New development within unincorporated areas of the County may be approved, providing growth management standards and criteria are met or can be assured of being met prior to the issuance of building permits in accordance with the growth management.	**Consistent:** Once operational, the proposed project is expected to employ up to 573 people on-site for daily operation at all three warehouses. It is anticipated that project employees would be generated from the existing local job market. The proposed project is an infill development, and the surrounding area is largely industrial. Infrastructure and services would be expanded to serve the proposed project without significant excess capacity, and thus would not encourage additional growth beyond that already planned for in the General Plan.
	Policy 3-6	Development of all urban uses shall be coordinated with provision of essential community services or facilities including, but not limited to, roads, law enforcement and fire protection services, schools, parks, sanitary facilities, water and flood control.	**Consistent:** The proposed project would provide essential community services and facilities to future residents. More information can be found in Section 3.12, Public Services; Section 3.13, Transportation; and Section 3.14, Utilities and Service Systems.
	Policy 3-7	The location, timing and extent of growth shall be guided through capital improvements programming and financing (i.e., a capital improvement program, assessment districts, impact fees, and developer contributions) to prevent infrastructure, facility and service deficiencies.	**Consistent:** The project applicant would be required to pay development impact fees to prevent infrastructure, facility, and service deficiencies.

Element	Goal/Objective/Policy		Consistency Determination
	No.	Text	
	Policy 3-18	Flexibility in the design of projects shall be encouraged in order to enhance scenic qualities and provide for a varied development pattern.	**Consistent:** The proposed project would develop three 1-story industrial warehouse buildings within an industrial area of unincorporated Contra Costa County.
	Policy 3-41	The continuing orderly development of research facilities, regional offices, and light industrial uses shall be encouraged in designated areas in order to improve the economic base and provide local employment.	**Consistent:** The project site is designated Heavy Industry and Light Industry and the proposed project would develop three industrial warehouse buildings. Industrial warehouse buildings are consistent with the Heavy Industrial and Light Industrial land use designations.
	Policy 3-42	Industrial development shall be concentrated in select locations adjacent to existing major transportation corridors and facilities.	**Consistent:** The proposed project is located near Richmond Parkway and I-580, both of which are key transportation corridors. For further analysis refer to Section 3.13, Transportation.
Chapter 4—Growth Management Element	Goal 4-A	To provide for the levels of growth and development depicted in the Land Use Element, while preserving and extending the quality of life through the provision of public facilities and ensuring traffic levels of services necessary to protect the public health, safety, and welfare.	**Consistent:** The proposed project is consistent with growth anticipated in the General Plan. The proposed project would ensure quality of life be preserved by adhering to regulations that maintain the provision of adequate public facilities and traffic levels of service necessary to protect public health, safety, and welfare. See Policy 4-3 and Goal 5-E analysis for discussion regarding traffic levels of service.
	Policy 4-5	For the purpose of applying the Traffic Level of Service standards consistent with Measure C-1988 only, unincorporated areas subject to the growth management standards of this Element shall be characterized as Central Business District, Urban, Suburban, Semi-rural and Rural as depicted in Figure 4-2.	**Consistent:** The surrounding area of the project site is urban and utilized for industrial use.
Chapter 5—Transportation and Circulation Element	Goal 5-D	To maintain and improve air quality above air quality standards.	**Consistent:** The proposed project would be consistent with the 2017 Clean Air Plan. Refer to Section 3.2, Air Quality, for further details.

Element	Goal/Objective/Policy		Consistency Determination
	No.	Text	
	Goal 5-E	To permit development only in locations of the County where appropriate traffic Level of Service (LOS) standards are ensured.	**Consistent:** As discussed in greater detail in the Transportation Impact Assessment (TIA), the results of the LOS calculations indicate that under Existing with Project Conditions, the majority of the study intersections would operate at acceptable LOS D or better, except for seven intersections that would operate at LOS E or F (Appendix I). MM TRANS-1, which requires the applicant to prepare and implement a Transportation Demand Management (TDM) Program, would assist in reducing delays at the seven intersections that operate at LOS E or F. Refer to Section 3.13, Transportation, for further details. The operation of the seven intersections at LOS E or F is not a significant adverse physical effect on the environment. The proposed project would implement improvement measures, which would result in a reduction of net delay for two intersections under the existing plus project conditions compared to existing conditions.
	Goal 5-G	To provide access to new development while minimizing conflict between circulation facilities and land uses.	**Consistent:** The proposed project is consistent with the land use designation and would be accessible via three driveways Fred Jackson Way and three driveways on Brookside Drive. The proposed project would include the construction of a sidewalk and bicycle lane along the project site frontage with Brookside Drive. The proposed project design would not eliminate bicycle or pedestrian facilities that connect to the area circulation system, would not conflict with existing or planned bicycle or pedestrian facilities, and would not create a hazardous condition for bicyclists or pedestrians. MM TRANS-2a's requirement for installation of a median and bulb outs on Fred Jackson Way along the proposed project frontage, stop signs at the proposed project driveways, and signage prohibiting vehicles from turning left out of the proposed project driveways, would discourage neighborhood cut-through traffic by directing exiting trucks to Richmond Parkway.

Element	Goal/Objective/Policy		Consistency Determination
	No.	Text	
	Goal 5-I	To encourage use of transit.	**Consistent:** The proposed project would include a sidewalk and bicycle lane along the project site frontage with Brookside Drive and on-site bicycle parking, which may encourage the usage of walking and bicycling to/from the site by employees. The project site is located near a Class I bikeway along the north side of Wildcat Creek and along Richmond Parkway. The project site is also located about 2.8 miles away from the Richmond Bay Area Rapid Transit (BART) station and about 0.4 mile from the nearest AC Transit stop. MM TRANS-1, which requires the applicant to prepare and implement a TDM Program, would assist in encouraging transit use.
	Goal 5-L	To reduce GHG emissions from transportation sources through provision of transit, bicycle, and pedestrian facilities.	**Consistent:** The proposed project would include the construction of a sidewalk and bicycle lane on the Brookside Drive frontage. The TDM Program required by MM TRANS-1 would assist in encouraging transit and other GHG reducing travel modes and programs.
	Policy 5-3	Transportation facilities serving new urban development shall be linked to and compatible with existing and planned roads, bicycle facilities, pedestrian facilities and pathways of adjoining areas, and such facilities shall use presently available public and semi-public rights of way where feasible.	**Consistent:** Bicycle and pedestrian access for the project site will be provided via the construction of a sidewalk and bicycle lane on the Brookside Drive frontage and improvements along Fred Jackson Way as part of the approved Fred Jackson Way First Mile/Last Mile Project. The project site is located near a Class I bikeway along the north side of Wildcat Creek and along Richmond Parkway. The proposed project design would not eliminate bicycle or pedestrian facilities that connect to the area circulation system, would not conflict with existing or planned bicycle or pedestrian facilities, and would not create a hazardous condition for bicyclists or pedestrians.

Element	Goal/Objective/Policy		Consistency Determination
	No.	Text	
	Policy 5-4	Development shall be allowed only when transportation performance criteria are met and necessary facilities and/or programs are in place or committed to be developed within a specified period of time.	**Consistent:** MM TRANS-1 requires the applicant to prepare and implement a TDM Program. The TDM Program shall be submitted for County review and approval prior to the issuance of the certificate of occupancy. The strategies in the TDM are focused on increasing bicycle commuting, commuting by carpool and vanpool, and better connecting the project site to transit options. The proposed project would include a sidewalk and bicycle lane along the project site frontage with Brookside Drive and on-site bicycle parking, which may encourage the usage of walking and bicycling to/from the site by employees. The project site is located near a Class I bikeway along the north side of Wildcat Creek and along Richmond Parkway. The project site is also located about 2.8 miles away from the Richmond BART station and about 0.4 mile from the nearest AC Transit stop. Other improvements identified MM TRANS-2a, MM TRANS-2b, MM TRANS-4a, MM TRANS-4b would need to be installed prior to the issuance of the certificate of occupancy.
	Policy 5-13	The use of pedestrian and bicycle facilities shall be encouraged. Proper facilities shall be designed to accommodate bikes, pedestrians, and transit.	**Consistent:** The proposed project would include a sidewalk and bicycle lane along the project site frontage with Brookside Drive and on-site bicycle parking,
	Policy 5-15	Adequate lighting shall be provided for pedestrian, bicyclist, and vehicular, safety, consistent with neighborhood desires.	**Consistent:** The proposed project design includes lighting along the sidewalks.
	Policy 5-16	Curbs and sidewalks shall be provided in appropriate areas.	**Consistent:** The proposed project design includes sidewalks and curbs along the Brookside Drive frontage.
	Policy 5-17	Emergency response vehicles shall be accommodated in development project design.	**Consistent:** Emergency vehicle access is provided by the proposed project driveways and the internal roadways. The internal roadways encompass all sides of all buildings, providing direct access in case of emergencies.

Element	Goal/Objective/Policy		Consistency Determination
	No.	Text	
	Policy 5-20	New development (including redevelopment and rehabilitation projects) shall contribute funds and/or institute programs to reduce parking demand and/or provide adequate parking.	**Consistent:** The proposed project would provide adequate parking in compliance with the requirements of the P-1 North Richmond Zoning District Development Standards.
	Policy 5-21	New development shall contribute funds and/or institute programs to provide adequate bicycle and pedestrian facilities where feasible.	**Consistent:** The project applicant would be required to pay development impact fees to prevent infrastructure, facility, and service deficiencies.
	Policy 5-24	Use of alternative forms of transportation, such as transit, bike and pedestrian modes, shall be encouraged in order to provide basic accessibility to those without access to a personal automobile and to help minimize automobile congestion and air pollution.	**Consistent:** The proposed project design would include a sidewalk and bicycle lane along the Brookside Drive frontage. The project site is located near a Class I bikeway along the north side of Wildcat Creek and along Richmond Parkway. The project site is also located approximately 2.8 miles away from the Richmond BART station and approximately 0.4 mile from the nearest AC Transit stop. MM TRANS-1, which requires the applicant to prepare and implement a TDM Program, would assist in encouraging the use of alternative forms of transportation.
	Policy 5-33	Landscaping and maintenance of street medians and curb areas shall be provided where appropriate.	**Consistent:** The proposed project would include the installation of a median and bulb outs on Fred Jackson Way along the proposed project frontage (MM TRANS-2). The proposed project would also include improvements along Brookside Drive, such as sidewalks, curbs, gutters, and landscaping.
Chapter 7—Public Facilities Element	Goal 7-F	To assure potable water availability in quantities sufficient to serve existing and future residents.	**Consistent:** Water would be provided to the project site by the East Bay Municipal Utility District (EBMUD). See Impact UTIL-2.
	Goal 7-J	To ensure that new development pays the costs related to the need for increased water system capacity.	**Consistent:** Water would be provided to the project site by the EBMUD. The proposed project would also include water efficient applicants consistent with the California Green Building Code, which would further reduce water demand. See Impact UTIL-2.

Element	Goal/Objective/Policy		Consistency Determination
	No.	Text	
	Goal 7-N	To assure that new development pays the costs related to the need for increased sewer system capacity.	**Consistent:** The West County Wastewater District (WCWD) Water Pollution Control Plant would have sufficient capacity to serve all aspects of the proposed project. See Impact UTIL-3.
	Goal 7-O	To protect and enhance the natural resources associated with creeks and the Delta, and their riparian zones, without jeopardizing the public health, safety, and welfare.	**Consistent:** There are no creeks or riparian zones on the project site. No wetlands/waters of the United States or State were found on the property. Refer to Section 3.3, Biological Resources, for further details.
	Goal 7-P	To protect creeks and riparian zones identified as valuable from damage cause by nearby development activity.	**Consistent:** There are no creeks or riparian zones on the project site. No wetlands/waters of the United States or State were found on the property. Wildcat Creek is located approximately 400 feet south of the project site; however, the project site does not border the creek corridor.
	Goal 7-T	To ensure that new development pays its fair share of the costs related to increased runoff created by the development.	**Consistent:** The proposed project would be required to pay its fair share of costs for fire protection services as needed.
	Goal 7-U	To support the concept that existing development pays the cost of building and maintaining drainage improvements required to serve existing developed areas.	**Consistent:** The proposed project would be required to pay its fair share of costs for fire protection services as needed.
	Goal 7-Y	To ensure a high standard of fire protection, emergency, and medical response services for all citizens and properties throughout Contra Costa County.	**Consistent:** The proposed project would not cause a delay in response time for fire protection, emergency, and medical services in the County.
	Goal 7-AE	To provide for the safe, efficient, and cost-effective removal of waste from residences, and businesses.	**Consistent:** Project operation would comply with applicable State and local regulations related to solid waste such as the California Integrated Waste Management Act and Division 418, Refuse, of the Contra Costa County Ordinance Code.

Element	Goal/Objective/Policy		Consistency Determination
	No.	Text	
	Policy 7-1	New development shall be required to pay its fair share of the cost of all existing public facilities it utilizes, based upon the demand for these facilities, which can be attributed to new development.	**Consistent:** The proposed project would be required to pay its fair share of costs for fire protection services as needed.
	Policy 7-2	New development, not existing residents, should be required to pay all costs of upgrading existing public facilities or constructing new facilities which are exclusively needed to serve new development.	**Consistent:** The proposed project would be required to pay its fair share of costs for fire protection services as needed.
	Policy 7-21	At the project approval stage, the County shall require new development to demonstrate that adequate water quantity and quality can be provided. The County shall determine whether (1) capacity exists within the water system if a development project is built within a set period of time, or (2) capacity will be provided by a funded program or other mechanism. This finding will be based on information furnished or made available to the County from consultations with the appropriate water agency, the applicant, or other sources.	**Consistent:** Adequate water quantity and quality can be provided to the proposed project. Refer to Section 3.14, Utilities and Service Systems, for further details.
	Policy 7-33	At the project approval stage, the County shall require new development to demonstrate that wastewater treatment capacity can be provided. The County shall determine whether (1) capacity exists within the wastewater treatment system if a development project is built within a set period of time, or (2) capacity will be provided by a funded program or other mechanism. This finding will be based on information furnished or made available to the County from consultations with the appropriate water agency, the applicant, or other sources.	**Consistent:** There is enough wastewater treatment capacity to serve the proposed project. Refer to Section 3.14, Utilities and Service Systems, for further details.

Element	Goal/Objective/Policy		Consistency Determination
	No.	Text	
	Policy 7-44	New development should be required to finance its legal share of the full costs of drainage improvements necessary to accommodate projected peak flows due to the project. Reimbursement from subsequent developments, which benefit from the added capacity may be provided.	**Consistent:** The proposed project would finance its legal share of the costs of needed drainage improvements. Drainage improvements would also be constructed on the project site.
	Policy 7-64	New development shall pay its fair share of costs for new fire protection facilities and services.	**Consistent:** The proposed project would be required to pay its fair share of costs for fire protection services as needed.
	Policy 7-64	New development shall pay its fair share of costs for new fire protection facilities and services.	**Consistent:** The proposed project would be consistent and pay its fair share of costs for fire protection services as needed.
Chapter 8—Conservation Element	Goal 8-K	To encourage the use of renewable resources where they are compatible with the maintenance of environmental quality.	**Consistent:** The proposed project would install a photo voltaic (PV) system that would provide 100 percent of building electricity demand.Additionally, overall, the proposed buildings would comply with Title 24 solar requirements and would be constructed to support a roof-mounted solar system.
	Goal 8-L	To reduce energy use in the County to avoid risks of air pollution and energy shortages which could prevent orderly development.	**Consistent:** The proposed project would comply with the CaliforniaBuilding Code and the 2019 Building Energy Efficiency Standards. The proposed project would also be Leadership in Energy and Environmental Design (LEED™) certified and would include insulated office spaces, warehouse motion-sensor lighting, and low power density warehouse lighting.
	Policy 8-101	A safe, convenient and effective bicycle and trail system shall be created and maintained to encourage increased bicycle use and walking as alternatives to driving.	**Consistent:** The proposed project design would include a sidewalk and bicycle lane along the Brookside Drive frontage. The project site is located near a Class I bikeway along the north side of Wildcat Creek and along Richmond Parkway.
	Policy 8-102	A safe and convenient pedestrian system shall be created and maintained in order to encourage walking as an alternative to driving.	**Consistent:** The proposed project would include a sidewalk along the Brookside Drive frontage.

Element	Goal/Objective/Policy		Consistency Determination
	No.	Text	
	Policy 8-113	New commercial and industrial projects exceeding 10,000 square feet of gross floor area shall incorporate measures to reduce or eliminate otherwise preventable air quality impacts and greenhouse gas (GHG) emissions. These measures may include, but are not limited to, limiting unnecessary truck and equipment idling, reducing on-site energy consumption, increasing on-site energy generation, reducing fugitive dust emissions, and contributing toward development of renewable energy projects in impacted communities.	**Consistent:** The conditions of approval would require future tenants to obtain zero emission vehicles and trucks for their fleets. They would also require the property owner/tenant/lessee to ensure that all on-site equipment and vehicles (e.g., yard hostlers, yard equipment, forklifts, yard trucks and tractors, and pallet jacks) used within the project site are zero emission from start of operations.
Chapter 10—Safety Element	Goal 10-A	To protect human life and reduce the potential for serious injuries from earthquakes; and to reduce the risks of property losses from seismic disturbances which could have severe economic and social consequences for the County as a whole.	**Consistent:** The proposed project would comply with all applicable building codes to ensure safety in the event of an earthquake. Refer to Section 3.6 Geology and Soils, for further details.
	Goal 10-B	To reduce to a practical minimum injuries and health risks resulting from the effects of earthquake ground shaking on structures, facilities, and utilities.	**Consistent:** The proposed project would be consistent with all applicable building standards to reduce the effects of earthquakes.
	Goal 11-A	To improve the overall environment in the County by reducing annoying and physically harmful levels of noise for existing and future residents and for all land uses.	**Consistent:** With the incorporation of MM NOI-1, the proposed project would not expose excessive noise to those on the project site or to nearby land uses. Refer to Section 3.11, Noise, for further details.
Chapter 11—Noise Element	Policy 11-2	The standard for outdoor noise levels in residential areas is a Day/Night Noise Level (DNL) of 60 decibel (dB). However, a DNL of 60 dB or less may not be achievable in all residential areas due to economic or aesthetic constraints. One example is small balconies associated with multi-family housing. In this case, second and third story balconies may be difficult to control to the goal. A common outdoor use area that meets the goal can be provided as an alternative.	**Consistent:** With the incorporation of MM NOI-1, the proposed project would meet the acceptable exterior noise level standards established in the Noise and Land Use Compatibility Guidelines.

Contra Costa County Zoning Code Consistency

The project site is currently zoned as (P-1) by the Contra Costa County Zoning Map. As stated in Chapter 84-66.204, the intent of the P-1 District is to allow "diversification in the relationship of various uses, buildings, structures, lot sizes and open space while ensuring substantial compliance with the General Plan and the intent of the County code in requiring adequate standards necessary to satisfy the requirements of the public health, safety and general welfare." These standards shall be observed without unduly inhibiting the advantages of large-scale or special area planning.[7] Land uses permitted in the P-1 District are "any land uses permitted by an approved development plan that are in harmony with each other, serve to fulfill the function of the planned unit development, and are consistent with the General Plan."

The proposed project would be consistent with the General Plan's Heavy Industrial and Light Industrial designations and the project applicant has submitted a development plan for County approval. As shown in Table 3.10-1, the development standards for Heavy Industrial in the P-1 District are: a minimum lot size of 10 acres for non-residential uses (Section 84-66.602); a maximum FAR of 0.67; a maximum site coverage of 30 percent; and a minimum landscaped area of 10 percent. The development standards for Light Industrial in the P-1 District are a minimum lot size of 7,500 square feet for non-residential uses; a maximum FAR of 0.67; a maximum site coverage of 50 percent; and a minimum landscaped area of 10 percent. Pursuant to the North Richmond P-1 Development Standards, approved February 11, 2003, with additional mitigation for cumulative traffic impacts, the FAR may be increased to 0.67 and 50 percent lot coverage is allowed for Light Industrial uses within Heavy Industrial land use designation. The project site is 31.48 acres and would have an FAR of 0.41, a site coverage of approximately 41 percent, and a landscaped area of about 9.45 percent; therefore, the proposed project would be generally consistent with the P-1 District's development standards for the Heavy Industrial and Light Industrial designations.

Parking

Based on the requirements outlined in Section 82-16.406 of the Ordinance Code and the P-1 District parking requirements in Heavy Industrial and Light Industrial designations, the proposed project would be required to provide one parking space per 1,000-gross-square-feet of warehouse and five parking spaces per 1,000-gross-square-feet of office. At 527,760 square feet of warehouse and 27,777 square feet of office between the three buildings, the total amount of parking required would be 667 parking spaces. The proposed project would provide a total of 438 auto parking spaces and a total of 266 trailer parking spaces and thus would satisfy parking requirements.

Bicycle Parking

The proposed project would include a new bicycle lane along the Brookside Drive project site frontage and would include 10 bicycle parking spaces within each of the three buildings.

Section 82-16.412 of the Ordinance Code sets forth the amounts of long-term and short-term bicycle parking that a project must provide. The Ordinance Code requires an industrial building to provide one space for each 15,000 square feet of floor area, or two spaces (whichever is greater) for long-

[7] Contra Costa County. Contra Costa County Ordinance Code Section 84-66.204-Intent and Purpose. Website: https://library.municode.com/ca/contra_costa_county/codes/ordinance_code?nodeId=TIT8ZO_DIV84LAUSDI_CH84-66PLUNDI. Accessed July 16, 2021

term parking, and one space for each 20,000 square feet of floor area, or two spaces (whichever is greater) for short-term parking.[8] Therefore, the proposed project would be required to provide 37 long-term and 28 short-term spaces, for a total of 65 bicycle parking spaces. The proposed project would provide 30 bicycle parking spaces. Furthermore, as required by MM TRANS-4b, prior to the issuance of the certificate of occupancy, the applicant shall install long-term bicycle parking consistent with County Code Section 82-16.412 and other bicycle amenities (showers, changing rooms, bike repair tools/station, etc.) in a convenient location. As such, the proposed project would be consistent with Ordinance Code Section 82-16.412.

Overall, the proposed project would not conflict with applicable land use plans, policies, or regulations of the General Plan or Ordinance Code that were adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, impacts would be less than significant.

Level of Significance

Less than significant impact.

3.10.5 - Cumulative Impacts

The geographic scope of the cumulative land use analysis is the unincorporated area of the County with a focus on the area surrounding the project site. Land use decisions for both the proposed project and for some of the other cumulative projects listed in Chapter 3, Environmental Impact Analysis, Table 3-1, are made at the County level. Some of the projects listed in Table 3-1 are in the City of Richmond and the City of San Pablo, and land use decisions for those projects are made at the City level.

Development within unincorporated Contra Costa County is governed by the General Plan and the Ordinance Code, which ensure logical and orderly development and require discretionary review to ensure that projects do not result in environmental impacts due to inconsistency with the General Plan and other land use planning regulations. This would minimize any cumulative impact related to division of an established community.

Development in unincorporated Contra Costa County would be required to demonstrate consistency with the General Plan and applicable codes, ordinances, and policies. Development in the City of Richmond would be required to demonstrate consistency with the City of Richmond General Plan and applicable codes, ordinances, and policies. Development in the City of San Pablo would be required to demonstrate consistency with the City of San Pablo General Plan and applicable codes, ordinances, and policies. This would ensure that these cumulative projects comply with applicable planning regulations. Given the above, there would be a less than significant cumulative impact related to land use and planning.

Level of Cumulative Significance

Less than significant impact.

[8] Contra Costa County Ordinance Code. 2020. Chapter 82-16.412—Bicycle Parking. Website: https://library.municode.com/ca/contra_costa_county/codes/ordinance_code?nodeId=TIT8ZO_DIV82GERE_CH82-16OREPA_82-16.412BIPA. Accessed August 30, 2020.

3.11 - Noise

3.11.1 - Introduction

This section describes existing conditions related to noise and vibration in the project area as well as the regulatory framework. This section also evaluates the possible impacts related to noise and vibration that could result from implementation of the project. For purposes of this analysis, noise impacts will be compared to the thresholds of Contra Costa County (County), as this jurisdiction contains receptors that could be potentially affected by project construction and operation. Information included in this section is based on the Contra Costa County General Plan (General Plan), the project-specific traffic analysis report included in Appendix I, and project-specific noise modeling results (noise modeling data is provided in Appendix H). No public comments were received during the Notice of Preparation (NOP) comment period related to noise.

3.11.2 - 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.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level. Noise levels diminish or attenuate as distance from the source increases based on an inverse square rule, depending on how the noise source is physically configured. Noise levels from a single-point source, such as a single piece of construction equipment at ground level, attenuate at a rate of 6 dB for each doubling of distance (between the single-point source of noise and the noise-sensitive receptor of concern). Heavily traveled roads with few gaps in traffic behave as continuous line sources and attenuate roughly at a rate of 3 dB per doubling of distance.

Table 3.11-1 shows some representative noise sources and their corresponding noise levels in dBA.

Table 3.11-1: Typical A-Weighted Noise Levels

Indoor Noise Source	Noise Level (dBA)	Outdoor Noise Sources
(Threshold of Hearing in Laboratory)	0	—
Library	30	Quiet Rural Nighttime
Refrigerator Humming	40	Quiet Suburban Nighttime
Quiet Office	50	Quiet Urban Daytime
Normal Conversation at 3 feet	60	Normal Conversation at 3 feet
Vacuum Cleaner at 10 feet	70	Gas Lawn Mower at 100 feet
Hair Dryer at 1 foot	80	Freight Train at 50 feet
Food Blender at 3 feet	90	Heavy-duty Truck at 50 feet
Inside Subway Train (New York)	100	Jet Takeoff at 2,000 feet
Smoke Detector Alarm at 3 feet	110	Unmuffled Motorcycle
Rock Band near stage	120	Chainsaw at 3 feet
—	130	Military Jet Takeoff at 50 feet
—	140	(Threshold of Pain)

Notes:
dBA = A-weighted decibel
Source: Compiled by FirstCarbon Solutions (FCS) 2021.

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 typically 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 3.11-2 briefly defines these measurement descriptors and other sound terminology used in this section.

Table 3.11-2: 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.
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).

Term	Definition
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 FCS 2021.	

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 3.11-3 shows typical noise levels of construction equipment as measured at a distance of 50 feet from the operating equipment.

Table 3.11-3: 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
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

Type of Equipment	Impact Device? (Yes/No)	Specification Maximum Sound Levels for Analysis (dBA at 50 feet)
Pickup Truck	No	55

Notes:
dBA = A-weighted decibel
Source: 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 Groundborne Vibration

Groundborne vibration consists of rapidly fluctuating motion through a solid medium, specifically the ground, that 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. 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. 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 micro inch per second. To distinguish these vibration levels referenced in decibels from noise levels referenced in decibels, 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 rms velocity in units of decibels of 1 micro-inch 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 3.11-4.[1]

Table 3.11-4: 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
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

[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
Notes: PPV = peak particle velocity rms = root mean square VdB = vibration in decibels Source: Compilation of scientific and academic literature, generated by the Federal Transportation 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 property line
n = vibration attenuation rate through ground

According to Section 7 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

Ambient Noise

The existing noise environment in the vicinity of the project site was documented through a noise monitoring effort. Noise monitoring locations are shown in Exhibit 3.11-1, and the noise measurement data sheets are contained in Appendix H. A total of three short-term (15 minutes each) noise measurements were taken on Tuesday, November 12, 2019. These measurements provide a baseline of existing noise conditions.

Short-term Noise Measurements

The short-term noise measurement results are summarized in Table 3.11-5. The noise measurements were taken stating at 12:40 p.m. and ending at 1:40 p.m., during the midday peak noise hour. The noise measurements determined that daytime ambient noise levels range from 61.5 dBA to 67.8 dBA L_{eq} in the project vicinity, and is generally characterized by vehicle traffic on Brookside Drive (runs along project site's northern border) and Fred Jackson Way (runs along project site's western border) and school activities from Verde Elementary School.

Table 3.11-5: Existing Ambient Noise Levels in the Project Vicinity

Site Location	Location Description	L_{eq} (dBA)	Primary Noise Sources
ST-1	North of project site, 10 feet to Brookside Drive just south of Urban Tilth's entrance.	67.6	Traffic on Brookside Drive
ST-2	North of project site, 20 feet to center of Brookside Drive just south of 377 Brookside Drive residence.	67.8	Traffic on Brookside Drive
ST-3	South of project site, north side of Da Villa (a minor roadway of Fred Jackson Way and north of Verde Elementary School.	61.5	Traffic on Fred Jackson Way and school activity from Verde Elementary School

Notes:
L_{eq} = equivalent continuous sound level
dBA = A-weighted decibel
Source: FCS 2021.

[2] Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual. September.

Traffic Noise

In addition to the ambient noise measurements, existing traffic noise on local roadways in the areas surrounding the project site was calculated to quantify existing traffic noise levels, based on the existing traffic volumes included in Appendix I. Existing traffic noise levels along selected roadway segments in the project vicinity were modeled using the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108). Site-specific information is entered, such as roadway traffic volumes, roadway active width, source-to-receiver distances, travel speed, noise source and receiver heights, and the percentages of automobiles, medium trucks, and heavy trucks that the traffic is made up of throughout the day, amongst other variables. The modeled Average Daily Traffic (ADT) volumes were obtained by multiplying the PM peak-hour intersection traffic volumes from the project-specific traffic study by a factor of 10.[3] The model inputs and outputs, including the 60 dBA, 65 dBA, and 70 dBA L_{dn} traffic noise contour distances, are provided in Appendix H. A summary of the modeling results is shown in Table 3.11-6. The modeling results show that existing traffic noise levels on roadway segments adjacent to the project site range up to 63.1 dBA L_{dn} as measured at 50 feet from the centerline of the outermost travel lane.

Table 3.11-6: Existing Traffic Noise Levels in the Project Vicinity

Roadway Segment	ADT	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
Fred Jackson Way–Brookside Drive to Pittsburg Avenue	**8,700**	**< 50**	**< 50**	**90**	**63.1**
Brookside Drive–east of Fred Jackson Way	**3,200**	**< 50**	**< 50**	**< 50**	**57.2**
Fred Jackson Way–north of Brookside Drive	7,500	< 50	< 50	82	62.5
Fred Jackson Way–south of Pittsburg Avenue	7,600	< 50	< 50	< 50	59.1

Note:
ADT = Average Daily Traffic
dBA = A-weighted decibel
Ldn = day/night average sound level
Modeling results do not take into account mitigating features such as topography, vegetative screening, fencing, building design, or structure screening. Rather it assumes a worst case of having a direct line of site on flat terrain.
Bold values indicated roadway segments that are adjacent to the project site.
Source: FCS 2021.

Existing Stationary Noise Levels

Commercial and Industrial land uses in the project vicinity generate noise from typical parking lot activities, rooftop mechanical ventilation systems, and truck loading/unloading activities. These activities are point sources of noise that affect the existing noise environment. Parking lot activities, such as small delivery vehicle loading/unloading and engines starting or doors shutting, typically

[3] Fehr & Peers. 2021. CenterPoint North Richmond Development Transportation Impact Analysis. April 20.

generate approximately 60 dBA to 70 dBA L_{max} at 50 feet. Noise levels from typical commercial-grade mechanical ventilation equipment system operations can range up to approximately 60 dBA L_{eq} at a distance of 25 feet. Typical noise levels from large transport truck loading/unloading activities range from 70 dBA to 80 dBA L_{max} as measured at 50 feet. The existing ambient noise measurements results described above, with documented noise levels ranging from 61.5 dBA to 67.8 dBA L_{eq} and from 83.5 dBA to 88.9 dBA L_{max}, are representative of the daytime noise levels experienced from these types of activities in the project vicinity.

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.

Project Vicinity

The closest noise-sensitive land uses in the project vicinity are Verde Elementary School, which borders the site to the south and whose school buildings are located 225 feet southeast of the project site; and single-family residences located approximately 600 feet south of the project site, across Wildcat Creek. The structure located between the project site and the school is unoccupied and is proposed to be converted to an office. The residential type structures north of the project site across Brookside Drive are unoccupied and are proposed to be converted to warehouse land uses.

Project Site

There are no noise-sensitive land uses within the project site boundaries.

3.11.3 - 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 such 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

The proposed project is not subject to the regulation requirements of the FTA; however, the FTA's vibration impact criteria are accepted industry-wide as the best vibration impact guidelines when a local governing agency does not have vibration standards of its own.

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.[4] The FTA guidelines include thresholds for construction vibration impacts for various structural categories as shown in Table 3.11-7.

Table 3.11-7: 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. Non-Engineered Timber and Masonry Buildings	0.2	94
IV. Buildings Extremely Susceptible to Vibration Damage	0.12	90

Notes:
PPV = peak particle velocity
VdB = vibration in decibels
Source: FTA 2018. Transit Noise and Vibration Impact Assessment Manual.

[4] Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual. September. Website: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf. Accessed May 8, 2021.

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.[5]

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 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 project is also subject to review under the California Environmental Quality Act (CEQA). Appendix G of the CEQA Guidelines provides impact thresholds for potential noise and vibration impacts.

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 2019 California Building Standards Code (CBC) (California Code of Regulations [CCR] Title 24).[6] 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. The proposed project does not include any type of residential development. Therefore, these standards are not applicable to the proposed project. However, the State has established land use compatibility guidelines for determining acceptable noise levels for specified land uses, including industrial type land uses such as the proposed project, which the County has adopted as described below.

Local

Contra Costa County General Plan

The Noise Element of the General Plan[7] establishes the following noise policies that may be applicable to the project.

[5] California Department of Health Services Office of Noise Control, "Land Use Compatibility for Community Noise Environments Matrix," 1976.

[6] California Building Standards Commission (CBC). 2019. California Building Standards Code (CCR Title 24), July 1.

[7] Contra Costa County. 2005. Contra Costa County General Plan, Noise Element. January. Website: https://www.contracosta.ca.gov/4732/General-Plan. Accessed May 8, 2021.

Policies

Policy 11-1 New projects shall be required to meet acceptable exterior noise level standards as established in the Noise and Land Use Compatibility Guidelines contained in Figure 11-6 [of the Noise Element]. These guidelines, along with the future noise levels shown in the future noise contours maps, should be used by the county as a guide for evaluating the compatibility of "noise sensitive" projects in potentially noisy areas.

Policy 11-2 The standard for outdoor noise levels in residential areas is an L_{dn} of 60 dB. However, an L_{dn} of 60 dB or less may not be achievable in all residential areas due to economic or aesthetic constraints. One example is small balconies associated with multi-family housing. In this case, second and third story balconies may be difficult to control to the goal. A common outdoor use area that meets the goal can be provided as an alternative.

Policy 11-3 If the primary noise source is train passbys, then the standard for outdoor noise levels in residential areas is an L_{dn} of 70 dB. A higher L_{dn} is allowable since the L_{dn} is controlled by a relatively few number of train passbys that are disruptive outdoors only for short periods. Even though the L_{dn} may be high, during the majority of the time the noise level will be acceptable.

Policy 11-8 Construction activities shall be concentrated during the hours of the day that are not noise-sensitive for adjacent land uses and should be commissioned to occur during normal work hours of the day to provide relative quiet during the more sensitive evening and early morning periods.

Policy 11-11 Noise impacts upon the natural environment, including impacts on wildlife, shall be evaluated and considered in review of development projects.

According to the County's land use compatibility standards contained in Figure 11-6 of the Noise Element, ambient noise environments are considered *normally acceptable* for new industrial, manufacturing, utilities, and agriculture land use development with noise levels ranging up to 75 dBA CNEL/L_{dn}. Environments with noise levels from 70 dBA to 80 dBA CNEL/L_{dn} are considered *conditionally acceptable* for new industrial, manufacturing, utilities, and agriculture land use development; and such development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Environments with noise levels above 75 dBA CNEL/L_{dn} are considered *normally unacceptable* for new industrial, manufacturing, utilities, and agriculture land use development.

Contra Costa County Ordinance Code—Noise Ordinance

Contra Costa County also addresses noise in its Ordinance Code.[8] The Contra Costa County Ordinance Code Article 716-8.10, Miscellaneous Provisions, addresses noise applicable to the proposed project in the following provisions summarized below:

> *Work hours (Article 716-8.1004)*
> If operations under a County approved permit are located within 500-feet of residential or commercial occupancies, except as otherwise provided by conditions of approval for the project, grading operations shall be limited to weekdays and to the hours, between 7:30 a.m. and 5:30 p.m. The ordinance does provide the exception that maintenance and service work on equipment may be performed at any time.

3.11.4 - Impacts and Mitigation Measures

Significance Criteria

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, to determine whether impacts related to noise and vibration are significant environmental effects, the following questions are analyzed and evaluated.

It should be noted that the significance criteria question (a), below, is from the Land Use and Planning section of the CEQA Guidelines Appendix G checklist questions. However, this question addresses impacts related to conflicts with land use plans, which would include project-related conflicts to the noise land use compatibility standards of the Noise Element of the General Plan. Therefore, these impacts are addressed here.

Would the proposed project:

a) 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?

b) 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?

c) Generate excessive groundborne vibration or groundborne noise levels?

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, would the project expose people residing or working in the project area to excessive noise levels?

[8] Contra Costa County. 2020. Contra Costa County Ordinance Code. December 21. Website: https://library.municode.com/ca/contra_costa_county/codes/ordinance_code. Accessed March 18, 2021.

Approach to Analysis

Noise Measurement Methodology

The existing ambient noise levels at the project site were documented through a noise monitoring effort conducted at the project site on November 12, 2019, by noise technicians. The field survey noted that noise in the project vicinity is generally characterized by vehicle traffic on the local roadways and noise from surrounding school activities.

The noise measurements were taken using Larson-Davis Model LxT2 Type 2 precision sound level meters programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meter was calibrated using a Larson-Davis calibrator, Model CAL 150. The accuracy of the calibrator is maintained through a program established through the manufacturer and is traceable to the National Bureau of Standards. All noise level measurement equipment meets American National Standards Institute specifications for sound level meters (S1.4 1983 identified in Chapter 19.68.020.AA).

Traffic Noise Modeling Methodology

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 "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.

The FHWA highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate traffic-related noise conditions in the project vicinity. Model input data includes without- and with project ADT volumes on adjacent roadway segments, day/night percentages of autos, medium and heavy trucks, vehicle speeds, ground attenuation factors, and roadway widths. The roadway speeds are based on the posted speed limits observed during site visits. Traffic modeling was performed using the data obtained from the project-specific traffic study conducted by Fehr & Peers.[9] This traffic study provides data for existing and cumulative traffic conditions. The resultant noise levels were weighed and summed over a 24-hour period to determine the L_{dn} values.

Vibration Methodology

The County does not have adopted criteria for construction groundborne vibration impacts. Therefore, the FTA's vibration impact criteria is utilized to evaluate potential vibration impacts resulting from construction activities. The FTA has established industry accepted standards for vibration impact criteria and impact assessment. These guidelines are published in its Transit Noise

[9] Fehr & Peers. 2021. CenterPoint North Richmond Development Transportation Impact Assessment. April 20.

and Vibration Impact Assessment Manual,[10] and are summarized in Table 3.11-7 in the regulatory discussion above.

Specific Thresholds of Significance

For purposes of this analysis, the following thresholds are used to evaluate the significance of noise and vibration resulting from implementation of the project.

- A significant impact would occur if the proposed project would conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. For new industrial, manufacturing, utilities, and agriculture land use developments, ambient noise levels up to 75 dBA L_{dn} are considered "normally acceptable."
- A significant impact would occur if the proposed project would generate a substantial temporary or permanent increase in ambient noise levels in the project vicinity in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
  - For temporary construction noise, a significant impact would occur if construction activities would result in a substantial temporary increase in ambient noise levels that would result in annoyance or sleep disturbance of sensitive receptors or if project-related construction grading activities would generate noise during hours other than those established as permissible in Article 716-8.1004 in the County's Code of Ordinances.
  - For project-related traffic noise, a significant impact would occur if the proposed project would cause the L_{dn} to increase by 5 dBA or more even if the L_{dn} would remain below normally acceptable levels for a receiving land use (as defined in the land use compatibility standards); or by 3 dBA or more, thereby causing the L_{dn} in the project vicinity to exceed normally acceptable levels and result in noise levels that would be considered conditionally acceptable for a receiving land use; or by 1.5 dBA or more where the L_{dn} currently exceeds conditionally acceptable levels. A doubling of traffic volume generally results in a 3 dBA increase in noise.
  - For project-related stationary noise sources, Contra Costa County established a maximum exterior noise performance threshold for receiving residential land uses of 65 dBA L_{dn}. Contra Costa County also established a maximum interior noise threshold of 45 dBA L_{dn}; however, if ambient noise levels exceed 65 dBA L_{dn} due to train noise, the maximum interior noise threshold would be 50 dBA L_{dn} in bedrooms and 55 dBA L_{dn} in other habitable rooms. For purposes of this analysis, an increase of more than 3 dBA above the applicable noise performance thresholds would be considered a significant impact.
- A significant impact would occur if the proposed project would generate groundborne vibration or groundborne noise levels in excess of applicable standards. The County has not adopted criteria for construction or operational groundborne vibration impacts. Therefore, for purposes of this analysis, the FTA's construction vibration impact criteria are utilized. The FTA threshold of 0.3 in/sec PPV is the potential damage criteria threshold for buildings of

[10] Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual. September.

engineered concrete and masonry construction. For operational impacts, a significant impact will occur if project on-going activities would produce groundborne vibrations that are perceptible without instruments by a reasonable person at the property lines of the site.

- 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 2 miles of a public airport or public use airport, a significant impact would occur if the project would expose people residing or working in the project area to excessive noise levels.

Impact Evaluation

Noise Levels That Would Conflict with Any Land Use Plan, Policy, or Regulation

Impact NOI-1:	**The proposed project would not 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.**

Construction

Impacts related to noise land use compatibility consistency are limited to operational impacts. No respective construction impacts would occur.

Operation

A significant impact would occur if the proposed project would result in a conflict with applicable County adopted land use compatibility standards. The standards establish that ambient noise environments are considered *normally acceptable* for new industrial, manufacturing, utilities, and agriculture land use development with noise levels ranging up to 75 dBA CNEL/L_{dn}. Environments with noise levels from 70 dBA to 80 dBA CNEL/L_{dn} are considered *conditionally acceptable* for new industrial, manufacturing, utilities, and agriculture land use development; and such development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.

The FHWA highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate existing and future project-related traffic noise conditions along modeled roadway segments in the project vicinity. The projected future traffic noise levels on roadways adjacent to the site were analyzed to determine compliance with the applicable noise and land use compatibility standards. Traffic modeling was performed using the data obtained from the project-specific traffic impact study conducted by Fehr & Peers (Appendix I).[11] This traffic impact study provides data for existing and cumulative conditions. The resultant noise levels were weighed and summed over a 24-hour period to determine the L_{dn} values. The traffic noise modeling input and output files—including the 60 dBA, 65 dBA, and 70 dBA CNEL noise contour distances—are included in Appendix H. The following tables show a summary of the traffic noise levels for existing and cumulative traffic conditions, with and without the project, as measured at 50 feet from the centerline of the outermost travel lane.

[11] Fehr & Peers. 2021. CenterPoint North Richmond Development Transportation Impact Assessment. April 20.

Table 3.11-8 shows a summary of the traffic noise levels for existing scenarios with and without project conditions as measured at 50 feet from the centerline of the outermost travel lane.

Table 3.11-8: Project Traffic Noise Modeling Results Summary

Roadway Segment	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane		
	Existing	Existing with Project	Increase over Existing (dBA)
Fred Jackson Way–Brookside Drive to Pittsburg Avenue	63.1	63.3	0.2
Brookside Drive–east of Fred Jackson Way	57.2	57.3	0.1
Fred Jackson Way–north of Brookside Drive	62.5	62.7	0.2
Fred Jackson Way–south of Pittsburg Avenue	59.1	59.2	0.1

Notes:
L_{dn} = day/night average sound level
dBA = A-weighted decibel
Modeling results do not take into account mitigating features such as topography, vegetative screening, fencing, building design, or structure screening. Rather it assumes a worst case of having a direct line of site on flat terrain.
Source: FCS 2021.

Table 3.11-9 shows a summary of the traffic noise levels for cumulative conditions with and without project conditions as measured at 50 feet from the centerline of the outermost travel lane.

Table 3.11-9: Cumulative Traffic Noise Modeling Results Summary

Roadway Segment	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane		
	Cumulative without Project	Cumulative with Project	Increase over without Project (dBA)
Fred Jackson Way–Brookside Drive to Pittsburg Avenue	63.8	63.9	0.1
Brookside Drive–east of Fred Jackson Way	58.1	58.2	0.1
Fred Jackson Way–north of Brookside Drive	63.2	63.4	0.2
Fred Jackson Way–south of Pittsburg Avenue	59.8	59.8	0.0

Notes:
L_{dn} = day/night average sound level
dBA = A-weighted decibel
Modeling results do not take into account mitigating features such as topography, vegetative screening, fencing, building design, or structure screening. Rather it assumes a worst case of having a direct line of site on flat terrain.
Source: FCS 2021.

The highest traffic noise levels that would be experienced at the proposed project would occur on Fred Jackson Way between Brookside Drive and Pittsburg Avenue under cumulative with project conditions. These traffic noise levels would range up to approximately 63.9 dBA L_{dn} as measured at

50 feet from the centerline of the nearest travel lane. The nearest proposed façade would be located approximately 115 feet from the centerline of the roadway. At this distance, traffic noise levels would range up to approximately 57 dBA L_{dn}. These traffic noise levels do not exceed the "normally acceptable" standard of 75 dBA L_{dn} for the proposed industrial, manufacturing, utilities, and agriculture land use developments and would be considered less than significant. In addition, these projected traffic noise levels are below the lower range of the County's "conditionally acceptable" land use compatibility standard of 70 dBA L_{dn}.

Thus, traffic noise levels adjacent to the project site would not exceed noise levels that the County considers acceptable for new industrial land uses. As such, traffic noise would not 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, and the impact would be less than significant.

Therefore, the impact related to noise land use compatibility standards consistency would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Substantial Noise Increase in Excess of Standards

Impact NOI-2:	**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.**

As discussed below, operational noise would not result in a significant impact. For construction noise, restricting construction activities to normal business hours, as provided by Mitigation Measure (MM) NOI-1, would reduce potential impacts related to site preparation, grading, and construction to less than significant.

Construction

For purposes of this analysis, a significant impact would occur if construction activities would result in a substantial temporary increase in ambient noise levels that would result in annoyance or sleep disturbance of sensitive receptors or if project-related construction grading activities would generate noise during hours other than those established as permissible in Article 716-8.1004 in the County's Code of Ordinances.

Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction traffic, construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. A discussion of the potential impacts associated with each of these types of activities is provided below.

Construction Traffic Noise

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 the timing and duration of the construction activities. One type of short-term noise impacts 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. Project-related construction trips would not be expected to double the hourly or daily traffic volumes 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 Noise

Construction is performed in discrete steps, each of which entails its own mix of equipment, and consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on-site. Thus, the noise levels vary as construction progresses. Despite the variety in the types and sizes of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction noise ranges to be categorized by work phase. Table 3.11-3 lists the maximum noise levels recommended for noise impact assessments for typical construction equipment based on a distance of 50 feet between the equipment and a noise receptor.

The site preparation phase, which includes excavation and grading activities, tend 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. 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 3.11-2, 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}, at a distance of 50 feet from the acoustic center of a construction area when multiple pieces of heavy equipment operate simultaneously in relatively the same location for an hour period.

The nearest off-site noise-sensitive receptor to the project site is Verde Elementary School located southeast of the project site, which would be located approximately 250 feet from the acoustic center of construction activity where multiple pieces of heavy machinery would operate. Again, the acoustic center refers to a point equidistant from multiple pieces of equipment operating simultaneously which would produce the worst-case maximum noise level. At this distance, reasonable worst-case maximum construction noise levels at the exterior façade of this nearest sensitive receptor would be 76 dBA L_{max}, with a reasonable worst-case hourly average noise level of approximately 72 dBA L_{eq}, intermittently, when multiple pieces of heavy construction equipment operate simultaneously at the nearest construction footprint. These noise levels would be intermittent and would be reduced as equipment moves over the project site further from the closest sensitive receptors.

Although there could be a relatively high single event noise exposure potential causing an intermittent noise nuisance, the effect of construction activities on longer-term (hourly or daily) ambient noise levels would be small but 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. Therefore, grading activities shall be limited to Monday through Friday, between 7:30 a.m. and 5:30 p.m. Restricting grading activities to these stated time-periods, as well as implementing the best management noise reduction techniques and practices outlined in MM NOI-1, would ensure that construction noise would not result in a substantial temporary increase in ambient noise levels that would result in annoyance or sleep disturbance of nearby sensitive receptors. Therefore, the impact would be less than significant.

Operation

The proposed project will result in an increase in traffic on local roadway segments in the project vicinity. In addition, implementation of the proposed project would introduce new stationary noise sources to the ambient noise environment in the project vicinity, including new mechanical ventilation equipment. The potential for a substantial increase in ambient noise levels resulting from these noise sources is analyzed below.

Traffic Noise

The County does not define “substantial increase,” therefore, for purposes of this analysis, a substantial increase is based on the following criteria. As noted in the characteristics of noise discussion, audible increases in noise levels generally refer to a change of 3 dBA or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. A change of 5 dBA is considered the minimum readily perceptible change to the human ear in outdoor environments. Therefore, for purposes of this analysis, a significant impact would occur if the proposed project would cause the L_{dn} to increase by any of the following:

- 5 dBA or more even if the L_{dn} would remain below normally acceptable levels for a receiving land use.
- 3 dBA or more, thereby causing the L_{dn} in the project vicinity to exceed normally acceptable levels and result in noise levels that would be considered conditionally acceptable for a receiving land use.
- 1.5 dBA or more where the L_{dn} currently exceeds conditionally acceptable levels.

The highest traffic noise level increase with implementation of the proposed project would occur along Fred Jackson Way, north of Brookside Drive under existing with project and under cumulative with project conditions, as well as along Fred Jackson Way between Brookside Drive and Pittsburg Avenue under existing with project conditions. Along these roadway segments, the proposed project would result in traffic noise levels ranging up to 63.4 dBA and 63.3 dBA L_{dn}, respectively for each segment, as measured at 50 feet from the centerline of the nearest travel lane, representing an increase of 0.2 dBA over conditions without the project. Land uses adjacent to these roadway segments are all industrial land uses. The County considers noise environments with noise levels ranging up to 75 dBA CNEL/L_{dn} as "normally acceptable" for new industrial, manufacturing, utilities, and agriculture land use development. These resulting traffic noise levels are well below the normally acceptable levels for the adjacent land uses, so an increase of 5 dBA would be considered significant. Therefore, since the project would not increase traffic noise levels by 5 dBA or greater, the project-related traffic noise increase along these roadway segments would be considered less than significant.

No other modeled roadway segment would experience an increase of greater than 1 dBA under any of the "with project" traffic scenarios. Therefore, project-related traffic noise level would result in less than significant increases in traffic noise levels along modeled roadway segments in the project vicinity. This would be a less than significant impact, and no mitigation would be required.

Stationary Noise

A significant impact would occur if operational noise levels generated by stationary noise sources at the project site would result in a substantial permanent increase in ambient noise levels in excess of any of the noise performance thresholds established in the General Plan. The County establishes a maximum exterior noise performance threshold for receiving noise-sensitive land uses of 65 dBA L_{dn}. The County also establishes a maximum interior noise threshold of 45 dBA L_{dn} for receiving noise-sensitive or residential land uses; however, if ambient noise levels exceed 65 dBA L_{dn} due to train noise, the maximum interior noise threshold would be 50 dBA L_{dn} in bedrooms and 55 dBA L_{dn} in other habitable rooms.

As noted in the characteristics of noise discussion, audible increases in noise levels generally refer to a change of 3 dBA or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. A change of 5 dBA is considered the minimum readily perceptible change to the human ear in outdoor environments. Therefore, for purposes of this analysis, an increase of more than 3 dBA above the applicable noise performance thresholds would be considered a substantial permanent increase in ambient noise levels.

The proposed project would include new stationary noise sources, including new mechanical ventilation equipment, parking lot activities, and truck loading and unloading activities.

Mechanical Equipment Operations

Noise levels from typical mechanical ventilation equipment range up to approximately 60 dBA L_{eq} as measured at a distance of 25 feet. The building's proposed rooftop mechanical ventilation units could be located as close as 385 feet from the nearest noise-sensitive receptor, which is the Verde Elementary School located southeast of the proposed Building 3. At this distance, noise levels generated by this equipment would attenuate to below 37 dBA L_{eq} at this closest residential receptor. If this equipment operated continuously for 24 hours it would result in a reasonable worst-case maximum exterior noise level of 43 dBA L_{dn}. These noise levels would not exceed the County's maximum exterior noise performance threshold for receiving noise-sensitive land uses of 65 dBA L_{dn}. Therefore, impacts from operational noise levels generated by the proposed mechanical ventilation equipment would not result in a substantial permanent increase in ambient noise levels in excess of any of the noise performance thresholds, and would be less than significant.

Parking Lot Activities

Typical parking lot activities include people conversing, doors shutting, and vehicles idling which generate noise levels ranging from approximately 60 dBA to 70 dBA L_{max} at 50 feet. These activities are expected to occur sporadically throughout the day, as visitors and staff arrive and leave parking lot areas at the project site.

The nearest noise-sensitive receptor is the Verde Elementary School buildings located approximately 250 feet from the nearest acoustic center of proposed parking areas on the project site. At this distance, noise levels associated with daily parking lot activities would range up to approximately 56 dBA L_{max} and 49 L_{eq} at the nearest residential property line. If these parking lot activities occurred every hour over a 24-hour period, they would result in a reasonable worst-case maximum exterior noise level of 55 dBA L_{dn}. These noise levels would not exceed Contra Costa County's maximum exterior noise performance threshold for receiving noise-sensitive land uses of 65 dBA L_{dn}. Therefore, noise impacts from operational parking lot activity would not result in a substantial permanent increase in ambient noise levels in excess of any of the noise performance thresholds, and would be less than significant.

Truck Loading Activities

Noise would also be generated by truck delivery, loading and unloading activities at the loading dock areas of the proposed project site. Typical noise levels from this type of loading and unloading activity can range from 70 dBA to 80 dBA L_{max} as measured at 50 feet.

Commercial loading and unloading activities at the proposed project site would occur at the three proposed warehouses, Building 1, Building 2, and Building 3. Loading and unloading activities could be located as close to 500 feet from the nearest off-site receptor, which is the Verde Elementary School buildings located southeast of the proposed Building 3. At this distance, activities at loading and unloading areas could result in intermittent noise levels ranging up to approximately 45 dBA L_{max} and 46 L_{eq}. If these parking lot activities occurred every hour over a 24-hour period, they would result in a reasonable worst-case maximum exterior noise level of 53 dBA L_{dn}. These noise levels would not exceed Contra Costa County's maximum exterior noise performance threshold for receiving noise-

sensitive land uses of 65 dBA L_{dn}. Therefore, impacts from operational truck loading activity noise levels would not result in a substantial permanent increase in ambient noise levels in excess of any of the noise performance thresholds, and would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact (construction noise only).

Mitigation Measures

MM NOI-1 Implement Noise Reduction Measures During Construction

- The construction contractor shall ensure that grading activities shall be restricted to the hours between 7:30 a.m. and 5:30 p.m., Monday through Friday.

Level of Significance After Mitigation

Less than significant impact with mitigation incorporated.

Groundborne Vibration/Noise Levels

Impact NOI-3: The proposed project would not result in generation of excessive groundborne vibration or groundborne noise levels.

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.

Construction

The County has not adopted criteria for construction groundborne vibration impacts. Therefore, for purposes of this analysis, the FTA's vibration impact criteria are utilized. The FTA has established industry accepted standards for vibration impact criteria and impact assessment. These guidelines are published in the agency's Transit Noise and Vibration Impact Assessment Manual.[12] Therefore, for purposes of this analysis, a significant impact would occur if the proposed project would generate groundborne vibration or groundborne noise levels in excess of the FTA impact assessment criteria for construction (0.2 in/sec PPV for non-engineer timber and masonry construction).

Groundborne noise is generated when vibrating building components radiate sound, or noise generated by groundborne vibration. In general, if groundborne vibration levels are 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.

[12] Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual. September.

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of a construction site respond to these vibrations with varying results ranging from no perceptible effects at the low levels, to slight damage at the highest levels. As shown in the Setting section above, Table 3.11-4 provides approximate vibration levels for various construction activities.

Impact equipment, such as pile drivers, are not expected to be used during construction of the proposed project. Therefore, of the variety of equipment used during construction of this component of the project, the small vibratory rollers that would be used in the site preparation phase of construction would produce the greatest groundborne vibration levels. Small vibratory rollers produce groundborne vibration levels ranging up to 0.101 in/sec PPV at 25 feet from the operating equipment.

The nearest off-site structure to where the heaviest construction equipment would operate is a building associated with Urban Tilth approximately 95 feet north of the nearest construction footprint for the proposed project, located at 323 Brookside Drive. As measured at this nearest receptor, operation of a small vibratory roller could result in groundborne vibration levels up to 0.014 in/sec PPV. This is well below the FTA's damage threshold criteria of 0.2 PPV for non-engineer timber and masonry construction. In addition, vibratory impacts to the closest Verde Elementary School buildings would be even lower as the closest structure is located approximately 230 feet southeast of the project boundary. Therefore, construction-related groundborne vibration impacts to off-site receptors would be less than significant.

Operation

The County has not adopted criteria for operational groundborne vibration impacts. Therefore, for purposes of this analysis, a significant impact would occur if project on-going activities would produce groundborne vibrations that are perceptible without instruments by a reasonable person at the property lines of a site. Implementation of the proposed project would not include any permanent sources of vibration that would expose persons in the project vicinity to groundborne vibration levels that could be perceptible without instruments at any existing sensitive land use in the project vicinity. Therefore, operational groundborne vibration impacts would be less than significant.

Level of Significance

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.**

Construction

Noise impacts related to a project being located proximate to a private airstrips, public airport, or public use airport are limited to operational impacts. No respective construction impacts would occur.

Operation

A significant impact would occur if the proposed project would 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 2 miles of a public airport or public use airport.

The project site is not located within the vicinity of a private airstrip. Additionally, there is not a private airstrip located within a 5-mile radius of the project site. The closest public airport is the Gnoss Field Airport located 15.7 miles northwest of the project site. The project site is also not located within a 55 dBA CNEL airport noise contours of any public or public use airport. As such, operation of the proposed project would not expose people residing or working at the project site to excessive noise levels associated with public airport or public use airport noise. Therefore, no impact related to exposure of persons residing or working at the project site to excessive noise levels associated with airport activity would occur.

Level of Significance

No impact.

3.11.5 - Cumulative Impacts

Noise Land Use Compatibility Consistency

Combined cumulative year traffic noise levels at the project site would result in noise levels that the County considers to be normally acceptable for industrial, manufacturing, utilities, and agriculture land uses (with projected noise levels of up to 75 dBA L_{dn} at the nearest proposed façade). The proposed project would not result in a cumulatively considerable contribution to conflict with the noise land use compatibility standards. Therefore, the proposed project would result in a less than significant cumulative impact related to land use compatibility consistency.

Construction 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 area near the project site (approximately 500 feet) would be the area most affected by the proposed project construction activity. There is only one proposed project in this radius that could potentially be concurrently under construction at the same time as the proposed project: the Urban Tilth project at Brookside Drive and Fred Jackson Way. This other project is approved to develop an agricultural production farm, community learning center, and farm stand. However, the nearest sensitive receptor to this other project site is the Verde Elementary School located over 1,200 feet south of the Urban Tilth project site. At this distance, construction noise levels would not add any perceptible increase above the proposed project's construction noise levels, even if they were to occur simultaneously. Therefore, the project's loudest phase of construction activity (the site preparation phase) would combine with any other current or planned development project located within 500 feet of the project site that could result in a perceptible increase in the project's construction noise levels analyzed above. Therefore, the proposed project would result in a less than significant cumulative impact related to construction noise.

Operational Traffic Noise

The significance threshold for a cumulative traffic noise impact would be traffic noise levels that would cause the L_{dn} to increase by 1.5 dBA or more where the L_{dn} currently exceeds conditionally acceptable levels. According to the County's land use compatibility standards contained in Figure 11-6 of the Noise Element, environments with noise levels from 70 dBA to 80 dBA CNEL/L_{dn} are considered *conditionally acceptable* for new industrial, manufacturing, utilities, and agriculture land use development.

None of the modeled roadway segments in the project vicinity would experience traffic noise levels under cumulative plus project conditions that would exceed conditionally acceptable noise levels for any adjacent land uses. In addition, the highest traffic noise level increase under cumulative plus project conditions would occur along Fred Jackson Way between Brookside Drive and Pittsburg Avenue. Along this roadway segment, the proposed project would result in an increase of 0.2 dBA over conditions that would exist without the project. This increase is well below the threshold that would be considered a significant impact. Therefore, project-related traffic noise levels under cumulative plus project conditions would not result in a cumulatively considerable contribution to traffic noise levels along modeled roadway segments in the project vicinity. This would be a less than significant impact, and no mitigation would be required.

Given the above information, the proposed project, in conjunction with other existing, planned, and probable future projects, would result in a less than significant cumulative impact related to noise.

Operational Stationary Noise

Implementation of the proposed project would introduce new stationary noise sources to the ambient noise environment in the project vicinity, including new rooftop mechanical ventilation equipment, parking lot activities, and truck loading activities. Noise levels generated by mechanical ventilation equipment would attenuate to below 37 dBA L_{eq} at the closest noise-sensitive receptor, the Verde Elementary School south of the project site. Noise levels generated by parking lot activities would attenuate to approximately 49 dBA L_{eq} at the closest sensitive receptor. Noise levels generated by truck loading activities would attenuate to approximately 46 dBA L_{eq} at the closest sensitive receptor. The noise levels generated by all sources of operational stationary noise would not exceed documented existing background ambient noise levels. The closest cumulative project (Project 14) is the legalization of the existing contractor's yard. This existing facility is located adjacent to the project's southern boundary and also borders the Verde Elementary School south of the project site. Existing ambient noise levels adjacent to this site were documented by short-term ambient noise measurement ST-3, with recorded daytime ambient noise levels of 61.5 dBA L_{eq}. The ambient noise measurement captured the daytime operational noise levels of the existing contractor's yard. Adding the proposed project's operational stationary noise levels to these existing noise levels would not result in any increase in the existing ambient noise levels as measured at this nearest off-site sensitive receptor. Therefore, implementation of the proposed project would not result in a cumulatively considerable contribution to existing ambient noise conditions in the project vicinity. This impact would be less than significant.

Construction Vibration

The only cumulatively considerable contribution to vibration conditions in the project vicinity would result from introduction of new permanent sources of groundborne vibration in the project site vicinity. There are no other proposed development projects that would be within 100 feet of the proposed project's construction footprint and simultaneously within 100 feet of any off-site sensitive receptor, and therefore there would not be any cumulative vibration condition from proposed construction activities. Therefore, construction of the proposed project would not result in a cumulatively considerable contribution to vibration conditions in the project vicinity. This impact would be less than significant.

Operational Vibration

Implementation of the proposed project would not include any permanent sources of vibration that would expose persons in the project vicinity to groundborne vibration levels that could be perceptible without instruments at any existing sensitive land use in the vicinity of the project site. Therefore, implementation of the project would not result in a cumulatively considerable contribution to vibration conditions in the project vicinity. This impact would be less than significant.

Level of Cumulative Significance

Less than significant impact.

THIS PAGE INTENTIONALLY LEFT BLANK

Source: Google Earth Aerial Imagery.

FIRSTCARBON SOLUTIONS™

300 150 0 300
Feet

Exhibit 3.11-1
Noise Monitoring Locations

THIS PAGE INTENTIONALLY LEFT BLANK

3.12 - Public Services

3.12.1 - Introduction

This section describes the existing conditions related to public services in the project area as well as the relevant regulatory framework. This section also evaluates the possible impacts related to public services that could result from implementation of the proposed project. Analysis in this section is based on information obtained from the Contra Costa County General Plan (General Plan), Contra Costa County Fire Protection District (CCCFPD), Contra Costa County Office of the Sheriff, and West Contra Costa Unified School District (WCCUSD). No comments were received during the Notice of Preparation (NOP) comment period related to public services.

Parks and Recreational Facilities are discussed in Chapter 4, Effects Found not to be Significant.

3.12.2 - Environmental Setting

Fire Protection and Emergency Medical Services

Northern California

California Department of Forestry and Fire Protection (CAL FIRE) is responsible for fire protection and stewardship of over 31 million acres of California's privately owned wildlands. CAL FIRE also provides varying levels of emergency services in 36 of the California's 58 counties via contracts with local governments. Because of the Department's size and major incident management experience, it is often asked to assist or take the lead in disasters.[1] In October 2017, a series of wildfires occurred in Northern California resulting in extensive property damage. In November 2018, the Camp Fire wildfire occurred in Northern California, resulting in the deadliest wildfire to occur in State history.[2] In September and October 2020, the Glass Fire burned more than 67,484 acres and destroyed 1,555 structures, including 308 homes and 343 commercial buildings in Napa County, as well as 334 homes in Sonoma County.[3]

Contra Costa County

The CCCFPD provides fire protection and emergency medical services to Richmond and the surrounding unincorporated areas of Contra Costa County (County). The CCCFPD serves the County with 26 fire stations and maintains mutual aid agreements with East Contra Costa Fire Protection District, Kensington Fire Protection District, Moraga-Orinda Fire Protection District, Rodeo-Hercules Fire Protection District, and San Ramon Valley Fire Protection District.[4] The CCCFPD is comprised of

[1] California Department of Forestry and Fire Protection (CAL FIRE). 2021. About Us. Website: https://www.fire.ca.gov/about-us/. Accessed April 19, 2021.
[2] California Department of Forestry and Fire Protection (CAL FIRE). 2020. Top 20 Deadliest California Wildfires. Website: https://www.fire.ca.gov/media/lbfd0m2f/top20_deadliest.pdf. Accessed April 19, 2021.
[3] California Department of Forestry and Fire Protection (CAL FIRE). 2020. Glass Fire. Website: https://www.fire.ca.gov/incidents/2020/9/27/glass-fire/. Accessed April 23, 2021.
[4] Contra Costa County, California. 2021. Fire Protection Districts. Website: https://www.contracosta.ca.gov/1550/Fire-Protection-Districts. Accessed April 19, 2021.

22 engine companies, five truck companies, as well as one rescue squad responding from 25 stations to service the County.[5]

According to the General Plan, wildfire hazards are a considerable problem in undeveloped areas and in areas of extensive un-irrigated vegetation. Vegetation and grain areas of the County are extremely flammable during the late summer and fall.[6]

Project Site

There are no fire protection and emergency medical facilities on the project site. There are four fire stations in the vicinity of the project site: Richmond Fire Station No. 62, located on the northwest corner of the Hensley Street/7th Street intersection, is approximately 1.1 miles (driving distance) south of the project site; Richmond Fire Station No. 68 is 2.2 miles (driving distance) northeast of project site. San Pablo Fire Station No. 70, located on San Pablo Avenue, is 1.7 miles (driving distance) southeast of the project site. Additionally, a new CCCFPD San Pablo Station No. 70 has been constructed at the corner of 23rd Street and Market Avenue, approximately 1.4 miles (driving distance) southeast of the project site.[7]

Police Protection

Contra Costa County

The Contra Costa County Office of the Sheriff provides law enforcement to unincorporated areas of the County and serves over one million County residents. The Office of the Sheriff employs more than 1,100 staff members. Sworn staff provide unincorporated area policing, air support (helicopters), marine patrol, dispatch, investigations, coroners, county detention facilities, custody alternatives, court security, forensic services, a police academy, and an Office of Emergency Services in unincorporated parts of the County. The Office of the Sheriff also provides services to contract cities such as Danville, Lafayette, and Orinda.[8] The Office of the Sheriff maintains four bureaus: Administration Services, Custody Services, Field Operations, and Support Services. A Commander manages each bureau.[9]

The Office of the Sheriff has a ratio of one sworn staff personnel per 1,000 residents. As shown in Table 3.12-1, calls are broken down into three category levels and average response times range from 5 minutes 47 seconds to 6 minutes 16 seconds. These response times represent the time from when a call was received by the dispatch center to when the Deputy arrived at the location of the call. Because there are many factors in evaluating response times, the Office of the Sheriff does not set a specific goal for emergency call response times. However, General Plan Policy 7-59 indicates that when making staffing and beat configuration decisions, the Sheriff should strive for a maximum

[5] Contra Costa County Fire Protection District. 2014. Fire/Rescue. Website: https://www.cccfpd.org/fire-rescue. Accessed April 19, 2021.
[6] Contra Costa County General Plan. 2005. Contra Costa County General Plan. Safety Element. Website: https://www.contracosta.ca.gov/DocumentCenter/View/30920/Ch10-Safety-Element?bidId=. Accessed April 19, 2021.
[7] Contra Costa Herald. 2021. Construction completed; ribbon cut to open new Fire Station 70 in San Pablo. April 13. Website: http://contracostaherald.com/construction-completed-ribbon-cut-to-open-new-fire-station-70-in-san-pablo/. Accessed April 21, 2021.
[8] Contra Costa County Office of the Sheriff. Office of the Sheriff Overview. Website: https://www.cocosheriff.org/about-us/office-of-the-sheriff-overview Accessed April 19, 2021.
[9] Contra Costa County Office of the Sheriff. Bureaus. Website: https://www.cocosheriff.org/bureaus. Accessed April 19, 2021.

response time for Priority 1 or 2 calls of 5 minutes for 90 percent of all emergency responses in central business district(s), urban, and suburban areas.

Table 3.12-1: Overall Sheriff Response Times

Response Category	Response Times (minutes: seconds)
Priority 1 (urgent)	06:40
Priority 2 (routine)	06:04
Priority 3 (non-serious/low priority)	05:47
Source: Contra Costa Sheriff. 2019. Email Correspondence with Jimmy Lee, Public Relations Director. September 11.	

Project Site

No police or sheriff stations exists on the project site. The closest police station to the site is the Bay Station, located at 555 Giant Highway in Richmond, approximately 2 miles to the north. Mutual aid is coordinated between the Law Enforcement Region II (Alameda County Sheriff's Office), the California Office of Emergency Services, and the agencies within the County.[10] Additionally, County Patrol provides patrol services to the unincorporated areas of the County. The County Office of the Sheriff is presently staffed with 107 sworn patrol personnel, 31 of which are assigned to Bay Station. Specifically, Bay Station staffing consists of one Lieutenant, five Sergeants, 25 Deputies, and one Community Service Officer.[11]

Schools

Contra Costa County

WCCUSD provides school services to West Contra Costa County, including the cities of El Cerrito, San Pablo, Pinole, and Hercules, and unincorporated areas of Bayview-Montalvin Manor, East Richmond Heights, El Sobrante, Kensington, North Richmond, and Tara Hills. WCCUSD provides K-12 educational services.[12] During the 2018-2019 school year, 32,143 students were enrolled in WCCUSD.[13]

Table 3.12-2 provides the breakdown of enrollment between elementary schools to high schools and total enrollment between 2015-2019.

[10] Contra Costa County Office of the Sheriff. Emergency Services Support Unit/Volunteers. Website: https://www.cocosheriff.org/bureaus/support-services/emergency-services-support-unit-volunteers. Accessed April 19, 2021

[11] Contra Costa County Office of the Sheriff. Bay Station. Website: https://www.cocosheriff.org/bureaus/field-operations/patrol-division/bay-station. Accessed April 19, 2021.

[12] West Contra Costa County Unified School District. 2020-2021. WCCUSD At A Glance. Website: https://www.wccusd.net/domain/1443. Accessed April 19. 2021.

[13] Education Data Partnership. 2020. West Contra Costa Unified. Website: http://www.ed-data.org/district/Contra-Costa/West-Contra-Costa-Unified. Accessed September 9, 2020.

Table 3.12-2: West Contra Costa Unified School District Enrollment (2015–2019)

School Type	2015-2016	2016-2017	2017-2018	2018-2019
Elementary Schools	16,486	16,299	16,345	16,246
Middle Schools	3,838	3,732	3,725	3,608
High Schools	7,564	7,741	7,623	7,567
Alternative Schools	632	614	625	566
Total	**28,520**	**28,386**	**28,318**	**27,987**

Source: West Contra Costa Unified School District. 2019. Enrollment Dashboard. Website: https://www.wccusd.net/Page/8099. Accessed April 19, 2021.

Project Site

No school exists on the project site. The project site is located within the boundaries of the WCCUSD, which serves grades K-12. The closest elementary school to the project site is Verde Elementary School, located adjacent to the project site's southern boundary. The closest middle school to the project site is Helms Middle School, located 1.2 miles to the east. The closest high school to the project site is Richmond High School, located 1 mile southeast.

Libraries

Contra Costa County

Several local city libraries serve the County and are within the County Library system. The County Library system hosts 26 libraries and provides book delivery services to Discovery Bay and Rossmoor community in Walnut Creek. County Libraries have 155,214 active cardholders. In the 2018-2019 fiscal year, there were 3,540,149 visits to system libraries. The County funds 35 hours of library service each week when a City provides facility-related costs. If a City funds additional hours of service, the Library system matches increases in usage with increases to collections, including books, CDs, DVDs, and programs for all ages. The County Libraries receive an annual allocation of approximately 1.5 percent of County property tax revenue and there is no specific development fee currently assessed by or for County Libraries.

Table 3.12-3 summarizes the library branches closest to the project site.

Table 3.12-3: Contra Costa Library Information

Library Branch and Location	Distance from Project Site (miles)	Hours of Operation*	Services and Events
San Pablo Library 13751 San Pablo Avenue City of San Pablo	1.2	Monday-Tuesday: 12:00 p.m.- 8:00 p.m. Wednesday-Thursday: 10:00 a.m.- 6:00 p.m. Friday-Sunday: 1:00 p.m.- 5:00 p.m. Saturday: 10:00 a.m.- 5:00 p.m.	• Children's area • Teen Zone • Laptop lending station • Café space • Two group study rooms • Community room • Friends of the Library Bookstore

Library Branch and Location	Distance from Project Site (miles)	Hours of Operation*	Services and Events
El Sobrante Library 4191 Appian Way El Sobrante unincorporated community	2.8	Monday-Thursday: 12:00 p.m.- 8:00 p.m. Tuesday: 10:00 a.m.- 6:00 p.m. Friday: 1:00 p.m.- 5:00 p.m. Saturday: 10:00 a.m.- 5:00 p.m. Closed Wednesday and Sunday	• Public meeting room • Weekly children's story time • Film screenings • Book clubs • Public Wi-Fi and computers with internet
Pinole Library 2935 Pinole Valley Road City of Pinole	4.6	Tuesday: 10:00 a.m.- 6:00 p.m. Wednesday-Thursday: 12:00 p.m.- 8:00 p.m. Friday: 1:00 p.m.- 5:00 p.m. Saturday: 10:00 a.m.- 5:00 p.m. Closed Sunday and Monday	• Filipino Collection in English and Tagalog • Assistive technology computer • Public meeting room • Microfilm reader • After school teen program • English as a Second Language group • Meditation classes

Source: Contra Costa County Library. 2020.

* Hours of operation may be different due to the COVID-19 pandemic. Hours of operation reflected in this table reflect hours of operation prior to the COVID-19 pandemic.

Project Site

No library exists on the project site. The closest library to the project site is San Pablo Library, located 1.2 miles southeast.

3.12.3 - Regulatory Framework

Federal

No federal plans, policies, regulations, or laws related to public services are applicable to the proposed project.

State

California Fire Code and California Building Code

The International Fire Code and the International Building Code, established by the International Code Council (ICC) and amended by the State of California, prescribe performance characteristics and materials to be used to achieve acceptable levels of fire protection.

California Health and Safety Code

California Health and Safety Code, Sections 13100–13135, establish the following policies related to fire protection:

- **Section 13100.1:** The functions of the office of the State Fire Marshall, including CAL FIRE, shall be to foster, promote, and develop strategies to protect life and property against fire and panic.
- **Section 13104.6:** The Fire Marshall has the authority to require fire hazards to be removed in accordance with the law relating to removal or public nuisances on tax-deeded property.

California Senate Bill 50

Senate Bill 50 (SB 50) (funded by Proposition 1A, approved in 1998) limits the power of cities and counties to require mitigation of school facilities impacts as a condition of approving new development, and provides instead for a standardized developer fee. SB 50 generally provides for a 50/50 State and local school facilities funding match. SB 50 also provides for three levels of statutory impact fees. The application level depends on whether State funding is available, whether the school district is eligible for State funding, and whether the school district meets certain additional criteria involving bonding capacity, year-round school, and percentage of moveable classrooms in use.

California Government Code, Section 65995(b) and Education Code, Section 17620

SB 50 amended Section 65995 of the California Government Code, which contains limitations on Section 17620 of the Education Code, the statute that authorizes school districts to assess development fees within school district boundaries. Section 65995(b)(3) of the Government Code requires the maximum square footage assessment for development to be increased every 2 years, according to inflation adjustments. On January 22, 2014, the State approved increasing the allowable amount of statutory school facilities fees (Level I School Fees) from $3.20 to $3.36 per square foot of assessable space for residential development of 500 square feet or more, and from $0.51 to $0.54 per square foot of chargeable covered and enclosed space for commercial/industrial development. School districts may levy higher fees if they apply to the State and meet certain conditions.

Local

Contra Costa County General Plan

General Plan Public Facilities/Services Element

The General Plan Public Facilities/Services Element sets forth the following applicable goals and policies that are relevant to public facilities/services:

Goal 7-A To give a high priority to funding quality civic, public, and community facilities which serve a broad range of needs throughout the County.

Goal 7-B To permit development in unincorporated areas only when financing mechanisms are in place or committed which assure that adopted performance standards in the growth management program will be met.

Goal 7-C To utilize equitable financing methods which assure that adopted performance standards are achieved.

Goal 7-D To cooperate with other local jurisdictions to promote the most cost effective methods of providing public facilities necessary for supporting the economic, social, and environmental well-being of the County and its residents.

Goal 7-E To resolve conflicts with other jurisdictions regarding the location of revenue generating land uses.

Policies

Policy 7-1 New development shall be required to pay its fair share of the cost of all existing public facilities it utilizes, based upon the demand for these facilities which can be attributed to new development.

Policy 7-2 New development, not existing residents, should be required to pay all costs of upgrading existing public facilities or constructing new facilities which are exclusively needed to serve new development.

Policy 7-4 The financial impacts of new development or public facilities should generally be determined during the project review process and may be based on the analysis contemplated under the Growth Management Element or otherwise. As part of the project approval, specific findings shall be adopted which relate to the demand for new public facilities and how the demand affects the service standards included in the growth management program.

Policy 7-6 When adopting, amending, and imposing impact fees and developer exactions, the County shall consider the effects of such fees and exactions upon project economics, the County's development goals and housing needs.

Policy 7-57 A sheriff facility standard of 155 square feet of station per 1,000 population shall be maintained within the unincorporated area of the County.

Policy 7-58 Sheriff patrol beats shall be configured to assure minimum response times and efficient use of resources.

Policy 7-59 A maximum response time goal for priority 1 or 2 calls of five minutes for 90 percent of all emergency responses in central business district, urban and suburban areas, shall be strived for by the sheriff when making staffing and beat configuration decisions.

Policy 7-60 Levels of service above the County-wide standard requested by unincorporated communities shall be provided through the creation of a County Service Area or other special government unit.

Policy 7-62 The County shall strive to reach a maximum running time of 3 minutes and/or 1.5 miles from the first-due station, and a minimum of 3 firefighters to be maintained in central business district, urban and suburban areas.

Policy 7-63 The County shall strive to achieve a total response time (dispatch plus running and set-up time) of five minutes in central business district, urban, and suburban areas for 90 percent of all emergency responses.

Policy 7-64 New development shall pay its fair share of costs for new fire protection facilities and services.

Policy 7-65 Needed upgrades to fire facilities and equipment shall be identified as part of project environmental review and area planning activities, in order to reduce fire risk and improve emergency response in the County.

Policy 7-70 The effectiveness of existing and proposed fire protection facilities shall be maximized by incorporating analysis of optimum fire and emergency service access into circulation system design.

Policy 7-71 A set of special fire protection and prevention requirements shall be developed for inclusion in development standards applied to hillside, open space, and rural area development.

Policy 7-73 Fire-fighting equipment access shall be provided to open space areas in accordance with the Fire Protection Code and to all future development in accordance with Fire Access Standards.

Policy 7-74 All new traffic signals shall be equipped with preemptive devices for emergency response services. Existing traffic signals significantly impacted by new development shall be retrofitted with preemptive devices.

Policy 7-75 Fire stations and facilities shall be considered consistent with all land use designations used in the General Plan and all zoning districts.

Policy 7-136 The environmental review process shall be utilized to monitor the ability of area schools to serve development.

Policy 7-142 Adequate provision of schools and other public facilities and services shall be assisted by coordinating review of new development with school districts the cities and other service providers through the Growth Management Program (see Chapter IV), the environmental review process, and other means.

3.12.4 - Impacts and Mitigation Measures

Significance Criteria

According to the CEQA Guidelines Appendix G Environmental Checklist, to determine whether impacts related to public services are significant environmental effects, the following question is analyzed and evaluated. Would the project:

> 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
d) Other public facilities

Approach to Analysis

Impacts on fire and police services were determined by evaluating the proposed project's effect on existing fire and police station response times. Projected population provided by the General Plan was also reviewed. In addition, fire and police (emergency) access at the project site was evaluated. Impacts on schools were determined by evaluating the proposed project's effect on existing school enrollment. Projected population and school enrollment data provided by the General Plan, WCCUSD, and Department of Education were also reviewed. Furthermore, impacts to police, fire, schools, and library facilities were also based on estimates and information received in response to request letters sent to each of these service providers for their input related to possible project impacts.

Specific Thresholds of Significance

For purposes of this analysis, the following thresholds are used to evaluate the significance of public service impacts resulting from implementation of the proposed project.

- Result in additional population or activities requiring fire protection services in a manner that necessitates the need for new or altered fire facilities, the construction of which would result in significant construction-related transportation, air quality, GHG emissions, energy, or noise impacts. Determination of significance of construction-related traffic, air quality, GHG emissions, or noise impacts is based on the respective specific thresholds of significance listed in Section 3.2, Air Quality; Section 3.5, Energy; Section 3.7, Greenhouse Gas Emissions; Section 3.11, Noise; and Section 3.13, Transportation.
- Result in additional population or activities requiring police protection services in a manner that necessitates need for new or altered police facilities, the construction of which would result in significant construction-related transportation, air quality, GHG emissions, energy, or noise impacts. Determination of significance of construction-related traffic, air quality, GHG emissions, or noise impacts is based on the respective specific thresholds of significance listed in Section 3.2, Air Quality; Section 3.5, Energy; Section 3.7, Greenhouse Gas Emissions; Section 3.11, Noise; and Section 3.13, Transportation.
- Result in additional population or activities requiring school services in a manner that necessitates need for new or altered school facilities, the construction of which would result in significant construction-related transportation, air quality, GHG emissions, energy, or noise impacts. Determination of significance of construction-related traffic, air quality, GHG emissions, or noise impacts is based on the respective specific thresholds of significance listed in Section 3.2, Air Quality; Section 3.5, Energy; Section 3.7, Greenhouse Gas Emissions; Section 3.11, Noise; and Section 3.13, Transportation.

- Result in additional population or activities requiring library services in a manner that necessitates need for new or altered library facilities, the construction of which would result in significant construction-related transportation, air quality, GHG emissions, energy, or noise impacts. Determination of significance of construction-related traffic, air quality, GHG emissions, or noise impacts is based on the respective specific thresholds of significance listed in Section 3.2, Air Quality; Section 3.5, Energy; Section 3.7, Greenhouse Gas Emissions; Section 3.11, Noise; and Section 3.13, Transportation.

Impact Evaluation

Need for New or Altered Fire Protection Facilities

Impact PUB-1: **The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection.**

Construction

The proposed project consists of the construction of three warehouse buildings. There are four fire stations in the vicinity of the project site: Richmond Fire Station No. 62, located on the northwest corner of the Hensley Street/7th Street intersection, is approximately 1.1 miles (driving distance) south of the project site; Richmond Fire Station No. 68 is 2.2 miles (driving distance) northeast of project site; San Pablo Fire Station No. 70, located on San Pablo Avenue, is 1.7 miles (driving distance) southeast of the project site. Additionally, a new CCCFPD San Pablo Station No. 70 has been constructed at the corner of 23rd Street and Market Avenue, approximately 1.4 miles (driving distance) southeast of the project site.[14]

As part of project construction, the proposed project would comply with the California Building Standards Code (CBC), which is adopted by the County Ordinance Code. In compliance with the California Fire Code, Part 9 of the CBC, during construction the proposed project would follow standards for fire safety related to provision of fire apparatus access and acquisition of building permits. Specifically, CBC Section 105.7.17 requires plans be submitted and a permit is required to install, improve, modify, or remove public or private roadways, driveways, and bridges for which fire department access is required by the Fire Code; this would ensure adequate driveway/entry turning radius, height clearance, and fire hydrant access for fire trucks and engines at the project site during construction. In addition, CBC Section 105.7.18 requires plans be submitted to the fire code official for all land developments or for the construction, alteration, or renovation of a building within the jurisdiction where a building permit is required; this would ensure that construction and alteration would not obstruct the CCCFPD from delivering adequate levels of fire protection services.[15] With an

[14] Contra Costa Herald. 2021. Construction completed; ribbon cut to open new Fire Station 70 in San Pablo. April 13. Website: http://contracostaherald.com/construction-completed-ribbon-cut-to-open-new-fire-station-70-in-san-pablo/. Accessed April 21, 2021.

[15] Contra Costa County. 2018. Contra Costa County Ordinance Code. Website: https://library.municode.com/ca/contra_costa_county/codes/ordinance_code?nodeId=TIT7BURE_DIV722FICO. Accessed September 8, 2020.

adequate fire engine response time to the project site and adherence to the aforementioned CBC Code sections, construction of the proposed project would not create the need for new or altered fire protection facilities. Therefore, construction impacts related to need for new or altered fire protection facilities would be less than significant.

Operation

The operation of three warehouses on the project site would result in new employees at the project site during daily operation, and in turn could result in an increase in calls for fire protection and emergency services. The nearest fire station, Richmond Fire Station No. 62, is located 1.1 miles (driving distance) south of the project site. Emergency vehicles would travel north along 7th Street and Fred Jackson Way to access the project site. As discussed under Impact TRANS-3 in Section 3.13, Transportation, based on this distance, the response time for a fire engine responding to the project site from Richmond Fire Station No. 62 traveling at an average speed of 35 miles per hour would be 1 minute, 53 seconds. Per Policy 7-62 of the General Plan, the County strives to reach a maximum running time of 3 minutes and/or 1.5 miles from the nearest fire station. As such, the response time from Richmond Fire Station No. 62 would be within an acceptable response time, and impacts would be considered less than significant.

As part of project operation, the proposed project would comply with the CBC, which is adopted by the Contra Costa County Ordinance. Specifically, in compliance with the California Fire Code, Part 9 of the CBC, during operation, the proposed project would follow standards for fire safety such as fire flow requirements for buildings, fire hydrant location and distribution criteria, automated sprinkler systems, and fire-resistant building materials. Primary access to the project site would be available via three driveways along Brookside Drive and three driveways along Fred Jackson Way. All driveways would be designed for truck access (40-50 feet wide), with the exception of a 26-foot-wide driveway along Fred Jackson Way directly west of Building 1, which would be used for standard automobile access only. Additionally, a 26-foot-wide fire lane will be included throughout the site to provide emergency access. Thus, during project operation, emergency vehicles would have adequate access, as also further discussed under Impact TRANS-3, Emergency Access, in Section 3.13, Transportation. As such, it is not expected that the project would adversely affect response times or increase the use of existing fire protection or emergency medical response facilities such that substantial physical deterioration, alteration, or expansion of these facilities would be required, thereby triggering environmental impacts. Furthermore, the project applicant would be required to pay applicable fees towards fire protection facilities and apparatus, so that the CCCFPD can maintain fire safety standards. Therefore, operational impacts related to need new or altered fire protection facilities would be less than significant.

Level of Significance

Less than significant impact.

Need for New or Altered Police Protection Facilities

Impact PUB-2: **The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection.**

Construction

The Office of the Sheriff would provide law enforcement services to the project site during construction. The nearest police station to the site is the Bay Station, located 2 miles north. Based on this distance, the response time for law enforcement responding to the project site from the Bay Station traveling at an average speed of 35 miles per hour would be 3 minutes, 42 seconds. Per Policy 7-63 of the General Plan, the County strives to achieve a total response time (dispatch plus running and set-up time) of 5 minutes for emergency responses. As such, the response time from the Bay Station would be within an acceptable response time, and impacts would be considered less than significant.

During construction, the proposed project would ensure that adequate access is available to the site and implement necessary security measures, such as provision of a project-boundary fence to prohibit access to persons other than construction personnel. With an adequate police response time to the project site and provision of adequate security measures, project construction would not create the need for new or altered police protection facilities, and impacts would be less than significant.

Operation

The operation of three warehouse buildings would result in new employees at the project site, which could result in an increase in calls for police protection services. Primary access to the project site during operation would be from the driveways along Fred Jackson Way and Brookside Drive.

The nearest police station to the project site is the Bay Station, located approximately 2 miles north. Based on this distance, the response time for law enforcement responding to the project site from the Bay Station traveling at an average speed of 35 miles per hour would be 3 minutes, 42 seconds. Per Policy 7-63 of the General Plan, the County strives to achieve a total response time (dispatch plus running and set-up time) of 5 minutes for emergency responses. As such, the response time from the Bay Station would be within an acceptable response time, and impacts would be considered less than significant.

General Plan Policy 7-57 indicates a sheriff facility standard of 155 square feet of sheriff station space per 1,000 persons of population. As discussed in Chapter 4, Effects Found not to be Significant, the proposed project's industrial warehouse use would not result in significant direct or indirect population growth. While there would be new employees associated with the proposed project, the new employees are not expected to result in an increase in population, as employees would likely come from the existing labor force. Therefore, the proposed project would not require additional sheriff station space.

As such, it is not expected that the proposed project would adversely affect service ratios or response times or increase the use of existing police protection facilities such that substantial physical deterioration, alteration, or expansion of these facilities would be required, thereby triggering environmental impacts. Furthermore, the project applicant would be required to pay applicable fees to the Office of the Sheriff to help provide for costs associated with a police facility building and equipment to serve additional demands for police services.

With adequate project site access and payment of impact fees to the Office of the Sheriff, operation of the proposed project would not create a need to construct new or expand existing police protection facilities. Therefore, operational impacts related to need for new or altered police protection facilities impacts would be less than significant.

Level of Significance

Less than significant impact.

Need for New or Altered School Facilities

Impact PUB-3:	**The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities, need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for schools.**

Construction

Construction workers are anticipated to be sourced from the existing workforce in the community and thus construction of the project is not expected to significantly increase student enrollment. No respective construction impacts would occur.

Operation

The project site is located within the WCCUSD. The project proposes the construction of three warehouse buildings. As discussed in Chapter 4, Effects Found not to be Significant, the proposed project's industrial warehouse use would not result in significant direct or indirect population growth. Because the proposed project is expected to generate employment from the existing workforce, any increased student enrollment from implementation of the proposed project would not exceed the existing capacity of public schools within the WCCUSD. Therefore, the proposed project would not result in a substantial increase in school enrollment or require the expansion of construction of new school facilities. Operational impacts related to the expansion or construction of school facilities would be less than significant.

Level of Significance

Less than significant impact.

Need for New or Altered Library Facilities

Impact PUB-4:	**The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered library facilities, need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for library facilities.**

Construction

Construction workers are anticipated to be sourced from the existing workforce in the community and thus construction of the project is not expected to significantly increase demand for library facilities. No respective construction impacts would occur.

Operation

The project site is located within the County Library system, which provides public library services to the unincorporated and incorporated areas of the County. The nearest library to the project site is the San Pablo Library, located 1.2 miles to the southeast.

Correspondence with County Librarian, Melinda Cervantes, determined that existing facilities would be able to accommodate the proposed project.[16] As discussed in Chapter 4, Effects Found not to be Significant, the proposed project's industrial warehouse use would not result in significant direct or indirect population growth. Because the proposed project is expected to generate employment from the existing workforce, any increase in the use of existing libraries within the County would be negligible and would not create a need to construct new or expand existing library facilities. Therefore, operational impacts related to need for new or altered public library facilities would be less than significant.

Level of Significance

Less than significant impact.

3.12.5 - Cumulative Impacts

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 topical areas, they are discussed separately.

The development projects listed in Chapter 3, Environmental Impact Analysis, Table 3-1, are mostly industrial and commercial in nature. Of the projects listed in Table 3-1, Projects 1, 22, 25, 27, 28, 29, 32, 34, 37, 39, and 42 are residential projects, most of which are located within the City of Richmond. As such, cumulative development could increase population within the project vicinity by approximately 8,635 persons.[17]

[16] Contra Costa County Library. 2019. Email Correspondence with Melinda Cervantes, County Librarian. September 25, 2019.
[17] Calculation: All cumulative residential units (2,947) x average persons per household in City of Richmond per U.S. Census Bureau (2.93) = 8,635 persons.

Fire Protection Facilities

The geographic scope of the cumulative fire protection services analysis is the CCCFPD service area. The CCCFPD provides fire protection and emergency medical services to the City of Richmond and the surrounding unincorporated areas of the County.

As discussed under Impact PUB-1, the operation of three warehouses on the project site would result in new employees at the project site during daily operation, and in turn could result in an increase in calls for fire protection and emergency services. However, with adherence to applicable building codes, the proposed project's design features that allow for emergency vehicle access to the site, and payment of applicable fees towards fire protection facilities and apparatus, the proposed project would not create a need to construct new or expand existing fire protection of emergency medical service facilities, and impacts would be less than significant.

Other cumulative development listed in Table 3-1, primarily residential projects that could increase population in the project vicinity would result in an increased demand for fire protection facilities. To help offset the increased demand, the cumulative projects would be required to pay all applicable fees to the CCCFPD. All developments would also adhere to the California Fire Code, Part 9 of the CBC in terms of meeting standards for fire safety such as fire flow requirements for buildings, fire hydrant location and distribution criteria, automated sprinkler systems, and fire-resistant building materials.

With adherence to CBC sections and payment of applicable fees, cumulative projects would not result in need for new or altered fire protection or emergency medical facilities. Thus, there would be a less-than-significant cumulative impact regarding need for new or altered fire protection and emergency medical facilities.

Police Protection Facilities

The geographic scope of the cumulative police protection services analysis is the County Office of the Sheriff service area. The Office of the Sheriff provides law enforcement to unincorporated areas of the County and serves over one million County residents.

As discussed under Impact PUB-2, while there would be new employees associated with the proposed project, the new employees are not expected to result in a significant increase in population, as employees would likely come from the existing labor force. As such, it is not expected that the proposed project would adversely affect service ratios or response times or increase the use of existing police protection facilities such that substantial physical deterioration, alteration, or expansion of these facilities would be required. Furthermore, the project applicant would be required to pay applicable fees to the Office of the Sheriff to help provide for costs associated with a police facility building and equipment to serve additional demands for police services.

Other cumulative development listed in Table 3-1, primarily residential projects which could increase population in the project vicinity, would result in an increased demand for police protection facilities. To help offset the increased demand for police protection facilities, the cumulative projects would be required to pay applicable fees to the Office of the Sheriff. All developments would also be reviewed

for impacts on law enforcement services and would be required to address any potential impacts with mitigation. Because demand for law enforcement services is highly dependent on a number of factors that vary substantially by project (clientele, hours of operation, crime prevention measures, etc.), it is unlikely that there would be substantial overlap in demand that would result in a cumulatively significant impact such that new police protection facilities are necessary.

With payment of applicable fees, cumulative projects would not result in need for new or altered police protection facilities. Thus, there would be a less-than-significant cumulative impact regarding need for new or altered police protection facilities.

School Facilities

The geographic scope of the cumulative school facilities analysis is the WCCUSD. The WCCUSD provides school services to West Contra Costa County, including the cities of El Cerrito, San Pablo, Pinole, and Hercules, and unincorporated areas of Bayview-Montalvin Manor, East Richmond Heights, El Sobrante, Kensington, North Richmond, and Tara Hills.

As discussed under Impact PUB-3, the proposed project would not result in significant direct or indirect population growth. Because the proposed project is expected to generate employment from the existing workforce, any increased student enrollment from implementation of the proposed project would not exceed the existing capacity of public schools within the WCCUSD. Therefore, the proposed project would not result in a substantial increase in school enrollment or require the expansion of construction of new school facilities.

Other cumulative development listed in Table 3-1, primarily residential projects which could increase population in the project vicinity, would result in an increased demand for school facilities. To help offset the increased demand for school facilities, the cumulative projects would be required to pay development impact fees towards the WCCUSD. Under State law, this is the exclusive means of mitigating impacts to school facilities due to increased enrollment. As part of the project entitlement process, the cumulative project applicants would be responsible for paying their fair share of these school facility fees.

With payment of impact development fees, cumulative projects would not result in need for new or altered school facilities. Thus, there would be a less-than-significant cumulative impact regarding need for new or altered school facilities.

Library Facilities

The geographic scope of the cumulative library facilities analysis is the County Library system, which provides public library services to the unincorporated and incorporated areas of the County. As described under Impact PUB-4, because the proposed project is expected to generate employment from the existing workforce, any increase in the use of existing libraries within the County would be negligible and would not create a need to construct new or expand existing library facilities. Other cumulative development listed in Table 3-1, primarily residential projects which could increase population in the project vicinity, would result in an increased demand for library facilities. All developments would be reviewed for impacts on library facilities and would be required to address

any potential impacts with mitigation. Thus, there would be a less than significant cumulative impact with regard for the need for new or altered library facilities.

Level of Cumulative Significance before Mitigation

Less than significant impact.

THIS PAGE INTENTIONALLY LEFT BLANK

3.13 - Transportation

3.13.1 - Introduction

This section describes existing conditions related to transportation in the project area as well as the relevant regulatory framework. This section also evaluates the possible impacts related to transportation that could result from implementation of the proposed project. The descriptions and analysis in this section are based on the project-specific Transportation Impact Assessment (TIA) (included as Appendix I).

Per Senate Bill (SB) 743 and California Environmental Quality Act (CEQA) Guidelines Section 15064.3, for land use projects, intersection operations impacts are excluded from CEQA consideration. As such, this section does not include a discussion of Level of Service (LOS). However, for informational purposes, LOS is included in the TIA to inform the proposed project's conditions of approval related to intersection improvement measures to ensure consistency with the Contra Costa County General Plan (General Plan) (see Appendix I).

The following comments were received in response to the Notice of Preparation (NOP) related to transportation:

- Requests that the number of parking spaces be reduced to comply with Contra Costa County Ordinance Code.
- Asks that the Draft Environmental Impact Report (Draft EIR) include a Vehicle Miles Traveled (VMT) analysis.
- Expresses concern regarding trucks routing through neighborhood.
- States concern regarding transportation impacts from multiple construction projects occurring at once in the same area.

3.13.2 - Existing Conditions

Roadway System

The roadway system that serves the North Richmond area is summarized as follows and is depicted in Exhibit 3.13-1.

Interstate 80

The closest regional roadway is Interstate 80 (I-80), an eight-lane freeway with a speed limit of 65 miles per hour (mph). I-80 primarily runs east/west connecting Contra Costa County (County) to regional destinations such as San Francisco to the southwest and Fairfield to the north. I-80 runs north/south in the project vicinity and is located 1.75 miles east of the project site.

Interstate 580

Interstate 580 (I-580) is a six-lane freeway with a speed limit of 65 mph that primarily runs east/west connecting the County to Marin County to the west across the San Francisco Bay, and to Oakland to the south. I-580 is located 2.5 miles south of the project site.

Richmond Parkway

Richmond Parkway is the main north-south roadway in the project vicinity. Richmond Parkway connects I-80 in the northeast to I-580 in the southwest (via Canal Boulevard). Richmond Parkway is identified by the California Department of Transportation (Caltrans) as the advised connecting route between I-80 north of Richmond and the I-580/Richmond-San Rafael Bridge corridor.

Richmond Parkway is a four-lane access-controlled expressway in the project vicinity with signalized intersections at access points. The posted speed limits along Richmond Parkway in the project vicinity are 50 mph between Sab Pablo Avenue and Hensley Street, and 45 mph south of Hensley Street to Ohio Avenue. Trucks are prohibited on Richmond Parkway between Castro Street and Ohio Avenue.

Parr Boulevard

Parr Boulevard is an east-west two-lane road along the south frontage of the project site. It extends between the West County Waste Transfer Station in the west and Rumrill Boulevard in the east. The posted speed limit is 35 mph.

Fred Jackson Way

Fred Jackson way is a north-south two-lane roadway parallel to Richmond Parkway between Parr Boulevard in the north and Hensley Street in the south. The roadway provides a connection (via Parr Boulevard) between the project site and the unincorporated residential community of North Richmond. The posted speed limit is 25 mph.

Rumrill Boulevard

Rumrill Boulevard is a north-south two-lane road in the project vicinity connecting San Pablo Avenue in the north-east and Costa Avenue in the south. The posted speed limit is 30 mph.

Existing Public Transit Service and Facilities

North Richmond is primarily served by two major transit providers: Bay Area Rapid Transit (BART) and Alameda-Contra Costa (AC) Transit. BART provides commuter rail service, and AC Transit provides local and regional bus service. Existing transit routes in the area shown on Exhibit 3.13-2.

Bay Area Rapid Transit

BART provides rail transit service within the County, and regional connections to Alameda, San Francisco, and San Mateo Counties. The Richmond/Daly City—Millbrae Line (Red line), Warm Springs/Richmond Line (Orange line), and Antioch/San Francisco International Airport—Millbrae line (Yellow line) are the train lines that serve the 12 stations within the County. The City of Richmond is served by the Richmond-Fremont line and the Richmond-Millbrae line. The project site is located approximately 2.8 miles northwest of the Richmond BART Station.

Alameda-Contra Costa Transit

AC Transit operates several local bus lines from the Richmond BART Station, with Routes 71, 76, and 376 operating closest to the project site. The closest bus stop for these routes is at the Fred Jackson Way/Market Avenue intersection, approximately 0.4 mile south of the project site.

Bicycle Facilities

The Contra Costa Transportation Authority (CCTA) Countywide Bicycle and Pedestrian Plan identifies the following four bikeway classifications from Chapter 1000 of the Caltrans Highway Design Manual:

- Class I Bikeway (Bicycle Path) provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.
- Class II Bikeway (Bicycle Lane) provides a restricted right-of-way and is designated for the use of bicycles with a striped lane on a street or highway. Bicycle lanes are generally 4 to 6 feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-flow are permitted.
- Class III Bikeway (Bicycle Route) provides for a right-of-way designated by signs or pavement markings (sharrows) for shared use with pedestrians or motor vehicles. Sharrows are a type of pavement marking (bike and arrow stencil) placed to guide bicyclists to the best place to ride on the road, avoid car doors, and remind drivers to share the road with cyclists.
- Class IV Bikeway, also known as "cycle tracks" or "protected bike lanes," provide a right-of-way designated exclusively for bicycle travel within a roadway and which are protected from other vehicle traffic with devices, including, but not limited to, grade separation, flexible posts, inflexible physical barriers, or parked cars.

The Wildcat Creek Trail, a Class I bikeway,[1] is located along the north side of Wildcat Creek, extending from Richmond Parkway to Giaramita Street, and also extending along Richmond Parkway between Goodrick Avenue and West Ohio Avenue. Class II bike lanes are provided along Fred Jackson Way south of Wildcat Creek to Grove Avenue. However, there are no bicycle facilities that directly connect the project site to the bicycle system. Exhibit 3.13-3 shows the existing bicycle facilities in the project vicinity.

As part of the approved Fred Jackson Way First Mile/Last Mile Project (State Clearinghouse [SCH] No. 2019069019), new buffer bike lanes will be provided by the Contra Costa County Public Works Department along both sides of Fred Jackson Way between Brookside Drive and Grove Avenue. Construction is expected to be completed by winter 2022.

Pedestrian Facilities

Pedestrian facilities include sidewalks, shared-use pathways, crosswalks, and pedestrian signals. Sidewalks are not provided on the Fred Jackson Way or Brookside Drive frontages of the project site. Nearby existing pedestrian facilities include discontinuous sidewalks along Fred Jackson Way south of the project site and a multiuse pathway along the north side of Wildcat Creek that extends from Richmond Parkway to Giaramita Street. Crosswalks are not provided at the intersections of Fred Jackson Way/Brookside Drive and Fred Jackson Way/Pittsburg Avenue. Exhibit 3.13-3 shows the existing pedestrian facilities in the project vicinity.

[1] A Class I bikeway provides a completely separate right-of-way and is designated for the exclusive use of bicycle and pedestrians with vehicle and pedestrian cross-flow minimized.

As part of the approved Fred Jackson Way First Mile/Last Mile Project (State Clearinghouse [SCH] No. 2019069019), the Contra Costa County Public Works Department will install a temporary path along the east side of Fred Jackson Way, between Brookside Drive and Wildcat Creek. Construction is expected to be completed by winter 2022.

3.13.3 - Regulatory Framework

Federal

No federal plans, policies, regulations, or laws related to transportation are applicable to the proposed project.

State

California Department of Transportation Level of Service Goals

Caltrans builds, operates, and maintains the State highway system, including the interstate highway system. Caltrans mission is to improve mobility Statewide. Caltrans operates under strategic goals to provide a safe transportation system, optimize throughput, and ensure reliable travel times, improve the delivery of State highway projects, provide transportation choices, and improve and enhance the State's investments and resources. Caltrans controls the planning of the State highway system and accessibility to the system. Caltrans establishes LOS goals for highways and works with local and regional agencies to assess impacts and develop funding sources for improvements to the State highway system. Caltrans requires encroachment permits from agencies or new development before any construction work may be undertaken within the State's right-of-way. For projects that would impact traffic flow and levels of services on State highways, Caltrans would review measures to mitigate the traffic impacts.

Senate Bill 743

In September 2013, the Governor's Office signed SB 743 into law. The mandate of SB 743 was to devise an alternative traffic impact evaluation criterion that would promote the reduction of greenhouse gas (GHG) emissions as well as foster the development of multimodal transportation networks and a diversity of land uses. Public Resources Code Section 21099, enacted by SB 743, is to limit the use of LOS standards in CEQA analysis and to promote the use of standards that place greater focus on implementing the State's goals of reducing GHG emissions, promoting transit, and increasing infill development.

SB 743 further suggested that a measurement such as VMT would be an appropriate method to evaluate traffic impacts (State CEQA Guidelines § 15064.3). VMT is defined as a measurement of miles traveled by vehicles within a specified region and for a specified time period. VMTs are calculated based on individual vehicle trips generated and their associated trip lengths. The justification for this paradigm shift is that auto delay/LOS impacts may lead to improvements that increase roadway capacity and therefore sometimes induce more traffic and greenhouse gas emissions as a result. In contrast, constructing projects in VMT-efficient locations assists California in meeting GHG emissions targets.

In December 2018, the California Natural Resources Agency certified and adopted the CEQA Guidelines update, including a new Guidelines section implementing Senate Bill 743 (State CEQA Guidelines § 15064.3). In implementing Public Resources Code Section 21099, State CEQA Guideline Section 15064.3 provides that VMT is generally "the most appropriate measure of transportation impacts," and that except for roadway capacity projects, a project's effect on traffic delays "shall not constitute a significant environmental impact." (14 California Code of Regulations [CCR] § 15064.3(a)).

Accordingly, as of July 1, 2020, under the statute and the Guidelines, localities are required to rely on VMT instead of traffic delay as the primary metric for evaluating transportation impacts in CEQA documents. The existence of automobile delay impacts, or the adequacy of an LOS analysis, is not a basis under CEQA for challenging an EIR (*Citizens for Positive Growth & Preservation v City of Sacramento (2019)* 43 CA 5th 609, 624).

Regional

Contra Costa Transportation Authority

CCTA is the Congestion Management Agency for the County. CCTA implements the Richmond Area Community-Based Transportation Plan Program, which focuses on transportation improvements to address the mobility needs of economically disadvantaged communities in the City of Richmond, the City of San Pablo, the City of El Cerrito, and portions of unincorporated Contra Costa County. The Plan evaluates transportation gaps and barriers identified by the community, develops solutions and projects to address these challenges, and identifies possible funding sources to pay for these solutions and projects.[2]

West Contra Costa Transportation Advisory Committee

The West Contra Costa Transportation Advisory Committee (WCCTAC) is one of four Regional Transportation Planning Committees (RTPCs) in Contra Costa County and represents the West Contra Costa sub-area. The Committees were created in 1988 to guide transportation projects and programs included in the Measure C, ½ cent, transportation sales tax approved by Contra Costa voters. Measure C was succeeded by Measure J in 2004. WCCTAC aims to improve the transportation system in West Contra Costa through the development and coordination of transportation plans, projects, programs, and policies for the West Contra Costa area. In addition to directing some funds from Measure J, WCCTAC administers the Sub-regional Transportation Mitigation Fee Program which collects impact fees from development projects built in the West Contra County and applies them to transportation improvements.

West County Action Plan for Routes of Regional Significance

The West County Action Plan aims to reduce the impact of new development on freeways, arterials, transit, and major trails to create a balanced, safe, and efficient transportation system. One of the key elements of the West County Action Plan is the designation of the Routes of Regional Significance. The list of Routes of Regional Significance listed in the West County Action Plan include Appian Way, Carlson Boulevard, Central Avenue, Cummings Skyway, Interstate 80, Interstate 580, Richmond

[2] Contra Costa Transportation Authority (CCTA). Richmond Area Community-Based Transportation Plan Program. Website: https://ccta.net/2019/07/01/richmond-area-community-based-transportation-plan-program/. Accessed April 20, 2021.

Parkway, San Pablo Avenue, San Pablo Dam Road, State Route 4, and 23rd Street. The West County Action Plan establishes Multimodal Transportation Service Objectives for the Routes of Regional Significance and actions for achieving those objectives. Lastly, the West County Action Plan identifies a development mitigation program and other plans, programs, and studies to address transportation and growth management issues. The West County Action Plan was adopted in September 2017.[3]

Local

Contra Costa County Transportation Analysis Guidelines

Contra Costa County has adopted VMT-based thresholds for the evaluation of CEQA impacts to the transportation system, which are documented in the Contra Costa County Transportation Analysis Guidelines.[4] The Transportation Analysis Guidelines identifies VMT Screening Criteria, VMT Metrics, VMT Forecasting, VMT Thresholds, and VMT Mitigation.

Contra Costa County General Plan

Transportation and Circulation Element

The Transportation and Circulation Element includes fundamental concepts that shape the element and support a "well-planned and integrated multimodal transportation network."[5] The following are fundamental concepts recognized in developing the Transportation and Circulation Element:

- Improving the quality, safety, and reliability of transit, walking, and bicycle facilities in the County will both allow and encourage greater use of these alternatives.
- Streets should be designed and maintained according to the "Complete Streets" philosophy.

The General Plan sets forth the following goals, policies, and implementation measures that are relevant to transportation:

Goal 5-A To provide a safe, efficient and integrated multimodal transportation system.

Goal 5-C To balance transportation and circulation needs with the desired character of the community.

Goal 5-D To maintain and improve air quality above air quality standards.

Goal 5-E To permit development only in locations of the County where appropriate traffic Level of Service standards are ensured.

Goal 5-I To encourage use of transit.

Goal 5-J To reduce single-occupant auto commuting and encourage walking and bicycling.

[3] Fehr & Peers. 2014. West County Action Plan for Routes of Regional Significance. January. Website: https://www.wcctac.org/files/managed/Document/239/West%20County%20Action%20Plan%20Final%20Draft%2001-2014.pdf. Accessed June 17, 2021.
[4] Contra Costa County. 2020. Contra Costa County Transportation Analysis Guidelines. June 23.
[5] Contra Costa County Department of Conservation and Development. 2005. Contra Costa County General Plan. January 18.

Goal 5-K To provide basic accessibility to all residents, which includes access to emergency services, public services and utilities, health care, food and clothing, education and employment, mail and package distribution, freight delivery, and a certain amount of social and recreational activities.

Goal 5-L To reduce greenhouse gas emissions from transportation sources through provision of transit, bicycle, and pedestrian facilities.

Policies

Policy 5-3 Transportation facilities serving new urban development shall be linked to and compatible with existing and planned roads, bicycle facilities, pedestrian facilities and pathways of adjoining areas, and such facilities shall use presently available public and semi-public rights of way where feasible.

Policy 5-4 Development shall be allowed only when transportation performance criteria are met and necessary facilities and/or programs are in place or committed to be developed within a specified period of time.

Policy 5-5 Right-of-way shall be preserved to meet requirements of the Circulation Element and to serve future urban areas indicated in the Land Use Element.

Policy 5-7 Through-traffic along arterials shall be improved by minimizing the number of new intersecting streets and driveways; and, when feasible, by consolidating existing street and driveway intersections.

Policy 5-8 Access points on arterials and collectors shall be minimized.

Policy 5-13 The use of pedestrian and bicycle facilities shall be encouraged. Proper facilities shall be designed to accommodate bikes, pedestrians, and transit.

Policy 5-14 Physical conflicts between pedestrians, bicyclists, and vehicular traffic, bicycles, and pedestrians shall be minimized.

Policy 5-15 Adequate lighting shall be provided for pedestrian, bicyclist, and vehicular, safety, consistent with neighborhood desires.

Policy 5-16 Curbs and sidewalks shall be provided in appropriate areas.

Policy 5-17 Emergency response vehicles shall be accommodated in development project design.

Policy 5-18 The design and the scheduling of improvements to arterials and collectors shall give priority to intermodal safety over other factors including capacity.

Policy 5-20 New development (including redevelopment and rehabilitation projects) shall contribute funds and/or institute programs to reduce parking demand and/or provide adequate parking.

Policy 5-21 New development shall contribute funds and/or institute programs to provide adequate bicycle and pedestrian facilities where feasible.

Policy 5-23 All efforts to develop alternative transportation systems to reduce peak period traffic congestion shall be encouraged.

Policy 5-24 Use of alternative forms of transportation, such as transit, bike and pedestrian modes, shall be encouraged in order to provide basic accessibility to those without access to a personal automobile and to help minimize automobile congestion and air pollution.

Implementation Measure

Implementation Measure 5-ag

Design and allow for on-road bikeways on arterials and collectors as an alternative to car travel where this can be safely accommodated and off-street bikeways where on-road facilities cannot be safely accommodated or where a dedicated non-motorized facility is otherwise justified.

Contra Costa Countywide Bicycle and Pedestrian Plan

To support and encourage walking and bicycling in the County, on July 18, 2018, the CCTA adopted the 2018 Contra Costa Countywide Bicycle and Pedestrian Plan (CBPP). The CCTA adopted its first CBPP in 2003 and updated it in 2009. The CBPP builds on and expands the goals, policies, and strategies of the CCTA's Comprehensive Transportation Plan (CTP). Both plans set goals for increasing walking and bicycling and identify actions the Authority and its partners should take to achieve them.

Complete Streets Policy of Contra Costa County

The Complete Streets Policy was adopted by Resolution No. 2016/374 by the Board of Supervisors of Contra Costa County on July 12, 2016.

A. Complete Streets Principles

1. **Complete Streets Serving All Users.** Contra Costa County expresses its commitment to creating and maintaining Complete Streets that provide safe, comfortable, and convenient travel along and across right-of-way (including streets, roads, highways, bridges, paths, and other portions of the transportation system) through a comprehensive, integrated transportation network that serves all categories of users, including pedestrians, bicyclists, persons with disabilities, motorists, movers of commercial goods, users and operators of public transportation, seniors, children, youth, students and families.
2. **Context Sensitivity.** In planning and implementing street projects, departments and agencies of Contra Costa County shall maintain sensitivity to

local conditions in both residential and business districts as well as urban, suburban, and rural areas, and shall work with residents, merchants, school representatives, and other stakeholders to ensure that a strong sense of place ensues. Improvements that will be considered include sidewalks, shared use paths, separated bikeways/cycle tracks, bicycle lanes, bicycle routes, paved shoulders, street trees and landscaping, planting strips, accessible curb ramps, crosswalks, refuge islands, pedestrian signals, signs, street furniture, bicycle parking facilities, public transportation stops and facilities, transit priority signalization, traffic calming circles, transit bulb-outs, road diets and other features assisting in the provision of safe travel for all users and those features and concepts identified in the Contra Costa County Complete Streets General Plan Amendment of April 2008.

3. **Complete Streets Routinely Addressed by All Departments.** All departments and agencies of Contra Costa County shall work towards making Complete Streets practices a routine part of everyday operations, approach every relevant project, program, and practice as an opportunity to improve streets and the transportation network for all categories of users/modes, and work in coordination with other departments, agencies, and jurisdictions to maximize opportunities for Complete Streets, connectivity, and cooperation. Example activities include, but are not necessarily limited to the following: pavement resurfacing, restriping, accessing above and underground utilities, signalization operations or modifications, maintenance of landscaping/related features, and shall exclude minor (catch basin cleaning, sign replacement, pothole repair, etc.) maintenance and emergency repairs.
4. **All Projects and Phases.** Complete Streets infrastructure sufficient to enable reasonably safe travel along and across the right-of-way for each category of users shall be incorporated into all planning, funding, design, approval, and implementation processes for any construction, reconstruction, retrofit, maintenance, operations, alteration, or repair of streets (including streets, roads, highways, bridges, and other portions of the transportation system), except that specific infrastructure for a given category of users may be excluded if an exemption is approved via the process set forth in Section C.1 of this policy.

B. Implementation

1. **Plan Consultation and Consistency.** Maintenance, planning, and design of projects affecting the transportation system shall be consistent with the Contra Costa County General Plan, as well as other applicable bicycle, pedestrian, transit, multimodal, best practices, and other relevant documents. Where such consistency cannot be achieved without negative consequences, consistency shall not be required if the head of the relevant departments, or designees, provides written approval explaining the basis of such deviation.
2. **Street Network/Connectivity.** As feasible, and as opportunities arise, Contra Costa County shall incorporate Complete Streets infrastructure into existing streets to improve the safety and convenience of users, with the particular goal of creating a connected network of facilities accommodating each

category of users, increasing connectivity across jurisdictional boundaries, and for accommodating existing and anticipated future areas of travel origination or destination. A well connected network should include non-motorized connectivity to schools, parks, commercial areas, civic destinations and regional non-motorized networks on both publicly owned roads/land and private developments (or redevelopment areas).

3. **Countywide Bicycle Advisory Committee (CBAC) Consultation.** The CBAC may review the design principles used by staff to accommodate motor vehicle, bicycle, pedestrian, and transit modes of travel when reviewing projects. The CBAC will be engaged early in the planning and design stage to provide an opportunity for comments and recommendations regarding Complete Street features of major public transportation projects.
4. **Evaluation.** The County will establish a means to collect data and evaluate the implementation of complete streets policies. For example, tracking the number of miles of paths, bike lanes and sidewalks, numbers of street crossings, signage etc.

C. Exceptions

1. **Required Findings and Leadership Approval for Exemptions.** Plans or projects that seek exemptions from incorporating Complete Streets design principles must provide a written explanation of why accommodations for all modes were not included in the project. An exemption may be granted by the Director of Public Works or Director of Conservation and Development upon finding that inclusion of Complete Streets design principles are not possible or appropriate under one or more of the following circumstances: 1) bicycles or pedestrians are not permitted on the subject transportation facility pursuant to state or local laws; 2) inclusion of Complete Streets design principles would result in a disproportionate cost to the project; 3) there is a documented absence of current and future need and demand for Complete Streets design elements on the subject roadway; and, 4) one or more significant adverse effects would outweigh the positive effects of implementing Complete Streets design elements. Plans or projects that are granted exceptions must be made available for public review.

Contra Costa County Ordinance Code

Chapter 74-4.002 of the Ordinance Code requires that newly constructed buildings either provide infrastructure to facilitate future installation and use of electric vehicle (EV) chargers or provide electrical vehicle charging spaces equipped with fully-operational EV chargers, in accordance with the California Green Building Standards Code.

Chapter 82-16.404 of the Ordinance Code requires that landscaped areas be provided within any off-street parking area other than an enclosed parking structure.

Chapter 82-16.412 of the Ordinance Code sets forth the amounts of long-term and short-term bicycle parking that a project must provide. The Ordinance Code requires industrial/manufacturing land uses to provide one space per 15,000 square feet of floor area for long-term parking, or two

spaces (whichever is greater), and one space per 20,000 square feet of floor area for short-term parking, or two spaces (whichever is greater).

Chapter 82-32 of the Ordinance Code sets for the Transportation Demand Management (TDM) requirements that apply to all residential and nonresidential development projects.

3.13.4 - Methodology

Fehr & Peers prepared a TIA that evaluated project-related transportation impacts. The complete TIA is provided in Appendix I. The methodology is summarized as follows:

Trip Generation

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. Project trip generation estimates are prepared for the 1-hour peak period during the weekday morning (AM) and evening (PM) commute when traffic volumes on the adjacent streets are typically the highest. However, given the uncertainty of the tenants for the proposed project, County staff indicated that the trip generation estimate should be conducted assuming that the AM and PM peak hours of trip generation occur during the one-hour peak period of weekday morning and evening commute traffic.

The trip generation estimates for the project were prepared using data from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition (ITE Manual). Based on the assumed warehouse/distribution center land use type, data from Land Use Code 154–High-Cube Transload and Short-Term Storage Warehouse was used. Additionally, the office uses on-site have been analyzed separately using data from the Land Use Code 710 – General Office. This approach, selected in coordination with County staff due to the uncertainty of future tenants, is a more conservative approach compared to other studies analyzing proposed warehouse/distribution center projects in the North Richmond area.

Truck and other heavy vehicle trips are expected to account for approximately 32.2 percent of daily vehicle trips for the warehouse/distribution center uses. As noted in the 2010 Highway Capacity Manual, truck and other heavy vehicle trips should be converted to Passenger Car Equivalents (PCEs) using a factor of 2.0 PCEs per truck or heavy vehicle.

Vehicle trip generation estimates for the full buildout of the proposed project are presented in Table 3.13-1. At buildout, the project is anticipated to add 1,340 weekday daily trips, 131 AM peak-hour trips and 156 PM peak-hour vehicle trips (all trip values measured in PCEs) to the roadway network. The proposed project is expected to generate approximately 240 daily truck trips, of which 19 would occur during the AM peak-hour and 25 would occur during the PM peak-hour. In the table below, the base value of the truck trips is included in the Warehouse/Distribution Center line item, while the additional PCEs required to be added to the trip generation calculation to reflect the trips are included in the PCE Adjustment line item. Thus, the project Warehouse/Distribution Center component generates 740 total vehicle trips per day (as measured in absolute vehicles) and 980 PCEs.

Table 3.13-1: Project Trip Generation

Land Use	Quantity[1]	Daily	Weekday AM Peak-hour			Weekday PM Peak-hour		
			In	Out	Total	In	Out	Total
Warehouse/Distribution Center[2]	522.7	740	52	11	63	28	56	84
Passenger Car Equivalency Adjustment[3]		240	16	3	19	8	17	25
Distribution Center Subtotal		**980**	**68**	**14**	**82**	**36**	**73**	**109**
Office[4]	32.8	360	43	6	49	8	39	47
Total Net New Trips:		***1,340***	***111***	***20***	***131***	***44***	***112***	***156***

Notes:
[1] Land use quantities expressed in units of 1,000 square feet gross floor area.
[2] Trip generation and mode split estimated using data from the Institute of Transportation Engineers' *Trip Generation Manual, 10th Edition*, using Land Use Code 154–High-Cube Transload and Short-Term Storage Warehouse.
[3] Passenger Car Equivalent (PCE) is a metric used to assess the impact of a mode as compared to a single car. Truck trips = 2.00 passenger car trips (*Highway Capacity Manual*).
[4] Trip generation estimated using data from the Institute of Transportation Engineers' *Trip Generation Manual, 10th Edition*, using Land Use Code 710–General Office.
Source: Fehr & Peers. 2021. CenterPoint North Richmond Development TIA – Revised Final. April 20, 2021.

Trip Distribution and Assignment

Project trip distribution refers to the directions of approach and departure that vehicles would take to access and leave the site. A set of project trip distribution assumptions were developed based on existing travel patterns in the study area, the trip-making characteristics of the proposed project, and the location of complementary land uses. The resulting trip distribution is shown on Exhibit 3.13-4. This trip distribution is similar to the trip distribution pattern assumed for other recently completed TIAs for distribution-related uses in the North Richmond industrial area.

While project trip distribution provides information regarding large-scale trip patterns, project trip assignment refers to project trip loading on specific roadway segments, as well as intersection turning movements in the study area. As trucks account for a large percentage of the project's vehicle trip generation, the project trip assignment accounts for the designated truck routes in the area.

Truck access in California is regulated through Federal and State Law. The (Federal) Surface Transportation Assistance Act (STAA) governs the movement of trucks and trailers with specific combinations, lengths and widths. An STAA access application was approved by Caltrans as noted in an April 13, 2018, letter from Caltrans to the City of Richmond, deeming that that the I-80/Richmond Parkway interchange, the I-580 Castro Street interchange, the Richmond Parkway corridor between I-80 and I-580, and a portion of Parr Boulevard are geometrically adequate to accommodate STAA truck access. Although the project applicant for the CenterPoint project has not sponsored a Caltrans application for STAA truck access connecting the project site to Richmond Parkway (via any combination of Pittsburg Avenue, Parr Boulevard, or Brookside Drive), STAA access is not needed for project operations. Exhibit 3.13-5 presents the roadways that provide STAA and California Legal truck access. Trucks are prohibited on Richmond Parkway between Castro Street and Ohio Avenue.

The PCE vehicle trips used in the project trip assignment are shown on Exhibit 3.13-6.

Vehicle Miles Traveled

Baseline Conditions

The CCTA travel demand model covers the entire nine-county Metropolitan Transportation Commission (MTC) region and provides information regarding the characteristics of home-based work trips made by employees throughout the Bay Area. Given the project's location in Contra Costa County, and the high likelihood that the CCTA travel demand model will be used by the County in the future to evaluate project-by-project effects on VMT in the future, the CCTA travel demand model was chosen to assess baseline home-based work (HBW) trip lengths and average HBW trip VMT per worker in the Bay Area.

HBW trips were analyzed as the name home-based work implies, and these trips are generally commute trips. CEQA Guidelines Section 15064.3 has generally been interpreted to mean that the VMT analysis in the CEQA Transportation section should be focused on employee commute trips for land uses that are employment-focused.

Data from the CCTA travel demand model indicates that the average nine-county MTC region HBW VMT per worker is 15.0 HBW trip VMT per worker. It is noted that this average takes into account all workers, including those who commute by automobile, as well as workers that commute (either in full or in part) by modes that do not generate automobile VMT, such as transit, walking, bicycling, or working from home in that these non-automobile commuters generate no HBW trip VMT but are included in the number of workers used in the calculation.

Location-Based Service Trip Length Data

The baseline VMT data represents an average overall employment uses in the nine-county MTC region and does not account for variation in trip length due to location and land use type. To provide a basis for the estimation of project VMT generated, location-based service (LBS) "Big Data" was used to assess trip lengths for nearby similar land uses. The LBS data tracks the full length of trips (including trips in excess of 100 miles), and thus captures the effects of long-haul truck trips.

This data was analyzed for five sites:

- UPS distribution center (Atlas Road, Richmond)
- Amazon distribution center (Giant Highway, Richmond)
- Goodrick Avenue industrial area (Goodrick Avenue corridor between Parr Boulevard and Richmond Parkway, Richmond)
- Wine Warehouse (Collins Avenue, Richmond)
- HelloFresh distribution center (Factory Street, Richmond)

The LBS data provides trip length data analysis and yielded the following average one-way trip lengths by vehicle type:

- Automobiles and light-duty trucks: 20.53 miles

- Heavy trucks and other heavy vehicles: 28.61 miles

Given the physical location and transportation characteristics at the LBS sample locations, it was expected that the heavy truck/vehicle trip lengths would exceed the automobile/light-duty truck trip lengths. The automobile/light-duty truck trip lengths are indicative of commuter and local delivery trips, while the heavy truck/vehicle trip lengths are indicative of deliveries. A one-way trip length of 28.61 miles roughly corresponds to a trip between North Richmond and Concord or a trip between North Richmond and Daly City.

3.13.5 - Significance Criteria

According to CEQA Guidelines Appendix G Environmental Checklist, to determine whether transportation impacts are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

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)?

d) Result in inadequate emergency access?

In the context of checklist question (b), the proposed project would result in a substantial adverse impact if:

- The proposed project would result in a significant impact related to VMT if the project's employee-based, HBW trip VMT per employee is greater than 15 percent below the nine-county MTC average for employment uses in the San Francisco Bay Area. As the existing average VMT for employment uses in the region is 15.0 VMT, the threshold value is 12.75 HBW trip VMT per employee.

3.13.6 - Impacts and Mitigation Measures

Vehicle Miles Traveled

Impact TRANS-1: The proposed project may result in an increase in vehicle miles traveled that exceed the regional threshold.

Impact Analysis

CEQA Guidelines Section 15064.3 and the Governor's Office of Planning and Research (OPR) Technical Advisory provides guidance on the methodologies that could be used to assess a project's effect on VMT. The CCTA travel demand model was considered for use in the analysis of the project's effect on VMT. However, given the availability of LBS trip length data and the proposed project's location on an undeveloped parcel of land, it was determined that multiplying the weekday trip

generation estimate in Table 3.13-1 by the trip length data would be a superior estimate of the project's effect on VMT.

Table 3.13-2 presents the results of the VMT calculation for the proposed project. The VMT calculation does not include a truck/PCE adjustment as the calculation is not used in the intersection operations analysis, and thus the trip values in Table 3.13-2 vary from the estimates in Table 3.13-1 that are used in the operations analysis.

Table 3.13-2: Project Vehicle Miles Traveled Generated

Vehicle Type	Daily Trips[1]	Average Distance (One Way)	VMT
Warehouse/Distribution Center: Automobiles	500	20.53	10,265
Warehouse/Distribution Center: Heavy Vehicles	240	28.61	6,867
Office: Automobiles	360	20.53	7,391
Total Project VMT (Rounded)	**1,100**	**–**	**24,530**

Notes:
VMT = Vehicle Miles Traveled
[1] Passenger car equivalency adjustment is not required for VMT calculation.
Source: Fehr & Peers. 2021. CenterPoint North Richmond Development TIA–Revised Final. April 20, 2021.

The proposed project would result in a significant CEQA Transportation impact if the project's employee-based, HBW trip VMT per employee is greater than 15 percent below the nine-county MTC average for employment uses in the San Francisco Bay Area. Fifteen percent below the nine-county MTC average HBW VMT per worker is calculated to be 12.75 HBW trip VMT per worker. Given that the LBS-estimated average one-way trip length for automobile trips generated by the proposed project is over 20 miles, the proposed project would be in excess of 15 percent below the nine-county MTC average, thus the proposed project's effect on VMT would result in a significant impact.

Mitigation measures designed to reduce VMT typically focus on reducing the number of vehicle trips generated by a project and/or by reducing the length of vehicle trips generated by a project. Typically, this is done by either changing the mix and density of land uses on-site (a project description-based approach), or by implementing Transportation Demand Management (TDM) strategies. As the proposed project is not anticipated to incorporate other land uses that may reduce VMT by increasing the interaction between land uses on-site (i.e., residential and retail), the mitigation measures developed for this project are focused on TDM strategies.

Table 3.13-3 presents a listing of TDM commuter strategies that could be implemented as part of the proposed project. These strategies are focused on increasing bicycle commuting, commuting by carpool and vanpool, and better connecting the project site to transit options. The project site is located near Class I multiuse paths that may encourage walking and bicycling to/from the site by employees. The project site is also located about 2.8 miles from the Richmond BART Station and

about 0.4 mile from the nearest AC Transit stop. Proximity to the AC Transit stops suggests that employer-sponsored transit passes could be a suitable option (versus other projects in the North Richmond area that are farther away from AC Transit stops).

Table 3.13-3: Menu of VMT-reducing Transportation Demand Management Strategies

Strategy	Description
Commute Trip Reduction Program	Implement a multi-strategy program that encompasses a combination of individual measures, designed to discourage single-occupancy vehicle trips and encourage alternate modes such as carpooling, transit, walking, and biking. The program should include: • Carpooling encouragement • Ride-matching assistance • Preferential carpool parking • Flexible work schedules for carpools • Consideration of unbundled parking for building tenants and parking cash-out • Half time transportation coordinator • Vanpool assistance • Bicycle end-trip facilities (parking, showers, and lockers) • Employer-sponsored AC Transit and/or BART passes • Consideration of transit fare subsidy for AC Transit or BART • On-site TDM coordinator • Employer-sponsored shuttle to/from BART station(s) or other transit hub
Ride-sharing Program	Increasing vehicle occupancy by ride sharing will result in fewer cars driving the same trip, and thus a decrease in VMT. The proposed project will promote ride-sharing programs through a multi-faceted approach such as: • Designating a certain percentage of parking spaces for ride-sharing vehicles • Designating passenger loading, unloading, and waiting areas for ride-sharing vehicles • Providing a web site or message board for coordinating rides • Promoting ride-matching apps such as Waze Carpool, Carma, or the 511 program
End of Trip Facilities	Provide "end-of-trip" facilities for bicycle riders including showers, secure bicycle lockers, and changing spaces. End-of-trip facilities encourage the use of bicycling as a viable form of travel to destinations, and provide the added convenience and security needed to encourage bicycle commuting.
Last Mile Services	Promote biking through a multi-faceted approach such as: • Establishing a Bike Share Program • Expanding bike share and bike share membership • Establishing a bicycle repair and maintenance station • Providing an on-site fleet of bicycles • Offering bicycle valet parking • Creating an ebike program • Providing ebike rebates
New Employee Commute Orientation	Incorporate information on commute alternatives and benefits into orientation and new-hire packets for employees.

Strategy	Description
Preferential Parking Program	Provide preferential parking in convenient locations (such as near building front doors) in terms of free or reduced parking fees, priority parking, or reserved parking for employees who carpool or vanpool.
Employer-Sponsored Vanpool	Implement an employer-sponsored vanpool to service employees' commute to work. Employer-sponsored vanpool programs entail an employer purchasing or leasing vans for employee use, and often subsidizing the cost of program administration, if not more. The driver usually receives personal use of the van, often for a mileage fee. Scheduling is within the employer's purview, and rider charges are normally set based on vehicle and operating cost. The employer-sponsored vanpool could assist in connecting the project site to: • AC Transit lines 71, 76, and 376 • The nearest bus stop to the project site at the intersection of Fred Jackson Way and Market Avenue • Richmond BART Station
Transportation Network Company (TNC) Partnership	Subsidize pooled TNC trips to/from transit stops and stations and to major destinations.
Source: Fehr & Peers. 2021. CenterPoint North Richmond Development TIA–Revised Final. April 20, 2021.	

The proposed project would implement Mitigation Measure (MM) TRANS-1, which would require the applicant to prepare a project-specific TDM Program in consultation with the County to reduce project-generated VMT. While the TDM Program would incorporate strategies listed in Table 3.13-3 to reduce VMT, the precise level of VMT reduction resulting from such strategies cannot be sufficiently quantified to assume a specific reduction. The estimated average one-way trip length for the project (over 20 miles) suggests that, even with the incorporation of all feasible TDM measures, the proposed project's average HBW VMT per employee would likely remain in excess of 12.75 HBW trip VMT per employee. Therefore, with incorporation of MM TRANS-1, impacts would be reduced to the extent feasible, but would remain significant and unavoidable.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-1 Prior to issuance of the certificate of occupancy, the applicant shall retain a qualified transportation consultant to prepare a project-specific Transportation Demand Management (TDM) Program that could incorporate the following measures, where feasible. The TDM Program shall be reviewed and approved by the County, and the applicant shall implement all approved TDM measures.

- Commute Trip Reduction Program
- Ride-sharing Program
- End of Trip Facilities
- Last Mile Services
- New Employee Commute Orientation

- Preferential Parking Program
- Employer-Sponsored Vanpool
- Transportation Network Company (TNC) Partnership
- Employer-Sponsored Shuttle to/from BART Station(s) or Other Transit Hub
- Carpool and Vanpool Ride-Matching Services

Level of Significance After Mitigation

Significant and unavoidable impact, reduced to the extent feasible with MM TRANS-1.

Roadway Safety Hazards

Impact TRANS-2: The proposed project may substantially increase roadway safety hazards due to a geometric design feature or incompatible uses.

Impact Analysis

Site Access and Circulation

Vehicular access to the project site would be provided by three driveways Fred Jackson Way and three driveways on Brookside Drive. Each driveway would provide access to the loading docks on the periphery of the three buildings. Trucks entering the site would be able to circulate through the site and access into and out of the loading docks.

The project driveways on Fred Jackson Way would include medians and curb bulb-outs to prohibit trucks from turning left from the project driveways onto southbound Fred Jackson Way. MM TRANS-2a requires the applicant to install stop signs at the project driveways, as well as to install signage to prohibit trucks from turning left out of the project driveways onto Fred Jackson Way. Both of these measures would be required to be depicted on the final site plan. With the implementation of MM TRANS-2a, impacts would be less than significant.

Neighborhood Cut-Through Traffic

Existing signage on neighborhood roadways prohibit truck passage on residential streets in North Richmond. Residents of the neighborhood have expressed concern with regards to truck traffic cutting through the neighborhood. As described in Section 3.13.4, Methodology, the proposed project would result in approximately 220 daily truck trips, and, while countermeasures have been proposed to prevent truck trips traveling through the neighborhood, some trucks may use local streets rather than the designated truck routes to reach their destination. In general, trips to/from I-80 and I-580 are expected to use Richmond Parkway, which is a high-speed roadway (50 mph expressway) with shorter travel times than using alternative routes through the residential streets.

In 2017, the County Public Works Department updated the North Richmond Area of Benefit (AOB) traffic mitigation fee program to require new developments within North Richmond to contribute towards traffic calming strategies in North Richmond to reduce cut-through truck traffic in the neighborhood. The identified traffic calming improvements also have a parallel benefit of improving neighborhood aesthetics and promoting pedestrian and bicyclist safety. A project's contribution is calculated formulaically based on the type and size of the development.

Based on the entitlements process for other projects in the North Richmond area, the proposed project would be required to pay the AOB fee. This payment would go towards the completion of 11 identified traffic calming improvements. The project applicant must pay the AOB fee or construct the agreed-upon safety improvements prior to occupancy of the project. Consistent with other recently-approved projects in the North Richmond area, the applicant would be required to construct one off-site traffic calming improvement intended to deter truck traffic from cutting through the local neighborhood to the south. This traffic calming improvement may include but is not limited to bulb-outs, elevated crosswalks, speed tables, or chicanes on the main routes of Fred Jackson Way, Market Avenue, and Chesley Avenue. Pursuant to MM TRANS-2b, the applicant will be required to develop one traffic calming measure for review and approval by the Public Works Department, and to construct the identified improvement(s) prior to issuance of a building permit for the proposed project. In addition, MM TRANS-2a's requirement for installation of a median and bulb-outs on Fred Jackson Way along the project frontage, as well as stop signs and signage at the project driveways prohibiting vehicles from turning left out of the project driveways, would discourage neighborhood cut-through traffic by directing exiting trucks to Richmond Parkway.

The cost of the off-site traffic calming improvement would be counted as work completed in lieu of fee obligations for the AOB fee (i.e., the project application would be provided credit towards the fee obligation). MM TRANS-2b requires payment of the AOB fee or the installation of an improvement to deter truck trips through the residential neighborhood. With the implementation of mitigation, impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-2a Prior to issuance of the certificate of occupancy for the proposed project, the applicant shall install a median and bulb-outs on Fred Jackson Way along the project frontage, stop signs at the project driveways, and signage prohibiting vehicles from turning left out of the project driveways.

MM TRANS-2b Prior to issuance of the building permit, the applicant shall (1) pay the North Richmond Area of Benefit (AOB) fee and (2) commit to installing one of the following improvements on Fred Jackson Way, Market Avenue, or Chesley Avenue prior to project occupancy:

- Bulb-outs
- Elevated crosswalks
- Speed tables
- Chicanes

Level of Significance After Mitigation

Less than significant impact.

Emergency Access

Impact TRANS-3: The proposed project would not result in inadequate emergency access.

Impact Analysis

Factors such as the number of access points, roadway width, and proximity to fire stations determine whether a project provides sufficient emergency access. Emergency vehicle access is provided by the project driveways and the internal roadways. The internal roadways encompass all sides of all buildings, providing direct access in case of emergencies.

The fire station most likely to serve the project site is Richmond Fire Station No. 62, located on the northwest corner of the Hensley Street/7th Street intersection, about 1.1 miles (driving distance) south of the project site. Emergency vehicles would travel north along 7th Street and Fred Jackson Way to access the project site. Based on this distance, the response time for a fire engine responding to the project site from Richmond Fire Station No. 62 traveling at an average speed of 35 miles per hour would be 1 minute, 53 seconds. Per Policy 7-62 of the General Plan, the County strives to reach a maximum running time of 3 minutes and/or 1.5 miles from the nearest fire station. As such, the response time from Richmond Fire Station No. 62 would be within an acceptable response time. Impacts would be less than significant.

Level of Significance

Less than significant impact.

Public Transit, Pedestrians, and Bicycles

Impact TRANS-4: The proposed project may conflict with a plan for public transit, pedestrians, and bicycles.

Impact Analysis

Transit

Fixed-route bus service operates about 0.4 mile south of the project site with stops located within typical transit access trip walking distance of the project site. While the proposed project would generate new demand for the transit services and facilities that serve the area, transit system and vehicle capacities are not expected to be exceeded. Therefore, impacts to transit are less than significant.

Pedestrians

The proposed project site plan shows pedestrian paths between Fred Jackson Way and Brookside Drive to the proposed buildings. There is no accessible path between the buildings. Fehr & Peers recommended providing curb ramps where required at all pedestrian walkways as well as providing an accessible path between the three buildings.

The proposed project would include a sidewalk and landscaping along the project site frontage with Brookside Drive for pedestrian access. As part of the Fred Jackson Way First Mile/Last Mile Project (State Clearinghouse [SCH] No. 2019069019), a temporary path will be installed along the east side of Fred Jackson Way, between Brookside Drive and Wildcat Creek. Construction is expected to be completed by winter 2022.

The proposed project would result in increased pedestrian trips in the Fred Jackson Road corridor; however, the increase is not anticipated to degrade the off-site pedestrian network. The various recommended pedestrian improvements discussed above are reflected in MM TRANS-4a, and the implementation of this mitigation measure would reduce impacts to a level of less than significant.

Bicycles

Bicyclists are anticipated to access the site using the project driveways on Fred Jackson Way and Brookside Drive. The proposed project would include a new bicycle lane along the Brookside Drive project site frontage and would include bicycle parking.

Bicycle access to the project site is primarily through the Wildcat Creek Trail, a Class I bikeway, located along the north side of Wildcat Creek, extending from Richmond Parkway to Giaramita Street, as well as Class II bike lanes along Fred Jackson Way south of Wildcat Creek to Grove Avenue. As part of the Fred Jackson Way First Mile/Last Mile Project (State Clearinghouse [SCH] No. 2019069019), new buffer bike lanes would be provided along both sides of Fred Jackson Way, including the project site frontage. Construction is expected to be completed by winter 2022. The project design would not eliminate bicycle facilities that connect to the area circulation system, it would not conflict with existing or planned bicycle facilities, nor would it create a hazardous condition for bicyclists.

To promote bicycle commuting it is recommended that long-term bicycle parking and other bicycle amenities (showers, changing rooms, bike repair tools/station, etc.) be provided in the final site plan. This recommended improvement is reflected in MM TRANS-4b, and its implementation would reduce impacts to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-4a Prior to the issuance of the certificate of occupancy, the applicant shall install curb ramps where required at all pedestrian walkways and pedestrian connections between the three buildings. The applicant shall install pedestrian crossings on all four approaches of Fred Jackson Way and Brookside Drive (including ADA-compliant pedestrian landing islands). The applicant shall install pedestrian crossings on all four approaches of Fred Jackson Way and Pittsburg Avenue (including ADA-compliant pedestrian landing islands).

MM TRANS-4b Prior to the issuance of the certificate of occupancy, the applicant shall install long-term bicycle parking consistent with County Code Section 82-16.412 and other bicycle amenities (showers, changing rooms, bike repair tools/station, etc.) in a convenient location.

Level of Significance After Mitigation

Less than significant impact.

3.13.7 - Cumulative Impacts

The geographic scope of the cumulative transportation analysis is the roadway network and the transit, pedestrian, and bicycle facilities in project vicinity or roughly the western portion of the County. The analysis also considers the foreseeable development projects listed in Table 3-1 (See Chapter 3, Environmental Impact Analysis) in unincorporated Contra Costa County and the surrounding cities, in addition to the proposed project.

Vehicle Miles Traveled

While current interpretations of SB 743 and CEQA Guidelines Section 15064.3 suggest that VMT should be analyzed using a near-term baseline, it is also anticipated that the project's effect on VMT would be a significant impact under the Cumulative with Project scenario due to the lack of transit within walking distance, and also due to anticipated decreases in HBW trip VMT per worker associated with the implementation of the regional land use and transportation framework as envisioned in Plan Bay Area (the Regional Transportation Plan/Sustainable communities Strategy [RTP/SCS] for the Bay Area).

As concluded in Impact TRANS-1, the proposed project's VMT would result in a significant impact given that the LBS-estimated average one-way trip length for automobile trips generated by the proposed project is over 20 miles, and the proposed project would be in excess of 15 percent below the nine-county MTC average. The proposed project would implement MM TRANS-1, which would require the applicant to prepare a project-specific TDM Program in consultation with the County to reduce project-generated VMT. However, even with incorporation of MM TRANS-1 which would partially reduce VMT impacts, the impacts would remain significant and unavoidable. Other cumulative projects, such as those listed in Chapter 3, Environmental Impact Analysis, Table 3-1, Cumulative Projects, may generate new VMT, which would be added to the roadway network within the western portion of the County. All projects would be required to mitigate their fair share of impacts related to VMT. Nonetheless, the proposed project, in conjunction with other planned and approved projects, would have a cumulatively significant impact related to VMT. For the purpose of this analysis, the proposed project would have a cumulatively considerable contribution if the proposed project VMT is greater than the countywide average VMT. The nine-county Bay Area regional average commute VMT per weekday is about 15 commute VMT per employee per weekday. The proposed project is estimated to be over 20 commute VMT per employee per weekday, which is approximately 35 percent above the countywide average VMT. Therefore, for this project, the proposed project's incremental contribution to the cumulative impact is significant and the proposed project's contribution to cumulative VMT impacts would be cumulatively considerable.

Roadway Safety Hazards and Emergency Access

As discussed under Impact TRANS-2, to address roadway safety, the project driveways on Fred Jackson Way would include medians and curb bulb-outs to prohibit vehicles from turning left from the project driveways onto southbound Fred Jackson Way. In addition, MM TRANS-2a requires the applicant to install stop signs at the project driveways, as well as to install signage to prohibit vehicles from turning left out of the project driveways onto Fred Jackson Way. With the implementation of MM TRANS-2a, impacts would be less than significant.

Regarding the potential for truck traffic cutting through the residential streets in North Richmond, the proposed project would be required to pay the AOB fee that would go towards the completion of eleven identified traffic calming improvements. Consistent with other recently-approved projects in the North Richmond area, the applicant would be required to construct one off-site traffic calming improvement intended to deter truck traffic from cutting through the local neighborhood to the south (pursuant to MM TRANS-2b). With the implementation of this mitigation, impacts would be less than significant.

As described in Impact TRANS-3, the proposed project would not result in inadequate emergency access. Other cumulative projects listed in Table 3-1 that result in similar impacts would be required to mitigate for their impacts, as well as ensure that emergency access is maintained. As such, the proposed project, in conjunction with other projects, would have a less than significant cumulative impact associated with roadway safety or emergency access.

Public Transit, Pedestrians, and Bicycles

As described under Impact TRANS-4, while the proposed project would generate new demand for the transit services and facilities that serve the area, transit system and vehicle capacities are not expected to be exceeded and impacts to transit are less than significant. Regarding pedestrian facilities, the proposed project would result in increased pedestrian trips in the Fred Jackson Road corridor; however, the increase is not anticipated to degrade the off-site pedestrian network. In addition, implementation of MM TRANS-4a, which would require the applicant to install additional pedestrian improvements, would reduce impacts to a level of less than significant.

Regarding bicycle facilities, the project design would not eliminate bicycle facilities that connect to the area circulation system, would not conflict with existing or planned bicycle facilities, nor would it create a hazardous condition for bicyclists. To promote bicycle commuting, it is recommended that long-term bicycle parking and other bicycle amenities be provided in the final site plan pursuant to MM TRANS-4b. The implementation of MM TRANS-4b would reduce impacts to a level of less than significant. Other cumulative projects would be required to provide appropriate public transit, bicycle facilities, and pedestrian facilities. Therefore, the proposed project, in conjunction with other planned and approved projects, would not have a cumulatively significant impact related to public transit, bicycle facilities, and pedestrian facilities.

Level of Cumulative Significance Before Mitigation

Potentially significant impact.

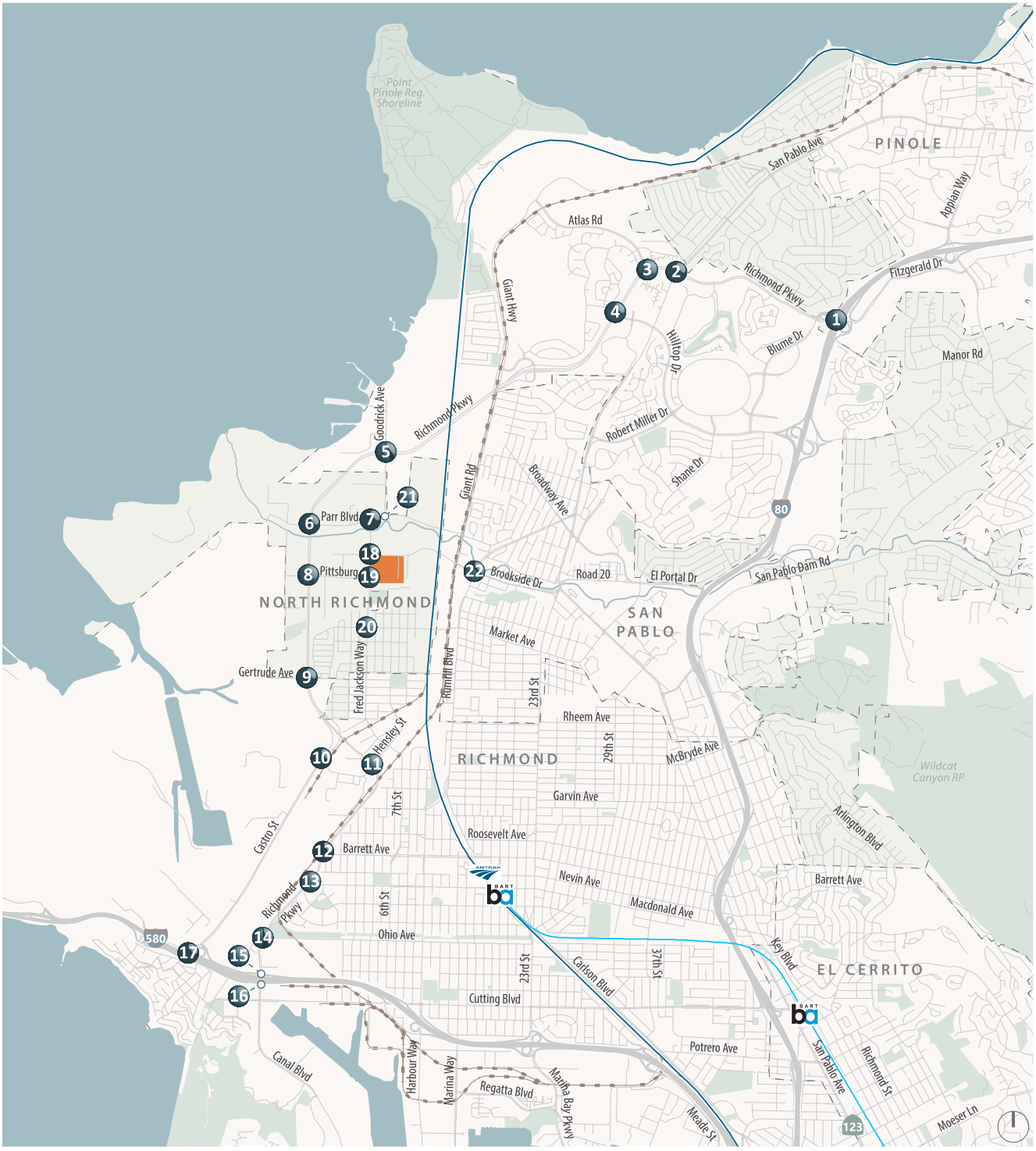
Cumulative Mitigation Measures

Implement MM TRANS-1, TRANS-2a, TRANS-2b, TRANS-4a, and TRANS-4b.

Level of Cumulative Significance After Mitigation

Significant and unavoidable cumulative VMT impact with mitigation incorporated.

THIS PAGE INTENTIONALLY LEFT BLANK



Source: Fehr + Peers, April 20, 2021.

FIRSTCARBON SOLUTIONS™

Exhibit 3.13-1
Roadway System Map

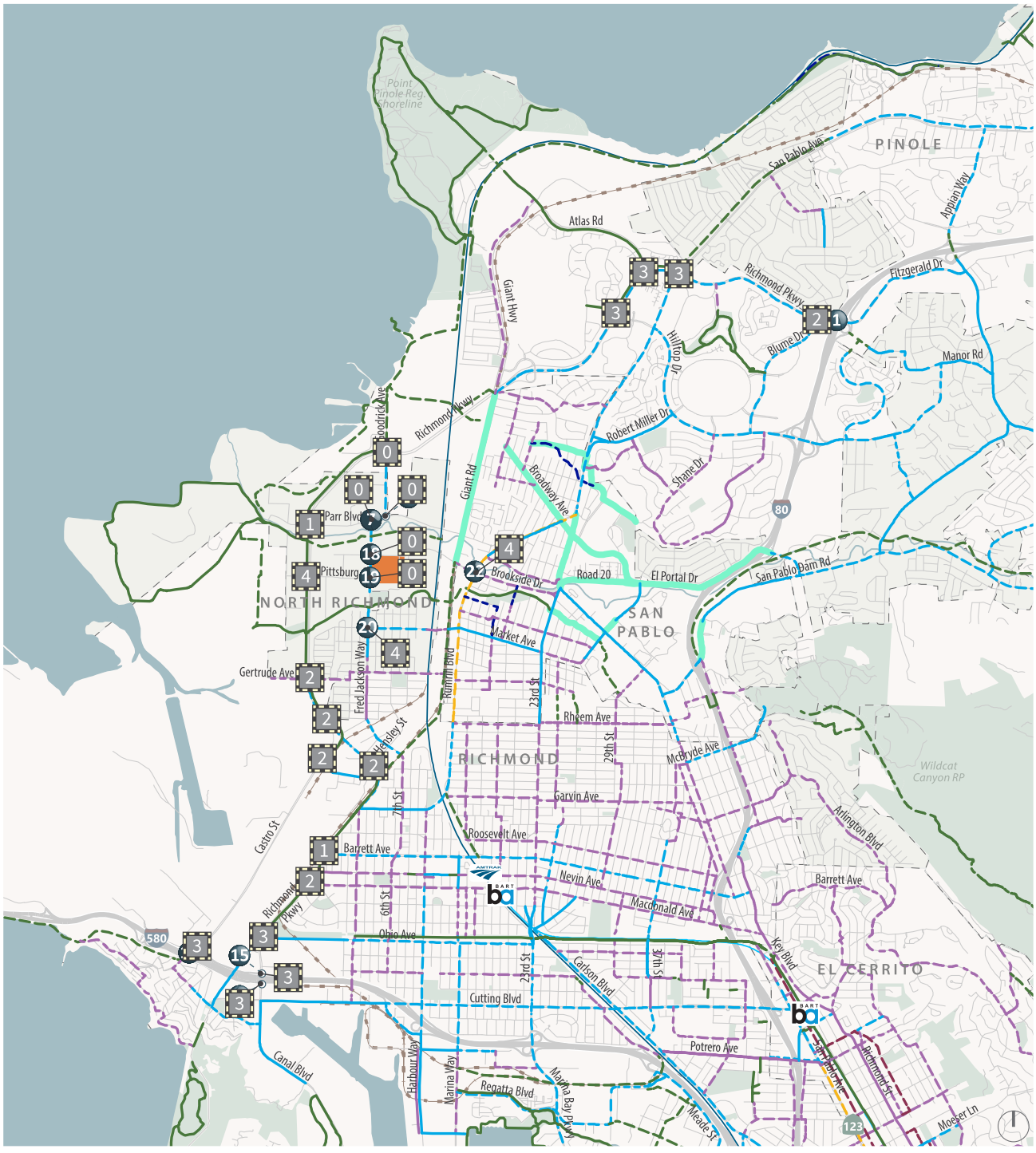
THIS PAGE INTENTIONALLY LEFT BLANK

Source: Fehr + Peers, April 20, 2021.

FIRSTCARBON SOLUTIONS™

Exhibit 3.13-2
Local and Regional Transit Service

THIS PAGE INTENTIONALLY LEFT BLANK



Existing
- Class 1
- Class 2
- Class 3

Proposed
- Class 1
- Class 2
- Class 3
- Class 4
- Proposed Complete Streets Corridor Study

Project Site

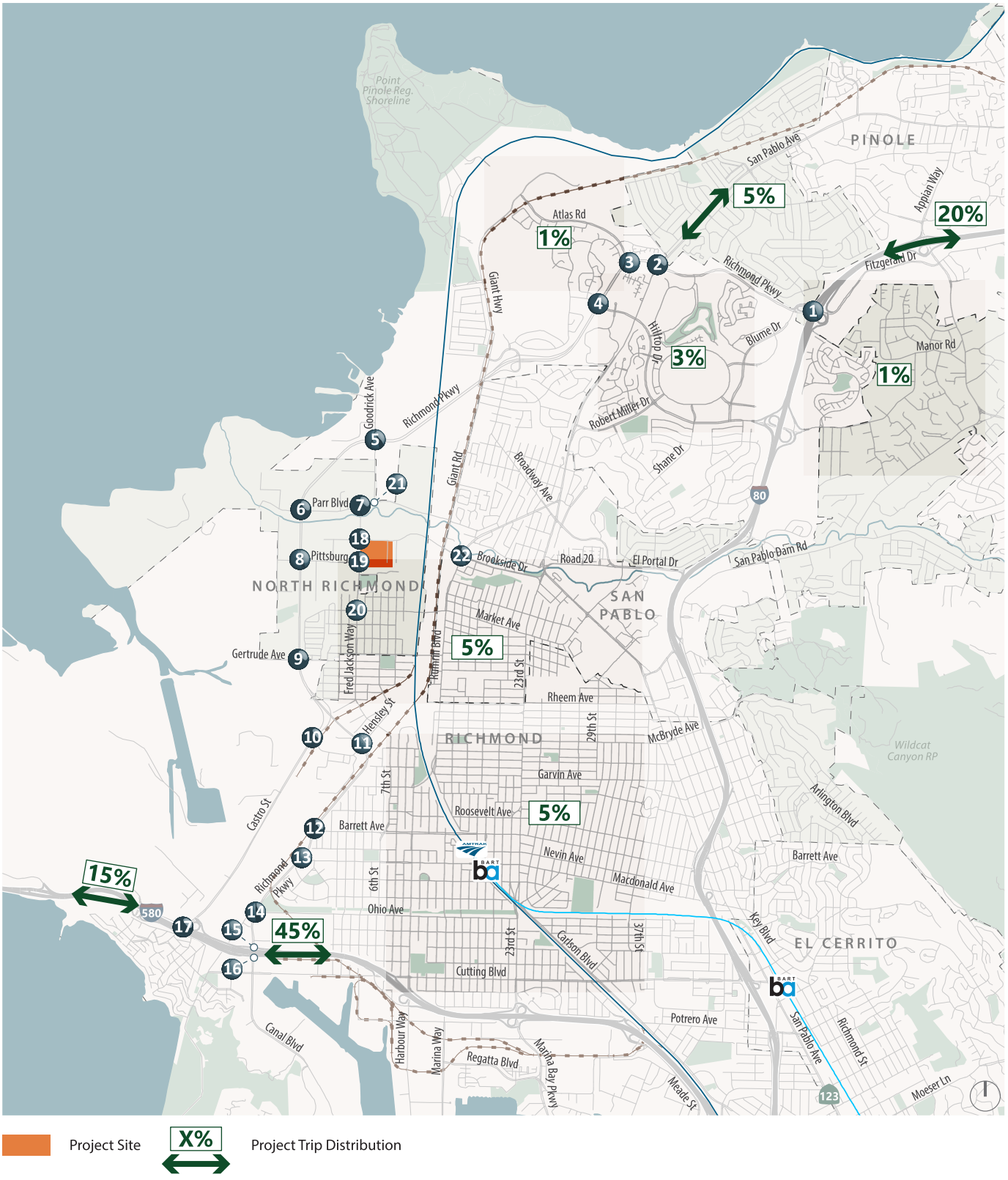
Number of Crosswalks at Intersection

Source: Fehr + Peers, April 20, 2021.

FIRSTCARBON SOLUTIONS™

Exhibit 3.13-3
Pedestrian and Bicycle Facilities

THIS PAGE INTENTIONALLY LEFT BLANK

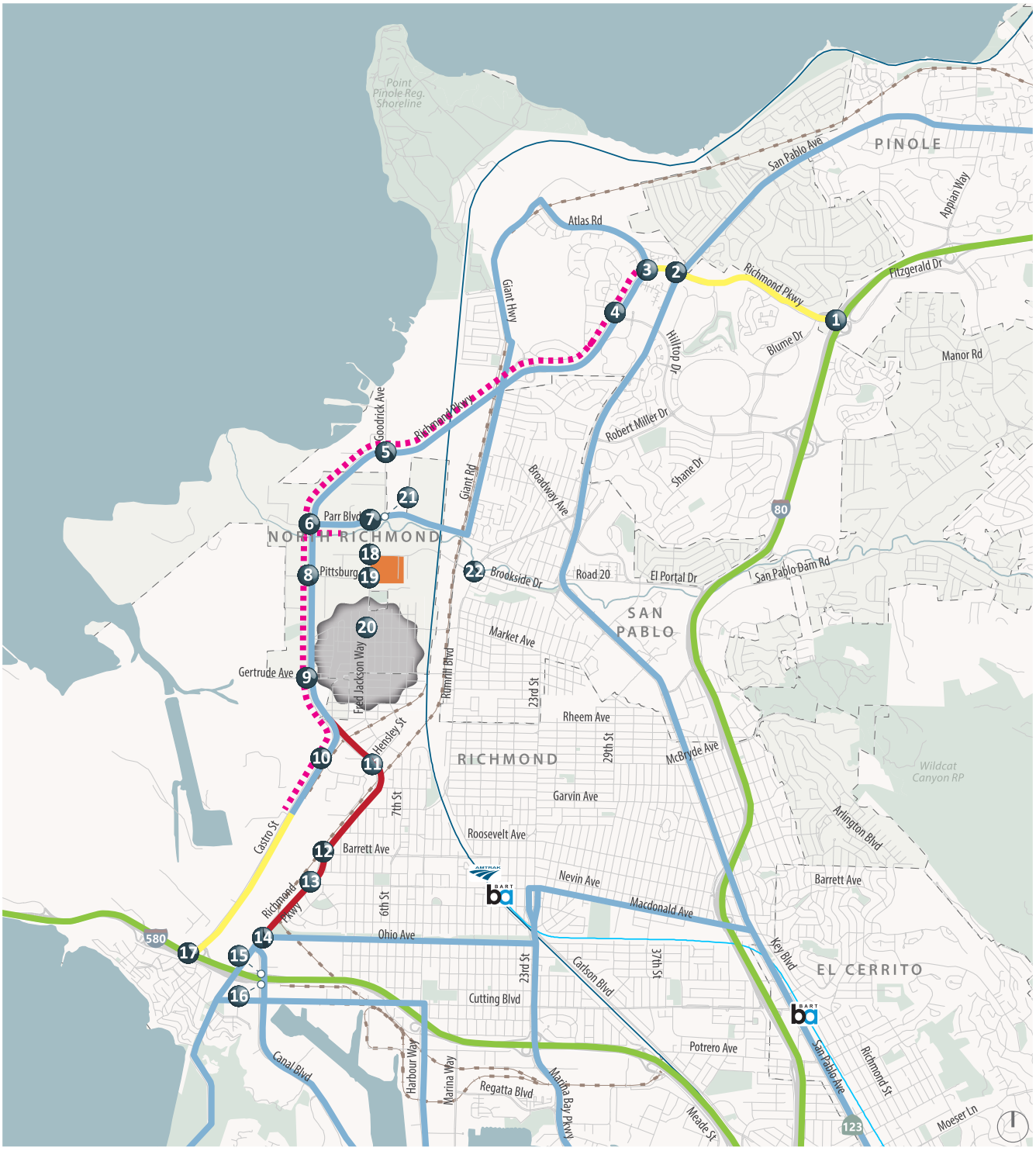


Source: Fehr + Peers, April 20, 2021.

FIRSTCARBON SOLUTIONS™

Exhibit 3.13-4
Project Trip Distribution

THIS PAGE INTENTIONALLY LEFT BLANK

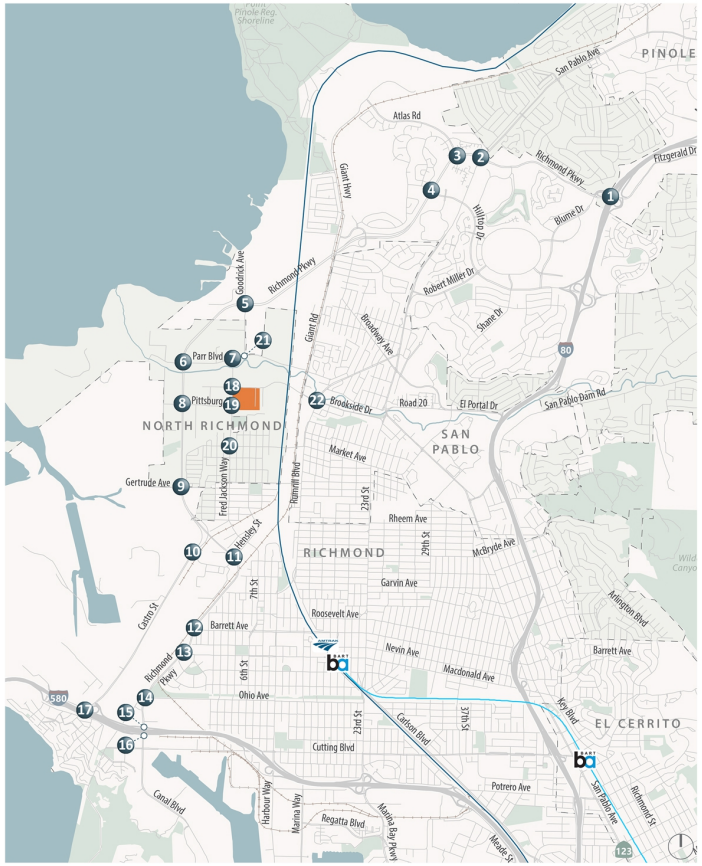


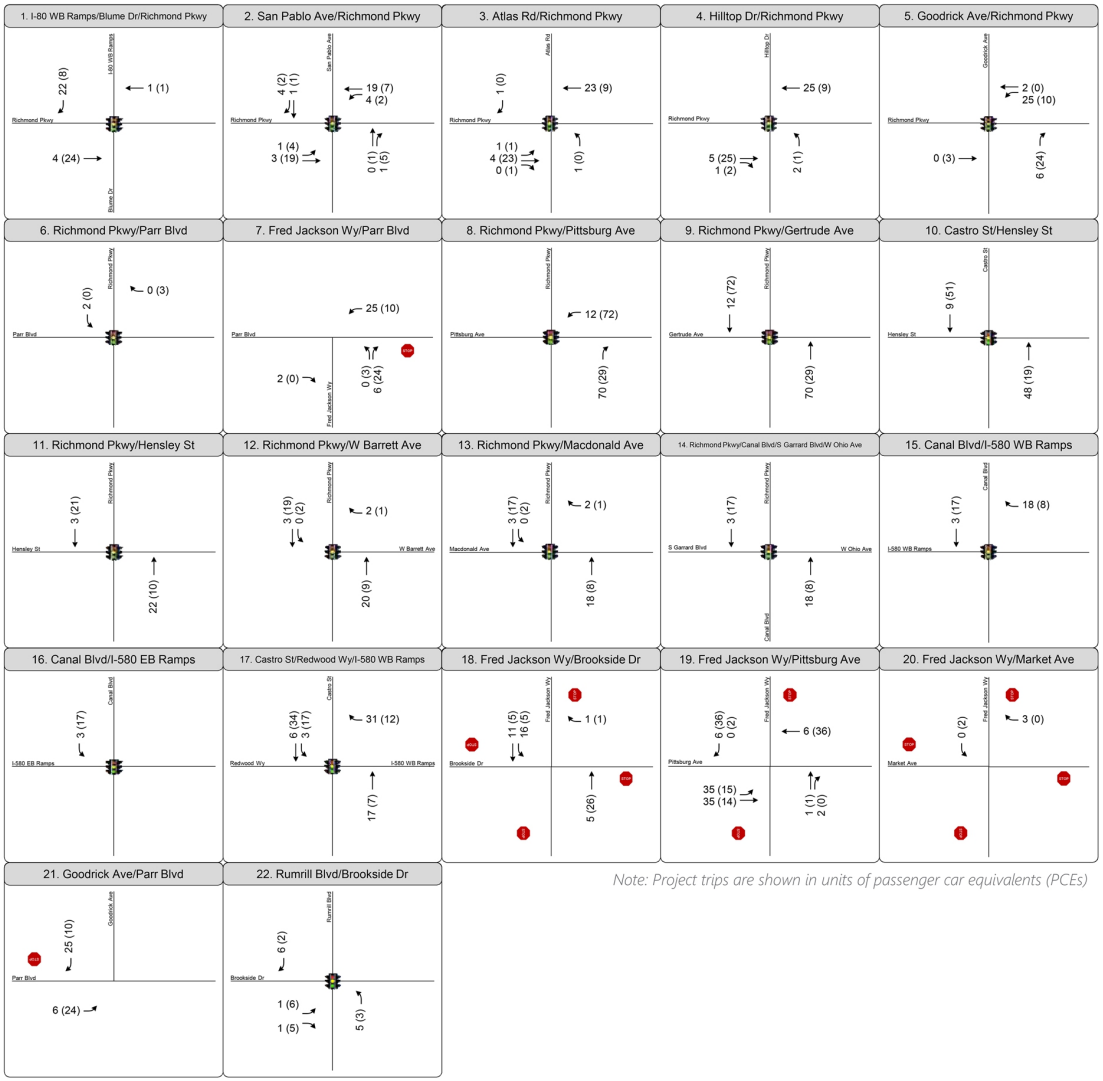
Source: Fehr + Peers, April 20, 2021.

FIRSTCARBON SOLUTIONS™

Exhibit 3.13-5
Project Truck Access, STAA Access and California Legal Through Truck Routes

THIS PAGE INTENTIONALLY LEFT BLANK





Note: Project trips are shown in units of passenger car equivalents (PCEs)

Source: Fehr + Peers, April 20, 2021.

FIRSTCARBON SOLUTIONS™

Exhibit 3.13-6
Project Trip Assignment

THIS PAGE INTENTIONALLY LEFT BLANK

3.14 - Utilities and Service Systems

3.14.1 - Introduction

This section describes the existing conditions related to utilities and service systems (water, wastewater, stormwater, and solid waste) in Contra Costa County (County) and the project area as well as the relevant regulatory framework. This section also evaluates the possible impacts related to such utilities and service systems that could result from implementation of the proposed project. Descriptions and analysis in this section is based on information provided by the East Bay Municipal Utilities District (EBMUD), EBMUD 2020 Urban Water Management Plan (UWMP), West County Wastewater District (WCWD), California Department of Resources Recycling and Recovery (CalRecycle), the Contra Costa County General Plan (General Plan), and the site-specific Preliminary Hydrology and Hydraulics Report and Preliminary Stormwater Control Plan (included in Appendix G). During the Notice of Preparation (NOP) comment period, the following comments were received related to the proposed project regarding utilities and service systems:

- Contra Costa County Flood Control & Water Conservation District (FC District) asks that the Draft Environmental Impact Report (Draft EIR) state the project site is located within Drainage Area 19A and that it should discuss mitigation for the proposed development.
- The FC District asks that the Draft EIR identify existing downstream water resources and drainage facilities adjacent to the project site.
- The FC District asks that the Draft EIR quantify runoff and discuss potential impacts to downstream capacity.
- Wastewater information should be included in the Draft Environmental Impact Report (Draft EIR).
- The project applicant should request water service estimates from the EBMUD.
- The County should include condition of approval for Assembly Bill (AB) 325 compliance.
- Identify and discuss existing water resources and drainage facilities within the project site that could be impacted, and include capacity analysis as mitigation.
- Address storm drain facility design and construction per Title 9 of County Ordinance Code.
- The Draft EIR should discuss basin design information.

3.14.2 - Environmental Setting

Water

EBMUD oversees water distribution to the incorporated cities and unincorporated communities in Alameda and Contra Costa counties, including western Contra Costa County, a total area of 332 square miles. The information contained within this section is based on the EBMUD 2020 UWMP.[1]

[1] East Bay Municipal Utility District (EBMUD). Urban Water Management Plan 2020. Website: https://www.ebmud.com/water/about-your-water/water-supply/urban-water-management-plan/. Accessed October 11, 2021.

Water Source and Supply

Contra Costa County

The EBMUD water system receives water from the Mokelumne River Basin in the Sierra Nevada Mountains and has the rights to a maximum of 325 million gallons per day (mgd). EBMUD pumps water from the Mokelumne River Basin and provides water to approximately 1.4 million people in 46 cities, towns, and designated places in both Alameda and Contra Costa counties.

Surface Water

EBMUD obtains approximately 90 percent of its water supply from the Mokelumne River watershed in Alpine, Amador, and Calaveras counties in the Sierra Nevada Mountains. EBMUD holds a contract with United States Bureau of Reclamation (USBR) that allows taking Central Valley Project (CVP) water from the Sacramento River during dry years: up to 133,000 acre-feet in any year, subject to supply, and up to 165,000 acre-feet over three consecutive dry years. The remaining 10 percent is provided by local runoff collected in its five terminal reservoirs: Briones, Chabot, Lafayette, San Pablo, and Upper San Leandro.

Groundwater

The primary groundwater basin within the EBMUD service area is the South East Bay Plain Basin (SEBPB), which is considered a portion of the East Bay Plain Groundwater Subbasin. EBMUD completed construction of the Bayside Groundwater Project facility in 2010 for groundwater banking of injected potable water during wet years. Due to drought in years following, this facility was not fully operational until October 2018 when EBMUD successfully injected several million gallons of drinking water into the SEBPB.[2] Additional phases may be constructed in the future.

Project Site

There are no existing uses of potable water on the project site. The project site is within the EBMUD service area. The project site does not contain active groundwater wells used for potable water supplies and is located within the East Bay Plain Subbasin, a subbasin of the Santa Clara Valley Groundwater Basin.

Recycled Water

Contra Costa County

EBMUD has agreements with WCWD, Dublin San Ramon Services District, and the City of San Leandro regarding specific projects that provide recycled water supplies for various uses. EBMUD provided approximately 8.3 mgd of recycled water to its customers in 2020.

Project Site

The project site does not currently receive or utilize recycled water.

[2] East Bay Municipal Utility District (EBMUD). 2021. Bayside Groundwater Facility. Website: https://www.ebmud.com/about-us/construction-and-maintenance/construction-my-neighborhood/bayside-groundwater-project/. Accessed April 15, 2021.

Water Demand and Use

Contra Costa County

EBMUD evaluated several different scenarios to assess its need for water under potential future conditions. Scenarios were developed based on plausible assumptions in both demand and supply availability. Table 3.14-2 shows additional details on how these scenarios were developed and the assumptions upon which they are based. EBMUD uses a 3-year drought planning sequence to assess the adequacy of its water supply for long-term water resources planning. The drought planning sequence is a 3-year hydrology sequence representing a worst-case drought scenario derived from historical records.

Table 3.14-1: Demand and Supply Scenarios Modeled

Scenario	Drought Planning Period	Assumptions
UWMP Base Condition	1976–1978 Drought Planning Sequence	CVP supplies are available when needed subject to M&I water shortage policy as modeled by DWR.
High Demand	1976–1978 Drought Planning Sequence	High water demand condition modeled the upper end of the demand projection.
Extreme Drought	1976–1978 Drought Planning Sequence	CVP allocation reduced to 25 percent in second and subsequent years of drought.
5 Year Historical Dry Period	1987–1992 Drought	Meet legislative requirement of looking at a 5-year consecutive drought.

Notes:
CVP = Central Valley Project
M&I = Municipal and Industrial
DWR = California Department of Water Resources
Source: East Bay Municipal Utility District (EBMUD). Urban Water Management Plan 2020. Website: https://www.ebmud.com/water/about-your-water/water-supply/urban-water-management-plan/. Accessed October 11, 2021.

Table 3.14-2 summarizes the projected demand and supply forecast by the EBMUD 2020 UWMP between 2020 and 2050.

Table 3.14-2: Demand and Supply Projections (2020–2050)

Scenario	Category	Year						
		2020	2025	2030	2035	2040	2045	2050
Normal Year	Available Supply (MGD)	>181	>186	>190	>194	>201	>209	>218
	Planning Level of Demand (MGD)	181	186	190	194	201	209	218
	Need for Water (TAF)	0	0	0	0	0	0	0

Scenario	Category	Year						
		2020	2025	2030	2035	2040	2045	2050
Single Dry Year (Year 1)	Available Supply (MGD)	181	186	189	192	198	204	211
	Voluntary Rationing (%)	0	0	1	1	2	2	3
	Need for Water (TAF)	0	0	0	0	0	0	0
Multiple Dry Years (Year 2)	Available Supply (MGD)	156	161	164	167	172	178	185
	Mandatory Rationing (%)	13	13	13	14	14	14	15
	Need for Water (TAF)	0	0	0	0	0	0	0
Multiple Dry Years (Year 3)	Available Supply	153	157	158	157	144	130	117
	Mandatory Rationing (%)	15	15	15	15	15	15	15
	Need for Water–Base Condition (TAF)	0	0	0	0	28	52	75
	Need for Water–High Demand Scenario	0	0	21	35	60	97	125
	Need for Water–Extreme Drought Scenario	0	0	0	13	32	55	84

Notes:
MGD = million gallons per day
TAF = thousand acre-feet
Source: East Bay Municipal Utility District (EBMUD). Urban Water Management Plan 2020. Website: https://www.ebmud.com/water/about-your-water/water-supply/urban-water-management-plan/. Accessed October 11, 2021.

As shown in the above table, EBMUD has and will have adequate water supplies to serve existing and projected demand during normal and wet years, but deficits are projected for multi-year droughts. Rationing would be sufficient to provide for adequate water balance for the single dry year and multiple dry year (2 years) scenarios, but a deficit would occur for the multiple dry year (3 years) scenario.

As stated in the EBMUD 2020 UWMP, if water supplies are severely depleted, EBMUD's Board of Directors may declare a water shortage emergency and implement the Drought Management Program, which is designed to provide guidance to minimize drought impacts on its customers while continuing to meet stream flow release requirements and obligations to downstream Mokelumne River water users. Following the declaration of a water shortage emergency, depending on the identified drought stage, EBMUD's Board of Directors may put into effect certain regulations, ordinances, and surcharges. The Board may also implement the Drought Management Program in the absence of a declaration of water shortage emergency if supplies are moderately depleted or if the State mandates water use restrictions.

At the time of this writing, EBMUD is currently working on 62 active projects. Furthermore, EBMUD has 30 planned projects to improve the efficiency of the water supply within the district territory. Of

the 30 planned projects, one is located near the project site in the City of Richmond and includes the installation of a new 36-inch transmission pipeline in 23rd Street.[3]

Project Site

The project site is vacant and does not contain uses that currently consume potable water.

Water Distribution

Contra Costa County

EBMUD's primary conveyance for its untreated water supply are the Mokelumne Aqueducts, which carry water from the Mokelumne River for deliveries throughout EBMUD's service area. The Mokelumne Aqueducts consist of three 82-mile-long pipelines that transport water from Pardee Reservoir to water treatment plants throughout the East Bay. The Mokelumne Aqueducts have a total design capacity of 202 mgd by gravity flow and up to 325 mgd with pumping at the three Walnut Creek Raw Water Pumping Plants. After treatment, distribution facilities include 4,200 miles of pipeline, 131 pumping plants, and 167 water reservoirs.

Project Site

The project site does not currently use potable water. There are existing 12-inch EBMUD water lines contained within Brookside Drive and Fred Jackson Way.

Wastewater

Contra Costa County

The WCWD provides wastewater treatment services to approximately 93,000 residents over 16.9 square miles in western Contra Costa County. The WCWD maintains a 249 miles gravity sewer pipeline system that includes 17 lift stations and 6.0 miles of pressure force mains. The WCWD maintains a Water Pollution Control Plant that processes an Average Dry Weather Flow (ADWF) of 6.9 mgd. The Water Pollution Control Plant has a dry weather flow permitted capacity of 12.5 mgd.[4] The WCWD estimates a service area buildout population of 113,000, 9.6 mgd ADWF, and 68.2 mgd Peak Wet Weather Flow (PWWF). Most of the final effluent is pumped to EBMUD's Richmond Advanced Recycled Expansion facility and the North Richmond Water Reclamation Plant for additional treatment and recycling. The remainder discharges into the San Francisco Bay.[5]

Project Site

The WCWD serves the areas adjacent to the project site; however, the project site is not currently within the boundaries of the WCWD service area. The applicant is seeking annexation into the WCWD service area; accordingly, the Contra Costa Local Agency Formation Commission (LAFCo) will consider annexation of the project site into the WCWD boundaries.

[3] East Bay Municipal Utility District (EBMUD). 2021. Construction in My Neighborhood. Website: https://www.ebmud.com/about-us/construction-and-maintenance/construction-my-neighborhood/. Accessed October 11, 2021.
[4] Carollo Engineers. 2014. District-Wide Master Plan: Volume 1 - Executive Summary. November.
[5] Ibid.

Wastewater Generation

Contra Costa County

Wastewater generated by land uses within western Contra Costa County is conveyed via existing infrastructure to the WCWD Water Pollution Control Plant for treatment and then disposed of or reused as recycled water.

Project Site

The project site contains no existing uses that generate wastewater.

Stormwater

Generation and Collection

Contra Costa County

The Contra Costa County Flood Control and Water Conservation District (FC District) guides regional drainage plans throughout incorporated and unincorporated County areas. All stormwater drains into San Francisco Bay via stormwater drainage systems and regional creeks and streams. The Contra Costa County Watershed Program is responsible for ensuring that the County complies with its municipal stormwater National Pollutant Discharge Elimination System (NPDES) permits.[6] Drainage facilities within unincorporated Contra Costa County are maintained by Contra Costa County Public Works, the FC District, or private property owners.[7]

Project Site

The project site is in unincorporated Contra Costa County, adjacent to the City of Richmond and City of San Pablo. The project site is covered by the Municipal Regional Permit (MRP) for Discharges to San Francisco Bay.[8] The MRP was adopted on October 14, 2009, and applies to 76 Bay Area municipalities in order to standardize requirements, pool resources and achieve results on a large scale.[9] Contra Costa County Public Works would serve the project site.

As shown in Exhibit 3.9-1, Section 3.9, Hydrology and Water Quality, the project site is located within Drainage Area 19A, as designated by the FC District.[10] The northern 17.6 acres of the project site drain north to San Pablo Creek, while the southern 13.4 acres of the project site drain south to Wildcat Creek.

Stormwater runoff on the northern portion of the project site flows overland from the southeast to the northwest, where it is collected by a series of open channel ditches and pipe culverts that flow west along Brookside Drive and ultimately into an existing 48-inch storm drain at the corner of

[6] Contra Costa County. 2021. Contra Costa County Watershed Program. Website: https://www.contracosta.ca.gov/344/County-Watershed-Program. Accessed April 15, 2021.

[7] Contra Costa County Flood Control & Water Conservation District (FC District). 2020. Frequently Asked Questions For Drainage, Watershed, and Water Quality. Website: https://www.contracosta.ca.gov/DocumentCenter/View/1871/Drainage-Watershed-and-Water-Quality-FAQs-PDF?bidId=#:~:text=GENERAL%20DRAINAGE%20QUESTIONS-,1)%20Who%20maintains%20the%20creek%2C%20channel%2C%20or%20drainage%20pipe,or%20easements%20accepted%20for%20maintenance. Accessed April 21. 2020.

[8] Carollo Engineers. 2014. District-Wide Master Plan: Volume 1–Executive Summary. November.

[9] Ibid.

[10] Contra Costa County Flood Control & Water Conservation District (FC District). 2015. Zones and Drainage Areas. https://www.contracosta.ca.gov/DocumentCenter/View/61290/County-Zones-and-Drainage-Areas-PDF?bidId=. Accessed May 27, 2021.

Brookside Drive and Fred Jackson Way. The 48-inch storm drain conveys the stormwater across Fred Jackson Way and then to the north and across Brookside Drive to a discharge point at San Pablo Creek. This system is designated as Line B by the FC District. The existing stormwater runoff rate for the northern portion of the project site draining to Line B is approximately 34.5 cubic feet per second (cfs).

Stormwater runoff on the southern portion of the project site flows overland from the east to the west where it is collected along the eastern side of Fred Jackson Way. Stormwaters are then conveyed south into an existing 36-inch storm drain along Fred Jackson Way that discharges into Wildcat Creek. This system is designated as Line A by the FC District. The existing stormwater runoff rate for the southern portion of the project site draining to Line A is approximately 23 cfs.

Solid Waste

Generation and Collection

Contra Costa County

Republic Services of West Contra Costa County provides solid waste and residential recycling services for cities and unincorporated communities in the west County area. The West Contra Costa Integrated Waste Management Authority (RecycleMore) provides waste processing services for waste franchises in the area. According to CalRecycle, commercial business in the County generates an estimated 523,779 tons of solid waste, including recycling and organics.[11]

Project Site

The project site is currently vacant and does not generate any waste.

Landfills

Contra Costa County

There are two landfills and three transfer stations that serve the County. The two landfills are distributed geographically to serve the entire County.

Project Site

Table 3.14-3 summarizes the two landfills that could serve the proposed project. Collectively, these landfills have approximately 63.9 million cubic yards in remaining capacity.

Table 3.14-3: Landfills Proximate to Project Site Summary

Landfill	Location	Tons (approximately)	Cubic Feet (approximately)	
		Maximum Permitted Daily Throughput	Maximum Permitted Capacity	Remaining Capacity
Keller Canyon Landfill	901 Bailey Road Pittsburg, CA 94565	3,500 tons per day	75,018,280 cubic yards	63,408,410 cubic yards

[11] California Department of Resources, Recycling, and Recovery (CalRecycle). 2019. Commercial Waste Stream by Business Group. Website: https://www2.calrecycle.ca.gov/WasteCharacterization/BusinessGroupStreams. Accessed September 24, 2020.

Landfill	Location	Tons (approximately)	Cubic Feet (approximately)	
		Maximum Permitted Daily Throughput	Maximum Permitted Capacity	Remaining Capacity
Acme Landfill	950 Waterbird Way Martinez, CA 94553	1,500 tons per day	6,195,000 cubic yards	506,590 cubic yards
Sources: California Department of Resources, Recycling, and Recovery (CalRecycle). 2019. SWIS Facility/Site Activity Details Keller Canyon Landfill (07-AA-0032). Website: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/4407?siteID=228. Accessed April 18, 2021. California Department of Resources, Recycling, and Recovery (CalRecycle). 2019. SWIS Facility/Site Activity Details Acme Landfill (07-AA-0002). Website: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/4396?siteID=217. Accessed April 18, 2021.				

Natural Gas, Electric Power, and Telecommunications

In the County, Pacific Gas and Electric Company (PG&E) provides electric power and natural gas to residents and businesses. The following companies provide telecommunications and internet service in the County:

- AT&T
- EarthLink
- Xfinity Comcast
- Wave Broadband

Project Site

The project site contains existing overhead power lines on the northern boundary adjacent to Brookside Drive and western boundary along Fred Jackson Way. There are no telecommunications infrastructure located on the project site.

3.14.3 - Regulatory Framework

Federal

Safe Drinking Water Act

The Safe Drinking Water Act authorizes the United States Environmental Protection Agency (EPA) to establish national standards for drinking water, called the National Primary Drinking Water Regulations, to protect against both naturally occurring and man-made contaminants. These standards set enforceable maximum contaminant levels in drinking water and require all water providers in the United States to treat water to remove contaminants, except for private wells serving fewer than 25 people. In California, the State Department of Health Services conducts most enforcement activities.

Clean Water Act (National Pollutant Discharge Elimination System)

The Water Pollution Control Act of 1972, more commonly known as the Clean Water Act (CWA), regulates the discharge of pollutants into watersheds throughout the nation. Under the CWA, the EPA implements pollution control programs and sets wastewater standards.

The NPDES permit program was established within the CWA to regulate municipal and industrial discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities. Wastewater discharge is regulated under the NPDES permit program for direct discharges into receiving waters and by the National Pretreatment Program for indirect discharges to a sewage treatment plant.

State

California Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act) is California's statutory authority for the protection of water quality. Under the Porter-Cologne Act, the State must adopt water quality policies, plans, and objectives that protect the State's waters for the use and enjoyment of the people. Regional authority for planning, permitting, and enforcement is delegated to the nine Regional Water Quality Control Boards (RWQCBs). The Porter-Cologne Act sets forth the obligations of the California State Water Resources Control Board (State Water Board) and the nine RWQCBs, which engage in a number of water quality functions in their respective regions and regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. The San Francisco Bay RWQCB is responsible for the project site.

California Urban Water Management Planning Act

The Urban Water Management Planning Act (California Water Code §§ 10610–10656) requires that all urban water suppliers with at least 3,000 customers prepare UWMPs and update them every 5 years. The Act requires that UWMPs include a description of water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions. Specifically, UWMPs must:

- Provide current and projected population, climate, and other demographic factors affecting the supplier's water management planning;
- Identify and quantify, to the extent practical, the existing and planned sources of water available to the supplier;
- Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage;
- Describe plans to supplement or replace that source with alternative sources or water demand management measures;
- Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis (associated with systems that use surface water);
- Quantify past and current water use;

- Provide a description of the supplier's water demand management measures, including schedule of implementation, program to measure effectiveness of measures, and anticipated water demand reductions associated with the measures; and
- Assess the water supply reliability.

California Health and Safety Code

Section 64562 of the California Health and Safety Code establishes water supply requirements for service connections to public water systems. Before additional service connections can be permitted, enough water must be available to the public water system from its water sources and distribution reservoirs to adequately, dependably, and safely meet the total requirements of all water users under maximum-demand conditions.

California Senate Bills 610 and 221

Senate Bill (SB) 610 and SB 221 (Water Code § 10910(c)(2)) amended State law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 seek to promote more collaborative planning between local water suppliers and cities and counties by requiring that detailed information regarding water availability be provided to decision-makers prior to approval of specified large development projects. SB 610 requires that detailed information be included in a Water Supply Assessment (WSA), which is then included in the administrative record that serves as the evidentiary basis for an approval action by a city or county. SB 221 requires that the detailed information be included in a verification of water supply. Under SB 610, WSAs must be furnished to local governments for inclusion in any environmental documentation for certain projects (as defined in Water Code Section 10912(a)) subject to the CEQA. A WSA was included in the EBMUD 2020 UWMP that addresses the current and planned future water supply and demand of the water supplier, and makes a determination of the sufficiency of its water supplies existing and planned future uses, including the project site.[12]

California Water Conservation Act

The California Water Conservation Act (SB X7-7) was enacted in November 2009 and requires each urban water supplier to select one of four water conservation targets contained in California Water Code Section 10608.20 with the statewide goal of achieving a 20 percent reduction in urban per capita water use by 2020. Under SBX7-7, urban retail water suppliers are required to develop water use targets and submit a water management plan to the Department of Water Resources (DWR) by July 2011. The plan must include the baseline daily per capita water use, water use target, interim water use target, and compliance daily per capita water use.

California Model Water Efficient Landscape Ordinance

The Model Water Efficient Landscape Ordinance was adopted by the Office of Administrative Law in September 2009 and requires local agencies to implement water efficiency measures as part of their review of landscaping plans. Local agencies can either adopt the Model Water Efficient Landscape Ordinance or incorporate provisions of the Ordinance into code requirements for landscaping. Governor Brown's Drought Executive Order of April 1, 2015 (EO B-29-15) directed DWR to update

[12] East Bay Municipal Utility District. 2016. 2015 Urban Water Management Plan. July.

the State's Model Water Efficient Landscape Ordinance (Ordinance) through expedited regulation. The California Water Commission approved the revised Ordinance on July 15, 2015.

New development projects that include landscape areas of 500 square feet or more are subject to the Ordinance. This applies to residential, commercial, industrial, and institutional projects that require a permit, plan check, or design review. The previous landscape size threshold for new development projects ranged from 2,500 square feet to 5,000 square feet. The size threshold for existing landscapes that are being rehabilitated has not changed, remaining at 2,500 square feet. Only rehabilitated landscapes that are associated with a building or landscape permit, plan check, or design review are subject to the Ordinance.

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 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, Chapter 343, Statutes of 2008, 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.

Regional

San Francisco Bay Regional Water Quality Control Board

The San Francisco Bay RWQCB administers the NPDES stormwater permitting program and regulates stormwater in the San Francisco Bay region. Contra Costa County is a permittee under the Phase II NPDES Municipal Stormwater Permit for the Contra Costa Clean Water Program. Stormwater discharges from construction activities on 1 acre or more are regulated by the RWQCB and are subject to the permitting requirements of the NPDES General Permit for Discharges of Stormwater Runoff Associated with Construction Activity (General Construction Permit).

The San Francisco Bay RWQCB prepared the San Francisco Bay Basin Water Quality Control Plan (Basin Plan).[13] The Basin Plan contains descriptions of the legal, technical, and programmatic bases of water quality regulation in the region and describes beneficial uses of major surface waters and their tributaries.

East Bay Municipal Utility District 2020 Urban Water Management Plan

The EBMUD prepared the EBMUD 2020 UWMP to meet the requirements of the California Urban Water Management Planning Act. The EBMUD 2020 UWMP evaluates sources of the water supply

[13] California Water Boards. 2018. Basin Planning. September 14. Website: https://www.waterboards.ca.gov/sanfranciscobay/basin_planning.html. Accessed: September 24, 2020.

for the service area population and future water demand until 2050, the planning horizon. The EBMUD 2020 UWMP is intended to help facilitate implementation of SB 610 and SB 221.

Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 establishes procedures for local government changes of organization, including city incorporations, annexations to a city or special district, and city and special district consolidations. The Local Agency Formation Commission (LAFCo) have numerous powers under the Act, but those of primary concern are the power to act on local agency boundary changes and to adopt spheres of influence for local agencies. Among the purposes of an LAFCo are the discouragement of urban sprawl and the encouragement of the orderly formation and development of local agencies.

Local

Contra Costa County General Plan

The General Plan establishes the following goals, policies, and implementation measures related to utilities and service systems relevant to this analysis:

Public Facilities/Services Element

Goal 7-H To encourage the conservation of water resources available to the County and to the State.

Goal 7-J To ensure that new development pays the costs related to the need for increased water system capacity.

Goal 7-K To provide sewer collection, treatment and disposal facilities adequate to meet the current and projected needs of existing and future residents.

Goal 7-L To provide wastewater treatment that preserves, and to the extent feasible, enhances water quality and the natural environment.

Goal 7-M To develop wastewater reclamation as a supplement to imported surface water supplies.

Goal 7-N To assure that new development pays the costs related to the need for increased sewer system capacity.

Goal 7-Q To employ alternative drainage systems improvements which rely on increased retention capacity to lessen or eliminate the need for structural modifications to watercourses, whenever economically possible.

Goal 7-T To ensure that new development pays its fair share of the costs related to increased runoff created by the development.

Goal 7-U To support the concept that existing development pays the cost of building and maintaining drainage improvements required to serve existing developed areas.

Goal 7-AG To reduce the amount of waste disposed of in landfills by:
1) reducing the amount of solid waste generated (waste reduction);
2) reusing and recycling as much of the solid waste as possible;
3) utilizing the energy and nutrient value of the solid waste (waste to energy and composting); and
4) properly disposing of the remaining solid waste (landfill disposal).

Goal 7-AH To divert as much waste as feasible from landfills through recovery and recycling.

Policies

Policy 7-1 New development shall be required to pay its fair share of the cost of all existing public facilities it utilizes, based upon the demand for these facilities which can be attributed to new development.

Policy 7-21 At the project approval stage, the County shall require new development to demonstrate that adequate water quantity and quality can be provided. The County shall determine whether (1) capacity exists within the water system if a development project is built within a set period of time, or (2) capacity will be provided by a funded program or other mechanism. This finding will be based on information furnished or made available to the County from consultations with the appropriate water agency, the applicant, or other sources.

Policy 7-26 The need for water system improvements shall be reduced by encouraging new development to incorporate water conservation measures to decrease peak water use.

Policy 7-29 Sewer treatment facilities shall be required to operate in compliance with waste discharge requirements established by the California Regional Water Quality Control Board. Development that would result in the violation of waste discharge requirements shall not be approved.

Policy 7-33 At the project approval stage, the County shall require new development to demonstrate that wastewater treatment capacity can be provided. The County shall determine whether (1) capacity exists within the wastewater treatment system if a development project is built within a set period of time, or (2) capacity will be provided by a funded program or other mechanism. This finding will be based on information furnished or made available to the County from consultations with the appropriate water agency, the applicant, or other sources.

Policy 7-37 The need for sewer system improvements shall be reduced by requiring new development to incorporate water conservation measures which reduce flows into the sanitary sewer system.

Policy 7-44 New development should be required to finance its legal share of the full costs of drainage improvements necessary to accommodate projected peak flows due to the project. Reimbursement from subsequent developments, which benefit from the added capacity, may be provided.

Policy 7-45 On-site water control shall be required of major new developments so that no significant increase in peak flows occurs compared to the site's pre-development condition, unless the Planning Agency determines that off-site measures can be employed which are equally effective in preventing adverse downstream impacts expected from the development or the project is implementing an adopted drainage plan.

Policy 7-55 As appropriate and to the extent allowed by law, assess all new development projects at least $0.35 per square foot of impervious surface created. This drainage fee is to be collected through existing County Flood Control drainage area fee ordinances, newly adopted drainage area fee ordinances, existing and new assessment districts, or other financial entities. The fee may be applied to the cost of any developer-sponsored regional flood control improvements on- or off-site, which mitigate the project's flooding impacts. Regional facilities are defined as systems sized to handle at least 15 cubic feet per second and suitable for public agency maintenance, i.e., 24-inch diameter and larger storm drains.

Policy 7-91 Solid waste resource recovery (including recycling, composting, and waste to energy) shall be encouraged so as to extend the life of sanitary landfills, reduce the environmental impact of solid waste disposal, and to make use of valuable resources, provided that specific resource recovery programs are economically and environmentally desirable.

Implementation Measure

Implementation Measure 7-y

Encourage sewer service agencies and the Local Agency Formation Commission (LAFCo) to annex lands planned for urban development by this General Plan into their service areas.

Contra Costa County Ordinance Code

Title 8 Chapter 82-26—Water Conservation Landscaping in New Developments

The Water Conservation in Landscaping Act was enacted in 2006, requiring the DWR to update the MWELO. In 2009, the Office of Administrative Law approved the updated MWELO, which required a retail water supplier or a county to adopt the provisions of the MWELO by January 1, 2010, or to enact its own provisions equal to or more restrictive than the MWELO provisions. Since the County did not adopt a new landscape ordinance by January 1, 2010, the proposed project is subject to the MWELO as amended.

Title 9 Division 916—Water and Sewers

Title 9, Division 916 of the Ordinance Code requires that adequate approved water supply system shall be provided to serve all of a proposed subdivision, that landscaping conform to applicable water conservation requirements, and that sewerage shall be provided to a proposed subdivision by a public sanitation district or utility having adequate plant and facility capacity.

Title 10 Division 1010—Drainage

Title 10, Division 1010 of the Ordinance Code is adopted to provide for the implementation of drainage, recreation and riparian vegetation provisions of the general plan, protect watercourse riparian vegetation, permit control of projects that may change the hydraulic characteristics of watercourses and drainage facilities, control erosion and sedimentation, prevent the placement or discharge of polluting matter into watercourses, and require adequate watercourse drainage facilities.

Title 4 Chapter 418-10—Recycling Requirements for Landfill Disposal

Chapter 418-10 of the Ordinance Code requires waste from the haulers of a local agency to meet minimum resource recovery requirements in order to dispose of solid waste in landfills located in the unincorporated area of the County.

3.14.4 - Impacts and Mitigation Measures

Significance Criteria

According to CEQA Guidelines Appendix G Environmental Checklist, to determine whether impacts related to utilities and service systems are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

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?

e) Comply with federal, State, and local statutes and regulations related to solid waste?

Approach to Analysis

Wastewater production was calculated and compared with WCWD treatment capacity to determine whether wastewater treatment requirements would be exceeded. In addition, the demand for potable water was calculated to assist in determining whether enough water supply would be available. The County's wastewater discharge permitting and stormwater requirements were also reviewed.

The following evaluation discusses whether the project would result in direct impacts on utilities and service systems such as existing wastewater and stormwater drainage facilities, water supply, or water treatment facilities. The evaluation also discusses whether the project would result in indirect impacts on utilities and services systems, such as construction impacts from new stormwater drainage systems. The analysis involved reviewing published data and material provided by the

EBMUD, WCWD, CalRecycle, the County, and the site-specific Preliminary Hydrology and Hydraulics Report and Preliminary Stormwater Control Plan (Appendix G).

Specific Thresholds of Significance

For purposes of this analysis, the following thresholds are used to evaluate the significance of utilities and service systems impacts resulting from implementation of the proposed project.

- Create a need for relocated, new, or expanded water supply, wastewater treatment, or stormwater drainage facilities, the construction of which would result in significant construction-related traffic, air quality, greenhouse gas (GHG) emissions, energy, or noise impacts. Determination of significance of construction-related traffic, air quality, GHG emissions, or noise impacts is based on the respective specific thresholds of significance listed in Section 3.2, Air Quality; Section 3.5, Energy; Section 3.7, Greenhouse Gas Emissions; Section 3.11, Noise; and Section 3.13, Transportation.
- Result in insufficient water supply to serve the project's potable water demand.
- Inadequate capacity at the WCWD Treatment Plant to serve the project's wastewater generation.
- Insufficient daily capacity or permitted daily capacity at the Keller Canyon Landfill and Acme Landfill to serve the project's waste generation.
- Unable to comply with AB 939 solid waste diversion goals.

Impact Evaluation

Water, Wastewater, Stormwater, Natural Gas, Electrical Power, and Telecommunications Facilities

Impact UTIL-1:	**The proposed project would not 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?**

Construction and Operation

Water Supply

EBMUD would supply the project site with potable water. The proposed project would include potable water and fire water lines that would connect to existing lines within Brookside Drive and Fred Jackson Way. It is anticipated that water services would be extended to the project site in late 2022.

As described in the Environmental Setting, EBMUD has and will have adequate water supplies to serve existing and projected demand during normal and wet years, but deficits are projected for multi-year droughts. Rationing would be sufficient to provide for adequate water balance for the single dry year and multiple dry year (2 years) scenarios, but a deficit would occur for the multiple dry year (3 years) scenario. However, as discussed below in Impact UTIL-2, EBMUD has programs and projects to reduce water demand and the capability to procure the necessary supplementary water supplies during a multiple dry year (3 years) scenario. As such, EBMUD has sufficient water supplies

to accommodate the anticipated growth throughout its service area, including the project site. In addition, the proposed project is in an urbanized area that is currently served by the EBMUD and accounted for in the WSA as described in the EBMUD 2020 UWMP. As discussed under Impact UTIL-2, the proposed project would not create the need for new potable water facilities or result in insufficient water supply. Installation of new potable water lines would primarily occur within existing roadways. Removal of existing connections and construction of new connections would be required to abide by applicable federal, State, and local regulations, as well as mitigation measures outlined in this document, to avoid significant environmental impacts. Thus, there would no need to construct new or expand existing water treatment facilities. Therefore, impacts related to need for relocation or construction of new or expanded water supply facilities would be less than significant.

Wastewater Treatment

Wastewater from the project site would be conveyed to the WCWD Water Pollution Control Plant consistent with standards established by the San Francisco Bay RWQCB. It is anticipated that wastewater services would be extended to the project site in late 2022. The WCWD District-Wide Master Plan identifies and describes needed capacity increases and treatment process upgrades to accommodate anticipated future growth within the WCWD service area. In addition, the District-Wide Master Plan evaluated these improvement projects to determine how feasible and effective they would be to ensure the WCWD is able to serve the future population.[14]

The proposed project would result in 555,537 square feet of warehouse space that would be used for light industrial uses. These uses would not be anticipated to include heavy industrial or commercial uses which produce high levels of wastewater volume and pollutants. As described under Impact UTIL-3, although the project site is not currently served by WCWD and the applicant is seeking annexation into its service area, the WCWD Water Pollution Control Plant would have sufficient capacity to serve all aspects of the proposed project, and a new or expanded wastewater treatment facility would not be required. (Chapter 2, Project Description, describes how annexation into the WCWD would occur as part of the proposed project and that annexation is anticipated to occur immediately upon project approval and CEQA certification.) Installation of new sanitary sewer lines would primarily occur within existing roadways. Removal of existing connections and construction of new connections would be required to abide by applicable federal, State, and local regulations, as well as mitigation measures outlined in this document, to avoid significant environmental impacts. Thus, the project would not require or result in the need for expanded or new wastewater treatment facilities. Therefore, impacts related to need for relocation or construction of new or expanded wastewater treatment facilities would be less than significant.

Stormwater Drainage

The project site is mostly undeveloped and composed of pervious surfaces. In total, the project site currently contains a total of 81,037 square feet of impervious surface area.[15]

The proposed project would result in 555,537 square feet of warehouse space, 613,947 square feet of hardscape, and 129,719 square feet of landscaped areas within FC District Drainage Area 19A.

[14] Carollo Engineers. 2014. District-Wide Master Plan: Volume 1 - Executive Summary. November.
[15] Kier & Wright Civil Engineers & Surveyors. 2018. Preliminary Stormwater Control Plan for 506 Brookside Drive. July 31.

Compared to existing conditions, the project would result in an increase of impervious surfaces, which could increase surface runoff. As a result, the proposed project could result in the need for new or expanded storm drainage facilities, which represents a potentially significant impact.

As described in the Preliminary Stormwater Control Plan, the proposed project would incorporate Low Impact Development (LID) techniques to allow for stormwater infiltration and treatment before being discharged to the storm drain system. The proposed project would use 100 percent LID, meaning 100 percent of project runoff would be contained and treated on-site. This would be accomplished through the installation of five landscape-based bioretention areas as design elements (see Exhibit 2-6). Runoff from the impervious areas on the project site, including roofs and paved areas, would be routed to the bioretention areas. The proposed project would also include landscaping and bioretention swales on the Brookside Drive and Fred Jackson Way Frontages (see Chapter 2, Project Description, Exhibit 2-6). It is anticipated that new stormwater facilities at the project site would be operational in late 2022.

As discussed in Section 3.9, Hydrology and Water Quality, and shown in Table 3.9-1, the stormwater facilities proposed as part of the project would reduce the operational stormwater runoff rates below the existing stormwater runoff rates; these data also show that the existing culverts at Drainage Line A and Drainage Line B would have sufficient capacity to convey the 10-year storm event. Therefore, operation of the proposed project would reduce the amount of surface runoff as compared to existing conditions and would not result in substantial off-site flooding within FC District Drainage Area 19A or to downstream areas that are within a Special Flood Hazard Area.

Implementation of MM HYD-3 would ensure the project collects and conveys stormwater entering or originating from the project site in accordance with Division 914 of the Ordinance Code. MM HYD-3 would also ensure that the proposed project complies with regulations of the NPDES permit, and that the project applicant prepares and submits a Final Storm Water Control Plan and Stormwater Control Operation and Maintenance Plan to the County Public Works Department for approval.

In addition, a Storm Water Pollution Prevention Plan (SWPPP) would be required as part of MM HYD-3, which would minimize flooding and the discharge of pollutants into waterbodies during construction. Construction of new stormwater infrastructure would be required to abide by applicable federal, State, and local regulations, as well as mitigation measures outlined in this document, to avoid significant environmental impacts. Therefore, impacts related to the need for relocation or construction of new or expanded stormwater drainage facilities would be less than significant with mitigation.

Natural Gas, Electric Power, and Telecommunications

There is no natural gas infrastructure located on the project site. The proposed project would connect to existing natural gas infrastructure as needed for project use. It is anticipated that natural gas services would be extended to the project site in late 2022. As described previously, the project site contains existing overhead electric power lines and poles on the northern and western boundaries, along Brookside Drive and Fred Jackson Way. The proposed project would connect to these existing power lines consistent with Division 1008, Utilities, of the Ordinance Code. Division 1008 states that the Board of Supervisors has the authority to designate overhead utilities for removal and placement underground as part of an underground utility district for public necessity,

health, safety or welfare. It is anticipated that electric power services would be extended to the project site in late 2022. These impacts would be temporary in nature and would not permanently disrupt electrical power service. As a result, compliance with the Ordinance Code would ensure the project would not require relocation or expansion of electric power infrastructure.

There are no telecommunications facilities located on-site. However, the proposed project would not need new telecommunications facilities because the site is in an urban area that already contains sufficient telecommunications facilities. It is anticipated that telecommunications services would be extended to the project site in late 2022. In addition, the proposed project would not remove or replace natural gas or telecommunications facilities because none currently exist on-site. Therefore, impacts related to need for relocation or construction of new or expanded natural gas, electric power, and telecommunications facilities would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement MM HYD-3.

Level of Significance After Mitigation

Less than significant impact.

Water Supply

Impact UTIL-2:	**The proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.**

Construction

Impacts related to sufficient water supplies are limited to operational impacts. No respective construction impacts would occur.

Operation

Potable water would be provided to the project site by the EBMUD. The proposed project would consist of three warehouses totaling 555,537 square feet and would employ approximately 573 people. As discussed in Chapter 4, Effects Found not to be Significant, the proposed project's industrial warehouse use would not result in significant direct or indirect population growth such that the EBMUD would not have sufficient water supply to serve the proposed project, existing customers, and future development.

Under Water Code Section 10912, "projects" subject to the WSA requirements include a proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area. Under SB 610, WSAs must be furnished to local governments for inclusion in any environmental documentation for certain projects (as defined in Water Code Section 10912(a)) subject to the CEQA. A WSA was included in the EBMUD 2020 UWMP that addresses the current and

planned future water supply and demand of the water supplier, and makes a determination of the sufficiency of its water supplies existing and planned future uses, including the project site.[16] As the proposed project is consistent with existing General Plan Land Use designations, this level of development (and its associated water demand) was anticipated and considered as part of the EBMUD 2020 UWMP.

Based on the EBMUD 2020 UWMP, commercial, industrial, and institutional water uses consumed an average of 58 gallons per capita per day.[17] This daily rate is appropriate for the proposed project because the future tenants would not include uses that consume significant amounts of water, such as commercial or heavy industrial uses. As a result, the proposed project would result in an estimated water demand of 174 gallons per capita per day (58 x 3) or 0.00021 mgd. Thus, the estimated project water demand of 0.00021 mgd would represent less than 1 percent of the 2020 EBMUD water supply total of 153 mgd in year 3 of a multiple dry year. The estimated project water demand of 0.00021 mgd would represent less than 1 percent of the 2050 EBMUD water supply total of 117 mgd in year 3 of a multiple dry year. Proposed landscaping would also result in water demand but would comply with the State MWELO standards and Contra Costa Clean Water Program regulations and include drought tolerant, low water demand vegetation.

Although the UWMP determined that EBMUD would have sufficient water supplies to meet customer demand through 2050 during normal years and up to two dry years of a multi-year drought, the UWMP found that the EBMUD would need to either implement measures to reduce water demand or purchase supplemental water supplies to meet projected demand during a third dry year after 2020.[18] As shown in Table 3.14-2, in the third year of a multi-year drought, EBMUD would have a need for up to 125 mgd of water in 2050. As described previously, during water shortage emergencies, many of the programs and projects in the UWMP would be implemented to reduce water demand. For example, EBMUD's Water Shortage Contingency Plan, which includes a staged system of drought rates, ordinances, penalties, a supersaver recognition program, and water use restrictions, would reduce water demand. In addition, EBMUD has developed a water transfer program that would secure dry year water supplies from senior water rights holders in the Sacramento Valley, such as the Placer County Water Agency and Yuba County Water Agency, in order to meet water demand during multi-year drought scenarios.[19] In the event that the EBMUD requires supplemental water supplies during the third year of a multi-year drought, EBMUD would purchase between 10,000 to 47,000 acre-feet from the Placer County Water Agency in order to meet demand. As a result, the combination of EBMUD water shortage programs and water transfer programs would ensure EBMUD can provide adequate water supplies and would be available to serve the proposed project with existing and planned supplies. The proposed project would include water efficient applicants consistent with the California Green Building Code, which would further reduce water demand. Therefore, impacts related to sufficient water supply availability would be less than significant.

[16] East Bay Municipal Utility District (EBMUD). Urban Water Management Plan 2020. Website: https://www.ebmud.com/water/about-your-water/water-supply/urban-water-management-plan/. Accessed October 11, 2021.
[17] Ibid.
[18] Ibid.
[19] East Bay Municipal Utility District (EBMUD). Urban Water Management Plan 2020. Website: https://www.ebmud.com/water/about-your-water/water-supply/urban-water-management-plan/. Accessed October 11, 2021.

Level of Significance

Less than significant impact.

Wastewater Treatment Capacity

Impact UTIL-3:	**The proposed project would not result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.**

Construction

Impacts related to adequate wastewater treatment capacity are limited to operational impacts. No respective construction impacts would occur.

Operation

The proposed project could have a significant impact if the wastewater treatment provider would not have sufficient capacity to serve the proposed new uses in addition to the provider's existing commitments.

According to WCWD map N-08-2, the 31.48-acre site is not currently in the WCWD boundaries. Therefore, as part of the requested entitlements, the applicant seeks to annex the entire site into the WCWD service boundaries (see Chapter 2, Project Description). No part of the proposed project aims at changing the existing zoning of Planned Unit District or General Plan designation of Heavy Industrial and Light Industrial. Therefore, no new unexpected uses or demand on existing facilities would occur with the proposed project (e.g., changing of the site to a higher density use designation, such as office). The site does not have any "open space" designated land within the project boundaries. Therefore, no "open space" would be removed from the County as part of the proposed project. The proposed project would be completely located on a site that is designated as Heavy Industrial and Light Industrial.

Adjacent properties are compatible with the proposed development of this site and are developed with similar industrial uses, as well as a mix of commercial activities such as a contractor's yard and heavy equipment rentals. The entire North Richmond area, including the subject property is located within the Urban Limit Line and therefore, the annexation request is not expected to impact viability of any agricultural uses in the County. None of the surrounding properties are currently zoned or actively producing food crops, therefore, no land capable of producing food crops would be removed from the County's inventory or negatively impacted by the proposed project. No new housing would need to be constructed as a result of the proposed project.

The topography of the site and the vast majority of properties in the area are generally flat. WCWD staff has indicated that there is a 10-inch sewer line at the Pittsburg Avenue/3rd Street (Fred Jackson Way) intersection and a 12-inch sewer line at the Brookside Drive/3rd Street (Fred Jackson Way) intersection, and that the sewer lines can accommodate the projected 29,165.7 gallons per day[20] of

[20] Calculation: [527,760 x 0.05 + 27,777 x 0.10]

additional flow.[21] Consequently, no expansion of WCWD treatment facilities is expected with implementation of the proposed project. The developer would be required to extend a connection to the existing WCWD sewer line from the subject property, however, these minor ground disturbances are routinely conducted within the public-right-of-way and given compliance with all applicable codes and regulations no environmental impacts are expected by the connection.

The Contra Costa County LAFCo is the responsible agency which considers annexation requests. They would consider all pertinent aspects of the annexation request and make determinations as appropriate. According to the developer, construction of the project would immediately commence upon approval of all necessary entitlements. The proposed project would be funded from private sources, and therefore is not subject to unsecured financing.

The WCWD Water Pollution Control Plant has a capacity of 12.5 mgd ADWF. The WCWD estimates a service area buildout population of 113,000 with an ADWF of 9.6 mgd and a PWWF of 68.2 mgd.[22] As previously stated, the proposed project would generate an estimated 29,165.7 gallons of wastewater per day. Therefore, the proposed project would add 0.029 mgd of wastewater to the WCWD Water Pollution Control Plant, which would be a nominal amount and the WCWD would have excess capacity to serve the proposed project and future projects.

As discussed in Chapter 4, Effects Found not to be Significant, the proposed project's industrial warehouse use would not result in significant direct or indirect population growth, such that the WCWD would not have sufficient capacity to serve the proposed project, existing customers, and future development. As a result, the proposed project would not significantly increase wastewater generation outside of what was already anticipated in the WCWD service area buildout prediction. Thus, the proposed project would be served by sufficient wastewater treatment capacity and would not result in a need for new or expanded wastewater treatment facilities. Therefore, impacts related to wastewater treatment capacity would be less than significant.

Level of Significance

Less than significant impact.

Landfill Capacity

Impact UTIL-4:	**The proposed project would not 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.**

Construction

During the project's construction phase, the existing building foundations would be demolished and removed as construction-related solid waste. The proposed project would be required to comply with Ordinance Code Chapter 418, which requires proper disposal of solid waste.[23] Keller Canyon Landfill and Acme Landfill would serve as the solid waste disposal site for the proposed project. Keller Canyon Landfill has a maximum permitted throughput of 3,500 tons per day and a remaining

[21] Hodge, Armando. Engineer III, WCWD. Personal communication: e-mail. October 12, 2021.
[22] Carollo Engineers. 2014. District-Wide Master Plan: Volume 1 – Executive Summary. November.
[23] Contra Costa County. Contra Costa County Ordinance Code Division 418 – Refuse.

capacity of 63,408,410 cubic yards.[24] Acme Landfill has a maximum permitted throughput of 1,500 tons per day and a remaining capacity of 6,195,000 cubic yards.[25] Construction waste generated by the proposed project would account for less than 1 percent of the total permitted capacity of both landfills. As such, the landfills contain sufficient capacity to serve the proposed project. Therefore, construction impacts related to landfill capacity would be less than significant.

Operation

Republic Services of West Contra Costa County would provide operational solid waste collection services for the project site. It is anticipated that solid waste services would be extended to the project site in late 2022. Daily and annual operational solid waste generation estimates for the proposed project are provided in Table 3.14-4. Operational solid waste generation for the proposed project was calculated using standard waste generation rates provided by CalRecycle.

Table 3.14-4: Project Operational Solid Waste Generation

Waste Generation Source	Size (square feet)	Approximate Waste Generation Rate	Approximate Waste Generation	
			Daily Total (tons)	Annual Total (tons)[a]
Manufacturing/ warehouse	555,537	1.42 pounds/100 square feet/day	3.94	1,438.1

Notes: 1 ton = 2,000 pounds
[a] Assumes operation 365 days.
Source: California Department of Resources, Recycling, and Recovery. 2019. Estimated Solid Waste Generation Rates. Website: https://www2.calrecycle.ca.gov/wastecharacterization/general/rates. Accessed April 18, 2021.

The proposed warehouse uses are estimated to generate a total of approximately 3.94 tons of solid waste per day. This waste volume represents less than 0.08 percent of the total combined daily permitted throughput for both landfills. The proposed warehouse uses are estimated to generate a total of approximately 1,438.1 tons of solid waste per year. Assuming 0.028 tons per cubic yard,[26] the proposed project would generate approximately 51,361 cubic yards of solid waste per year. This waste volume represents less than 0.09 percent of the total available capacity for both landfills. Moreover, the values shown in the table are not adjusted to account for recycling, composting and waste reduction activities that would further divert waste from landfills (as required by compliance with Ordinance Code 418-10, Recycling Requirements for Landfill Disposal). As such, the above-referenced estimates are conservative and may over-estimate the amount of solid waste to be generated by operation of the proposed project.

[24] California Department of Resources, Recycling, and Recovery. 2019. SWIS Facility/Site Activity Details Keller Canyon Landfill (07-AA-0032). Website: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/4407?siteID=228. Accessed April 18, 2021.
[25] California Department of Resources, Recycling, and Recovery. 2019. SWIS Facility/Site Activity Details Acme Landfill (07-AA-0002). Website: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/4396?siteID=217. Accessed April 18, 2021.
[26] U.S. Environmental Protection Agency. 2016. Volume-to-Weight Conversion Factors Municipal Solid Waste. April. Website: https://www.epa.gov/sites/production/files/2016-04/documents/volume_to_weight_conversion_factors_memorandum_04192016_508fnl.pdf. Accessed April 18, 2021.

In conclusion, the combined capacity of the Keller Canyon Landfill and Acme Landfill would be sufficient to serve the proposed project. Therefore, operational impacts related to landfill capacity would be less than significant.

Level of Significance

Less than significant impact.

Solid Waste Regulations Consistency

Impact UTIL-5:	**The proposed project would comply with federal, State, and local statutes and regulations related to solid waste.**

Construction

The proposed project would be required to comply with Division 418, Refuse, of the Ordinance Code related to solid waste reduction and recycling measures. These measures would ensure compliance with the California Integrated Waste Management Act by ensuring project construction waste is transferred to facilities that can adequately recycle solid waste. Thus, with compliance with existing Ordinance Code and the Integrated Waste Management Act, the proposed project would comply with applicable solid waste regulations and statutes, and impacts would be less than significant.

Operation

Project operation would be required to comply with applicable State and local regulations related to solid waste such as the California Integrated Waste Management Act and Division 418, Refuse, of the Ordinance Code. Adherence to the Ordinance Code would ensure sufficient solid waste collection and transportation is available for the proposed project, disposal sites contain sufficient capacity through permit review and inspections, and recycling programs are implemented to divert waste. As such, project operation would not impede the ability of the County to meet waste diversion requirements or cause the County to violate State or local statutes and regulations related to solid waste, and operational impacts would be less than significant.

Level of Significance

Less than significant impact.

3.14.5 - Cumulative Impacts

Water

The geographic scope of the cumulative potable water analysis is the EBMUD service area, which encompasses portions of Alameda and Contra Costa counties. The EBMUD water service area is 332 square miles. As discussed under Impact UTIL-2, EBMUD has adequate potable water supplies to serve the proposed project, as well as other existing and future users, through 2050 during normal years and up to two dry years of a multi-year drought. However, EBMUD would need supplemental water supplies to meet projected demand during a third dry year after 2020.[27] In the third year of a multi-year drought, EBMUD would have a need for up to 125 mgd of water in 2050. As described

[27] East Bay Municipal Utility District (EBMUD). Urban Water Management Plan 2015. Website: https://www.ebmud.com/water/about-your-water/water-supply/urban-water-management-plan/. Accessed March 19, 2021.

under Impact UTIL-2, during water shortage emergencies, many of the programs and projects in the EBMUD UWMP would be implemented to reduce water demand. As a result, the combination of EBMUD water shortage programs and water transfer programs would ensure EBMUD can provide adequate water supplies and would be available to serve the proposed project with existing and planned supplies.

Cumulative projects, including those listed in Chapter 3, Environmental Impact Analysis, Table 3-1, would also 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. In addition, cumulative projects would be required to comply with provisions of the Contra Costa County Ordinance Code, City of Richmond Ordinance Code, City of San Pablo Ordinance Code, and California Green Building Code related to water conservation. Therefore, the proposed project, in conjunction with identified cumulative projects in the County, would result in a less than significant cumulative impact related to water supply and water supply facilities.

Wastewater

The geographic scope of the cumulative wastewater analysis is the service area of WCWD, which provides wastewater collection and treatment services for contracted cities and residents and business in unincorporated western Contra Costa County. As discussed under Impact UTIL-1, the WCWD District-Wide Master Plan identifies and describes needed capacity increases and treatment process upgrades to accommodate anticipated future growth within the WCWD service area. In addition, the District-Wide Master Plan evaluated these improvement projects to determine how feasible and effective they would be to ensure the WCWD is able to serve the future population.[28] As described under Impact UTIL-3, the WCWD Water Pollution Control Plant would have sufficient capacity to serve all aspects of the proposed project, and a new or expanded wastewater treatment facility would not be required.

Cumulative projects, including those listed in Table 3-1, would also be required to demonstrate that sewer service is available to ensure that adequate sanitation can be provided. The District-Wide Master Plan determined that capacity exists to service the County and cumulative projects with respect to wastewater treatment facilities. Therefore, the proposed project, in conjunction with identified cumulative projects in the County would result in a less than significant cumulative impact related to wastewater generation and wastewater treatment facilities.

Storm Drainage

The geographic scope for cumulative storm drainage is the areas that drain to the Contra Costa County Flood Control and Water Conservation District's Drainage Area 19A, which would also accommodate the project's storm drainage, pursuant to Ordinance Code, Title 9 Division 914. As discussed under Impact UTIL-1, at operation, runoff from impervious areas on the project site, including roofs and paved areas, would be routed to five bioretention areas, landscaping, and bioretention swales before being discharged to the new storm drain system. Further, the proposed

[28] Carollo Engineers. 2014. District-Wide Master Plan: Volume 1 – Executive Summary. November.

stormwater facilities as part of the proposed project would reduce the operational stormwater runoff rates below the existing stormwater runoff rates and the existing culverts at Drainage Line A and Drainage Line B would have sufficient capacity to convey the 10-year storm event.[29] The proposed project would also implement a SWPPP as part of MM HYD-3, which would minimize flooding and the discharge of pollutants into waterbodies during construction.

Cumulative projects listed in Chapter 3, Environmental Impact Analysis, Table 3-1, predominantly consisting of industrial and non-residential uses located in unincorporated Contra Costa County, the City of Richmond, or the City of San Pablo, would generate additional stormwater runoff. The cumulative projects would be required to provide drainage facilities that collect and detain runoff such that off-site releases are controlled and do not create flooding. Other cumulative projects would also be required to implement pollution prevention measures during construction and at operation. 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 is the area served by the Keller Canyon Landfill and the Acme Landfill. The landfills have a combined total of 63.9 million cubic yards in remaining capacity. As described under Impact UTIL-4, the proposed project is estimated to generate 51,361 cubic yards of solid waste per year, which represents less than 0.09 percent of the total available capacity for both landfills. As such, the combined capacity of the Keller Canyon Landfill and Acme Landfill would be sufficient to serve the proposed project.

Cumulative projects listed in Table 3-1, consisting predominantly of industrial and non-residential uses located in unincorporated Contra Costa County, the City of Richmond, or the City of San Pablo, would generate construction and operational solid waste and, depending on the volumes and end uses, would implement recycling and waste reduction measures. Therefore, the proposed project, in conjunction with identified cumulative projects, would result in a less than significant cumulative impact related to solid waste generation and landfill capacity

Level of Cumulative Significance

Less than significant impact.

[29] The Drainage Study assumed existing conditions as of June 7, 2019 prior to the demolition of the three vacant buildings and concrete slabs and foundations located on the project site.

3.15 - Wildfire

3.15.1 - Introduction

This section describes the existing wildfire conditions in the project area as well as the relevant regulatory framework. This section also evaluates the possible impacts related to wildfire that could result from implementation of the proposed project. The descriptions and analysis in this section is based on information provided by the Contra Costa County General Plan (General Plan), Bay Area Air Quality Management District (BAAQMD), California Department of Forestry and Fire Protection (CAL FIRE), and the Contra Costa County Fire Protection District (CCCFPD). No comments were received during the Notice of Preparation (NOP) comment period related to wildfire.

3.15.2 - Existing Setting

Wildfire Hazard Area Designations

Contra Costa County

Land uses in the Contra Costa County (County) range from rural, agricultural, and open space to urban and developed. Most of the County is identified as susceptible to moderate wildland fire hazards, while isolated areas in the western and central areas of the County have a high susceptibility.[1] According to the CAL FIRE Hazard Severity Zone Map, much of the County is in a moderate, high, and very high fire hazard zone due to the mountainous terrain and natural vegetation.[2]

Project Site

According to CAL FIRE, the project site is not located in a State Responsibility Area (SRA) or a Local Responsibility Area (LRA) Fire Hazard Severity Zone.[3] The nearest Fire Hazard Severity Zone is located approximately 2.15 miles southeast of the project site (Wildcat Canyon Regional Park) and is designated as a Very High Fire Hazard Severity Zone.[4]

Wildfire-conducive Conditions

Grasslands and other vegetation in California easily ignite, particularly in dry seasons. Wildfire is a serious hazard in high dry fuel load areas, particularly near areas of natural vegetation and steep slopes since fires tend to burn more rapidly on steeper terrain. Wildfire is also a serious hazard in areas of high wind, given that fires will travel faster and farther geographically when winds are higher. Furthermore, wildfire is more likely in areas where electric power lines are located above ground where they may encounter vegetation or building materials.

Contra Costa County

Land uses in the County range from rural, agricultural, and open space to urban and developed land. According to the CAL FIRE, much of the County is in Fire Hazard Severity Zones due its mountainous

[1] Contra Costa County General Plan 2005-2020. 2005.
[2] California Department of Forestry and Fire Protection (CAL FIRE). Fire Hazard Severity Zone Viewer. Website: http://egis.fire.ca.gov/FHSZ/. Accessed March 20, 2021.
[3] Ibid.
[4] Ibid.

terrain and natural vegetation. In particular, areas near open spaces such as Mount Diablo State Park, Briones Regional Park, and Tilden Regional Park, are located in "High" and "Very High" fire hazard severity zones.[5] In general, the average wind speed in the County ranges from 2-14 miles per hour (mph) and blows northeast.[6] Electric power lines mostly occur in urban areas and along roadways. Natural gas pipelines occur frequently across the County, including residential and commercial areas. Natural gas poses a lower risk of causing fire than petroleum products because it is transported at lower pressures and when released, rises and dissipates into the atmosphere.[7] There are petroleum and natural gas pipelines that traverse the western portion of the County, generally near the major roadways of Richmond Parkway and Interstate 80 (I-80).

Project Site

The project site is within the western portion of the County, near San Pablo Bay, and is relatively flat, with elevations ranging between approximately 12 to 20 feet above mean sea level. The project site contains the foundations of several former residential structures, barns, and greenhouse buildings, but no structures remain on-site. Fallow agricultural land is found on-site, consisting primarily of non-native grasses, herbaceous plants, and forbs. Additionally, the project site contains several trees and overhead electric power lines and poles along Brookside Drive and Fred Jackson Way.

The project site is mostly surrounded by urbanized uses. The project site is also surrounded by features that provide fuel breaks in the event of a fire, such as Brookside Drive, Fred Jackson Way, DaVilla Road, Wildcat Creek, and San Pablo Creek.

The BAAQMD monitors the Bay Area's air quality at a number of stations, and the closest station to the project site is located at Point San Pablo in the City of Richmond, approximately 3.3 miles to the west. The average wind speed at Point San Pablo varies from month to month and ranged from 6-14 mph in 2018.[8]

Fire Protection and Emergency Medical Services

Northern California

CAL FIRE is responsible for fire protection and stewardship of over 31 million acres of California's privately owned wildlands. CAL FIRE also provides varying levels of emergency services in 36 of the California's 58 counties via contracts with local governments. Because of the Department's size and major incident management experience, it is often asked to assist or take the lead in disasters.[9] In October 2017, a series of wildfires occurred in Northern California resulting in extensive property damage. In November 2018, the Camp Fire wildfire occurred in Northern California, resulting in the deadliest wildfire to occur in State history.[10] In September and October 2020, the Glass Fire burned

[5] California Department of Forestry and Fire Protection (CAL FIRE). Fire Hazard Severity Zone Viewer. Website: http://egis.fire.ca.gov/FHSZ/. Accessed March 20, 2021.
[6] Bay Area Air Quality Management District (BAAQMD). 2019. Air District Air Quality Data. Website: http://www.baaqmd.gov/about-air-quality/current-air-quality/air-monitoring-data/#/air-quality-home. Accessed March 21, 2021.
[7] Contra Costa County Department of Conservation and Development. 2005. Contra Costa County General Plan. January 18.
[8] Bay Area Air Quality Management District (BAAQMD). 2019. Air District Air Quality Data. Website: http://www.baaqmd.gov/about-air-quality/current-air-quality/air-monitoring-data/#/air-quality-home. Accessed March 21, 2021.
[9] California Department of Forestry and Fire Protection (CAL FIRE). 2021. About Us. Website: https://www.fire.ca.gov/about-us/. Accessed April 19, 2021.
[10] California Department of Forestry and Fire Protection (CAL FIRE). 2020. Top 20 Deadliest California Wildfires. Website: https://www.fire.ca.gov/media/lbfd0m2f/top20_deadliest.pdf. Accessed April 19, 2021.

over 67,484 acres and destroyed 1,555 structures, including 308 homes and 343 commercial buildings in Napa County, as well as 334 homes in Sonoma County.[11]

Contra Costa County

The CCCFPD provides fire protection and emergency medical services to Richmond and the surrounding unincorporated areas of the County. The CCCFPD serves the County with 25 fire stations and maintains mutual aid agreements with East Contra Costa Fire Protection District, Kensington Fire Protection District, Moraga-Orinda Fire Protection District, Rodeo-Hercules Fire Protection District, and San Ramon Valley Fire Protection District.[12] The CCCFPD is comprised of 22 engine companies, five truck companies, as well as one rescue squad responding from 25 stations to service the County.[13]

According to the General Plan, wildfire hazards are a considerable problem in undeveloped areas and in areas of extensive un-irrigated vegetation. Areas of Central Contra Costa County that contain steep slopes and are covered with natural vegetation (e.g., Mount Diablo State Park, Briones Regional Park, and Tilden Regional Park) as well as areas in East County outside the urban limit line that are used as dry farming of grains for feed are extremely flammable during the late summer and fall.[14]

The County Office of the Sheriff Emergency Services Division is responsible for planning, outreach, and training or disaster management and emergency preparedness.[15] Per Policy 7-62 of the General Plan, the County strives to reach a maximum running time of 3 minutes and/or 1.5 miles from the nearest fire station. The main routes into and out of the County that would most likely serve as evacuation routes are I-80, Interstate 680 (I-680), and Interstate 580 (I-580), as well as State Route 4 (SR-4) and SR-24.

Project Site

As discussed under Impact TRANS-3 in Section 3.13, Transportation, based on the distance from Richmond Fire Station No. 62 to the project site, the response time for a fire engine traveling at an average speed of 35 mph would be 1 minute, 53 seconds. The main arterial roads into and out of the project vicinity are Fred Jackson Way and Brookside Drive, which would serve as the project's main emergency response and evacuation routes. In addition, there are secondary roads that could be used for emergency response and evacuation, such as Parr Boulevard, Pittsburg Avenue, and Richmond Parkway.

[11] California Department of Forestry and Fire Protection (CAL FIRE). 2020. Glass Fire. Website: https://www.fire.ca.gov/incidents/2020/9/27/glass-fire/. Accessed April 23, 2021.

[12] Contra Costa County, California. 2021. Fire Protection Districts. Website: https://www.contracosta.ca.gov/1550/Fire-Protection-Districts. Accessed April 19, 2021.

[13] Contra Costa County Fire Protection District (CCCFPD). 2014. Fire/Rescue. Website: https://www.cccfpd.org/fire-rescue. Accessed April 19, 2021.

[14] Contra Costa County General Plan. 2005. Contra Costa County General Plan. Safety Element. Website: https://www.contracosta.ca.gov/DocumentCenter/View/30920/Ch10-Safety-Element?bidId=. Accessed April 19, 2021.

[15] Contra Costa County Office of the Sheriff. Emergency Services Division. Website: https://www.cocosheriff.org/disaster-preparedness/emergency-services-division. Accessed March 20, 2021.

Post-fire Slope Instability and Drainage Pattern Changes

Slope instability from wildfire scarring of the landscape can result in more intensive flooding and landslides. These post-fire slope soils and altered drainage patterns can more easily creep away downslope sides of foundations and can also reduce lateral support.

Contra Costa County

The major post-wildfire hazards in the County are unstable hill slopes and altered drainage patterns. Slopes may suffer landslides, slumping, soil slips, and rockslides. The General Plan has historically recognized that major slope areas in excess of 26 percent are "not readily developable" or "undevelopable," recognizing the cost and engineering difficulties of grading steep slopes as well as their inherent unsuitability for development.[16] Figure 10-6 of the General Plan shows Landslide Hazards in the County. In 2018, 2019, and 2020, there were nine, eight, and five CAL FIRE reported incidents in the County, respectively.

Project Site

According to Figure 10-6 of the General Plan, the project site is not located on a site susceptible to landslides or an area where landslides previously occurred. In addition, the drainage pattern on the project site has not been previously altered due to a fire event and generally flows via overland flow toward Brookside Drive and Fred Jackson Way. Furthermore, wildfire has not previously occurred on the project site.

3.15.3 - Regulatory Framework

Federal

United States Department of Interior

Review and Update of the 1995 Federal Wildland Fire Management Policy

1. Safety—Firefighter and public safety is the first priority. All Fire Management Plans and activities must reflect this commitment.
2. Fire Management and Ecosystem Sustainability—The full range of fire management activities will be used to help achieve ecosystem sustainability, including its interrelated ecological, economic, and social components.
3. Response to Wildland Fire—Fire, as a critical natural process, will be integrated into land and resource management plans and activities on a landscape scale, and across agency boundaries. Response to wildland fire is based on ecological, social, and legal consequences of the fire. The circumstances under which a fire occurs, and the likely consequences on firefighter and public safety and welfare, natural and cultural resources, and values to be protected dictate the appropriate management response to the fire.
4. Use of Wildland Fire—Wildland fire will be used to protect, maintain, and enhance resources and, as nearly as possible, be allowed to function in its natural ecological role. Use of fire will be based on approved Fire Management Plans and will follow specific prescriptions contained in operational plans.

[16] Contra Costa County Office of the Sheriff. Emergency Services Division. Website: https://www.cocosheriff.org/disaster-preparedness/emergency-services-division. Accessed March 20, 2021.

5. Rehabilitation and Restoration—Rehabilitation and restoration efforts will be undertaken to protect and sustain ecosystems, public health, and safety, and to help communities protect infrastructure.
6. Protection Priorities—The protection of human life is the single, overriding priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be based on the values to be protected, human health and safety, and the costs of protection. Once people have been committed to an incident, these human resources become the highest value to be protected.
7. Wildland Urban Interface—The operational roles of federal agencies as partners in the Wildland Urban Interface are wildland firefighting, hazardous fuels reduction, cooperative prevention and education, and technical assistance. Structural fire suppression is the responsibility of tribal, State, or local governments. Federal agencies may assist with exterior structural protection activities under formal Fire Protection Agreements that specify the mutual responsibilities of the partners, including funding. (Some federal agencies have full structural protection authority for their facilities on lands they administer and may also enter into formal agreements to assist State and local governments with full structural protection.)
8. Planning—Every area with burnable vegetation must have an approved Fire Management Plan. Fire Management Plans are strategic plans that define a program to manage wildland and prescribed fires based on the area's approved land management plan. Fire Management Plans must provide for firefighter and public safety; include fire management strategies, tactics, and alternatives; address values to be protected and public health issues; and be consistent with resource management objectives, activities of the area, and environmental laws and regulations.
9. Science—Fire Management Plans and programs will be based on a foundation of sound science. Research will support ongoing efforts to increase our scientific knowledge of biological, physical, and sociological factors. Information needed to support fire management will be developed through an integrated interagency fire science program. Scientific results must be made available to managers in a timely manner and must be used in the development of land management plans, Fire Management Plans, and implementation plans.
10. Preparedness—Agencies will ensure their capability to provide safe, cost-effective fire management programs in support of land and resource management plans through appropriate planning, staffing, training, equipment, and management oversight.
11. Suppression—Fires are suppressed at minimum cost, considering firefighter and public safety, benefits, and values to be protected, consistent with resource objectives.
12. Prevention—Agencies will work together and with their partners and other affected groups and individuals to prevent unauthorized ignition of wildland fires.

13. Standardization—Agencies will use compatible planning processes, funding mechanisms, training and qualification requirements, operational procedures, values-to-be-protected methodologies, and public education programs for all fire management activities.
14. Interagency Cooperation and Coordination—Fire management planning, preparedness, prevention, suppression, fire use, restoration and rehabilitation, monitoring, research, and education will be conducted on an interagency basis with the involvement of cooperators and partners.
15. Communication and Education—Agencies will enhance knowledge and understanding of wildland fire management policies and practices through internal and external communication and education programs. These programs will be continuously improved through the timely and effective exchange of information among all affected agencies and organizations.
16. Agency Administrator and Employee Roles—Agency administrators will ensure that their employees are trained, certified, and made available to participate in the wildland fire program locally, regionally, and nationally as the situation demands. Employees with operational, administrative, or other skills will support the wildland fire program, as necessary. Agency administrators are responsible and will be held accountable for making employees available.
17. Evaluation—Agencies will develop and implement a systematic method of evaluation to determine effectiveness of projects through implementation of the 2001 Federal Fire Policy. The evaluation will assure accountability, facilitate resolution of areas of conflict, and identify resource shortages and agency priorities.

State

California Emergency Response Plan

California has developed an emergency response plan to coordinate emergency services provided by federal, State, and local governments and private agencies. Responding to wildfire incidents is one part of this plan. The plan is administered by the California Governor's Office of Emergency Services, which coordinates the responses of other agencies. The County Office of the Sheriff's Emergency Services Division coordinates response to emergencies in unincorporated areas of the County. Emergency response team members respond and work with local fire and police agencies, emergency medical providers, the California Highway Patrol, CAL FIRE, the California Department of Fish and Wildlife (CDFW), and California Department of Transportation (Caltrans).

California Department of Forestry and Fire Protection Threat Potential Mapping

CAL FIRE has mapped fire threat potential throughout California, based on the availability of fuel and the likelihood of an area burning (based on topography, fire history, and climate). The threat levels include no fire threat, moderate, high, and very high fire threat. Further, the maps designate the County as the LRA for the project site. Additionally, CAL FIRE produced a 2010 Strategic Fire Plan for California, which contains goals, objectives, and policies to prepare for and mitigate the effects of fire on California's natural and built environments. CAL FIRE's Office of the State Fire Marshal

provides oversight of enforcement of the California Fire Code as well as overseeing hazardous liquid pipeline safety.

California Building Code

The State of California provided a minimum standard for building design through the 2019 California Building Standards Code (CBC), which is located in Part 2 of Title 24 of the California Code of Regulations. The 2019 CBC is based on the 2018 International Building Code, but has been modified for California conditions. It is generally adopted on a jurisdiction by-jurisdiction basis, subject to further modification based on local conditions. Commercial and residential buildings are plan-checked by local City and County building officials for compliance with the CBC. Typical fire safety requirements of the CBC include the installation of sprinklers in all new high-rise buildings and residential buildings; the establishment of fire resistance standards for fire doors, building material; and specific types of construction.

California Public Resources Code

The California Public Resources Code includes fire safety regulations that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction equipment that use an internal combustion engine; [17] specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire suppression equipment that must be provided on-site for various types of work in fire-prone areas.

These regulations include the following:

- Earthmoving and portable equipment with internal combustion engines shall be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (Public Resources Code [PRC] § 4442);
- Appropriate fire suppression equipment shall be maintained during the highest fire danger period—from April 1 to December 1 (PRC § 4428);
- On days when a burning permit is required, flammable materials shall be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor shall maintain the appropriate fire suppression equipment (PRC § 4427); and
- On days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines shall not be used within 25 feet of any flammable materials (PRC § 4431).

Regional

Association of Bay Area Governments Hazard Mitigation Plan

The Association of Bay Area Governments (ABAG) multi-jurisdictional Local Hazard Mitigation Plan for the San Francisco Bay Area was updated in 2010 in partnership with the Bay Conservation and

[17] A spark arrestor is a device that prohibits exhaust gases from an internal combustion engine from passing through the impeller blades where they could cause a spark. A carbon trap is commonly used to retain carbon particles from the exhaust.

Development Commission. Adapting to Rising Tides Program to support local governments in the regional plan for existing and future hazards of climate change. This detailed 5-year plan identifies potential natural and human-made hazards, assesses their potential risks, and includes mitigation methods to reduce risks. The potential hazards identified in the plan include earthquakes and liquefaction, wildfires, floods, drought, solar storms, dam or levee failure, disease outbreak, freezes, wind, heat, thunder and lightning storms, siltation, tornadoes, hazardous materials, slope failure and mudflows, and other hazards. Similarly, mitigation measures include hazard event planning, emergency preparedness coordination, education, facility upgrades, and monitoring actions.

Local

Contra Costa County Hazard Mitigation Plan

The County and a partnership of local governments within the County have developed a Hazard Mitigation Plan (HMP) to reduce future losses resulting from disasters. Hazard mitigation is the use of long- and short-term strategies to reduce the loss of life, personal injury, and property damage that can result from a disaster. It involves planning efforts, policy changes, programs, capital projects, and other activities that can mitigate the impacts of hazards. The HMP contains the following Goals aimed at reducing the vulnerability from natural hazards within the County in a cost-effective manner:

Goal 1 Save, or protect lives and reduce injury.

Goal 2 Increase resilience of infrastructure and critical facilities.

Goal 3 Avoid, minimize, or reduce damage to property.

Goal 4 Encourage the development and implementation of long-term, cost-effective, and environmentally sound mitigation projects.

Goal 5 Build and support capacity to enable local government and the public to prepare, respond, and recover from the impact of natural hazards.

Contra Costa Emergency Operations Plan

The County Operational Area Emergency Operations Plan (EOP) addresses response to emergency incidents affecting the County. The Contra Costa Operational Area consists of the cities/towns, special districts, reclamation districts, municipal improvement districts and the unincorporated areas within the County. The EOP is based on the functions and principles of the California Standardized Emergency Management System, the National Incident Management System, and the Incident Command System. It identifies how the County emergency operational system fits into the overall California and national risk-based, all-hazard emergency response and recovery operations plans.

Contra Costa County General Plan

Public Facilities/Services Element

The General Plan Public Facilities/Services Element establishes the following goals, policies, and implementation measures related to wildfire hazards relevant to this analysis:

Goal 7-AA To incorporate requirements for fire-safe construction into the land use planning and approval process.

Goal 7-AD To provide special fire protection for high-risk land uses and structures.

Policies

Policy 7-64 New development shall pay its fair share of costs for new fire protection facilities and services.

Policy 7-66 Sprinkler systems may be required in new residential structures, where necessary to protect health, safety and welfare.

Policy 7-80 Wildland fire prevention activities and programs such as controlled burning, fuel removal, establishment of fire roads, fuel breaks and water supply, shall be encouraged to reduce wildland fire hazards.

Policy 7-81 All structures located in Hazardous Fire Areas, as defined in the Uniform Fire Code, shall be constructed with fire-resistant exterior materials, such as fire safe roofing, and their surroundings are to be irrigated and landscaped with fire-resistant plants, consistent with drought resistance and water conservation policies.

Policy 10-89 Every high-rise building shall be designed and constructed to provide for the evacuation of occupants and/or for the creation of a safe environment in case of a substantial disaster, such as a severe earthquake or fire.

Implementation Measures

Implementation Measure 7-at

The Conservation and Development Department shall include fire agency code requirements requested by the districts as advisory notes to the applicant within proposed conditions of project approval when the Planning Agency is considering subdivisions, development plans, use permits and other entitlement requests.

Implementation Measure 7-au

Fire protection agencies shall be afforded the opportunity to review projects and submit conditions of approval for consideration to determine whether:

- There is an adequate water supply for fire fighting
- Road widths, road grades and turnaround radii are adequate for emergency equipment; and
- Structures are built to the standards of the Uniform Building Code, the Uniform Fire Code, other State regulations, and local ordinances regarding the use of fire-retardant materials and detection, warning and extinguishment devices.

3.15.4 - Impacts and Mitigation Measures

According to the California Environmental Quality Act (CEQA) Guidelines Appendix G Environmental Checklist, to determine whether wildfire impacts would be considered significant from implementation of the proposed project, the following questions are analyzed and evaluated. If located in or near SRAs or lands classified as very high fire hazard severity zones, would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Approach to Analysis

The project site is not located in a "Fire Hazard Severity Zone" in an SRA or a "Very High Fire Hazard Severity Zone" in a local, State, or federal responsibility area. The closest designated "Very High Fire Hazard Severity Zone" is located approximately 2.15 miles to the southeast of the project site (Wildcat Canyon Regional Park). The closest BAAQMD air quality monitoring station to the project site is located at Point San Pablo in the City of Richmond, approximately 3.3 miles to the west. The average wind speed at Point San Pablo varies from month to month and ranged from 6-14 mph in 2018.[18]

As the project site is located 2.15 miles from an SRA or lands classified as "Very High Fire Hazard Severity Zone," this evaluation focuses on whether the proposed project would result in changes to the physical environment that would cause or exacerbate adverse effects related to wildfires or whether the proposed project would be placed in a location susceptible to wildfire or post-wildfire conditions. The evaluation also includes a determination of whether changes to the physical environment caused by the proposed project would impair or interfere with emergency response plans, expose people to pollutant concentrations from a wildfire or uncontrolled spread of a wildfire, expose people/structures to downslope flooding or landslides, or include installation or maintenance of infrastructure that may exacerbate fire risk. The following analysis is based, in part, on information provided by the General Plan and CAL FIRE website.

[18] Bay Area Air Quality Management District (BAAQMD). 2019. Air District Air Quality Data. Website: http://www.baaqmd.gov/about-air-quality/current-air-quality/air-monitoring-data/#/air-quality-home. Accessed March 21, 2021.

Specific Thresholds of Significance

For purposes of this analysis, the following thresholds are used to evaluate the significance of wildfire impacts resulting from implementation of the proposed project.

- Impaired implementation of or interference with an adopted emergency response plan or emergency evacuation plan via blockage of an evacuation route or provision of only one access point for emergency vehicles.
- Location in or near area of steep slopes, high-wind areas, or historical wildfire burn areas leading to greater wildfire risk and, thereby, exposing project occupants to smoke and other wildfire-related air pollutants.
- Installation or maintenance of roads, fuel breaks, emergency water sources, electrical power lines, or natural gas lines that may exacerbate fire risk.
- Location in or near area of wildfire-scarred slopes or altered drainage areas and, thereby, exposing project occupants to flooding and landslide hazards.

Impact Evaluation

Emergency Response/Evacuation Plan Consistency

Impact WILD-1: The proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan.

Construction

During construction, it is expected that construction equipment and vehicles would be accessing and leaving the project site, which could potentially impede evacuation or emergency vehicle access. However, as discussed under Impact TRANS-3 and Impact HAZ-6, the proposed project would result in less than significant impacts related to emergency vehicle access. In addition, the proposed project would comply with the County EOP, ensuring efficient response to emergency incidents affecting the County. Furthermore, blockage of an evacuation route would not occur during project construction because the proposed project would not result in road closures to either Fred Jackson Way or Brookside Drive, which are the most likely evacuation routes from the project site. Therefore, construction impacts related to emergency response/evacuation plan consistency would be less than significant.

Operation

As indicated in Section 3.12, Public Services, Impact PUB-1, and Impact PUB-2, and Section 3.8, Hazards and Hazards Materials, Impact HAZ-6, the proposed project would be adequately served by police and fire services, including respective evacuation or emergency vehicle access. The proposed project would not create a permanent increase in population unaccounted for in the General Plan that could lead to overwhelming calls for emergency services. In addition, the proposed project would be designed in accordance with the County's standards to accommodate emergency vehicle access by providing six points of access to the project site and a 26-foot-wide fire lane throughout the site that would be available to emergency vehicles. Furthermore, blockage of an evacuation route would not occur during project operation because the proposed project would not result in road closures to

either Fred Jackson Way or Brookside Drive, which are the most likely evacuation routes from the project site. With adherence to General Plan Policy 7-64, and Implementation Measures 7-at and 7-au, which recommend and require development fees, fire agency project review, and creation of a safe environment in case of substantial disaster, the proposed project would not conflict with the County EOP or General Plan. Therefore, operational impacts related to emergency response/evacuation plan consistency would be less than significant.

Level of Significance

Less than significant impact.

Expose Project Occupants to Pollutant Concentrations from Wildfire

Impact WILD-2: The proposed project would not due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

Construction

Impacts related to exposure of project occupants to pollutants concentrations from wildfire are limited to operational impacts. No respective construction impacts would occur.

Operation

As indicated by the General Plan, fire hazards present a considerable problem throughout the County, primarily within undeveloped areas with natural vegetation and steep slopes. The project site is located within the western portion of the County, near San Pablo Bay, and is relatively flat, with elevations ranging between approximately 12 to 20 feet above mean sea level. The project site is mostly surrounded by urbanized uses on relatively flat areas (approximately 12 to 22 feet above mean sea level) lacking in woodlands or vegetation that could provide fuel load for wildfire, or steep slopes that could cause fire to spread more rapidly. The project site is surrounded by other features that provide fuel breaks in the event of a fire, such as Brookside Drive, Fred Jackson Way, DaVilla Road, Wildcat Creek, and San Pablo Creek. The closest open space area is located approximately 4.2 miles east of the project site.

According to CAL FIRE, the project site is not located in an SRA or a LRA Fire Hazard Severity Zone.[19] The nearest Fire Hazard Severity Zone is located approximately 2.15 miles southeast of the project site (Wildcat Canyon Regional Park) and is designated as a Very High Fire Hazard Severity Zone.[20] The BAAQMD monitors the Bay Area's air quality at a number of stations, and the closest station to the project site is located at Point San Pablo in the City of Richmond, approximately 3.3 miles to the west. The average wind speed at Point San Pablo varies from month to month and ranged from 6-14 mph in 2018.[21] Given that the project site is not located on or near steep terrain surrounded by

[19] California Department of Forestry and Fire Protection (CAL FIRE). Fire Hazard Severity Zone Viewer. Website: http://egis.fire.ca.gov/FHSZ/. Accessed March 20, 2021.

[20] Ibid.

[21] Bay Area Air Quality Management District (BAAQMD). 2019. Air District Air Quality Data. Website: http://www.baaqmd.gov/about-air-quality/current-air-quality/air-monitoring-data/#/air-quality-home. Accessed March 21, 2021.

natural vegetation, is mostly surrounded by urban uses, and does not consistently experience high winds, the project site would not be prone to wildfires.

The removal of existing vegetation and trees from the project site would reduce the site's existing fuel load. Furthermore, compliance with applicable State and local plans and regulations would decrease the risk of impacts related to wildland fire hazards. Specifically, General Plan policies incorporate requirements for fire-safe construction into the land use planning and approval process and ensure special fire protection for high-risk land uses and structures. The County also implements an EOP, which addresses response to emergency incidents affecting the County. Furthermore, as indicated in Section 3.12, Public Services, the proposed project would be adequately served in terms of fire protection services by the CCCFPD. Finally, the proposed warehouses would be required to comply with the California Fire Code regarding emergency access and types of building materials. Therefore, impacts related to exposure of project occupants to pollutant concentrations from a wildfire or uncontrolled spread of wildfire would be less than significant.

Level of Significance

Less than significant impact.

Infrastructure That Exacerbates Fire Risk

Impact WILD-3:	**The proposed project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.**

Construction

Impacts related to installation or maintenance of infrastructure (such as roads, fuel breaks, emergency water sources, electrical power lines, or natural gas lines) that may exacerbate fire risk are limited to operational impacts. No respective construction impacts related to infrastructure that could exacerbate fire risk would occur.

Operation

The proposed project would include adequate emergency access via existing roads at six access points. The project site is in an urban area surrounded by existing roadways. The proposed project would not require the installation of firebreaks, because it is in an urban area surrounded by existing development and the site contains little natural vegetation. Furthermore, the project site is surrounded by features that provide fuel breaks in the event of a fire, such as Brookside Drive, Fred Jackson Way, DaVilla Road, Wildcat Creek, and San Pablo Creek. The proposed project would not require emergency water sources, because potable water is currently provided by the East Bay Municipal Utility District, which has adequate water supplies available to serve the project and future development during normal, dry, and multiple dry years. New electrical power and natural gas lines on and connecting to the project site would be installed below ground, minimizing potential ignition and related fire risk above ground, at the project site according to the CBC, Uniform Fire Code, and Contra Costa County General Plan Implementation Measure 7-au. Lastly, the other off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic

calming improvements would not exacerbate fire risk. Therefore, impacts related to infrastructure that exacerbates fire risk would be less than significant.

Level of Significance

Less than significant impact.

Flooding and Landslide Hazards Due to Post-fire Slope Instability/Drainage Changes

Impact WILD-4:	**The proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.**

Construction

The project site is not located on or near steep slopes susceptible to landslides or downstream flooding. The project site has also not been affected by previous wildfires that could have resulted in drainage changes or loss of vegetation. Therefore, no respective construction impacts related to flooding and landslide hazards due to post-fire slope instability or drainage changes would occur.

Operation

The project site is not located on or near steep slopes susceptible to landslides or downstream flooding. The project site has also not been affected by previous wildfires that could have resulted in drainage changes or loss of vegetation. Therefore, impacts related to flooding and landslide hazards due to post-fire slope instability or drainage changes would be less than significant.

Level of Significance

Less than significant impact.

3.15.5 - Cumulative Impacts

The geographic scope of the cumulative analysis related to wildfire is the project vicinity or roughly the western portion of the County. The analysis also considers the foreseeable development projects listed in Chapter 3, Environmental Impact Analysis, Table 3-1, Cumulative Projects, in unincorporated Contra Costa County and the surrounding cities, in addition to the proposed project.

Wildfire Hazards and Emergency/Evacuation Response

A combination of federal, State, and local regulations limit or minimize the potential for exposure to wildfires by reducing the amount of development in wildland urban interface areas, ensuring new development is developed according to the CBC and Uniform Fire Code, and incorporating requirements for fire-safe construction into the land use planning. Development listed in Table 3-1 consists predominantly of residential, commercial, and industrial development. The types and sizes of development anticipated in Table 3-1 would not be located in designated and High or Very High Fire Hazard Zones. In addition, all projects in Table 3-1 would be in areas that are already developed, and do not contain significant levels of dry fuel susceptible to ignition, or significantly high average wind speeds.

The cumulative projects, listed in Table 3-1, would result in predominantly in-fill development and would not significantly increase emergency services beyond the existing service area. Furthermore, all cumulative project construction would adhere to the County Building Codes that are designed to minimize the potential for uncontrolled fires. Adherence to County Building Codes would ensure that California Fire Code standards such as automatic sprinkler systems and management of fuel loads in response to annual inspection by the Fire Department are included in development. Once cumulative development is proposed, the County assesses the needs for fire protection services and informs efforts to improve or expand needed facilities. All development would, however, comply with emergency access requirements, such as two emergency vehicle access points, as a condition of construction. Furthermore, the cumulative projects would not result in permanent road closures, nor impede an established emergency or evacuation access route, such as Brookside Drive, Fred Jackson Way, Pittsburg Avenue, Parr Boulevard, and Richmond Parkway, or interfere with emergency response requirements, such as fire protection response time standards established by the General Plan. As such, there would be a less than significant cumulative impact associated with wildfire hazards and emergency/evacuation response.

Level of Cumulative Significance before Mitigation

Less than significant impact.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 4: EFFECTS FOUND NOT TO BE SIGNIFICANT

4.1 - Introduction

This chapter is based on the CenterPoint Properties Project Draft Environmental Impact Report (Draft EIR) Notice of Preparation (NOP), dated November 1, 2019, and contained in Appendix A of this Draft EIR. The NOP was prepared to identify the potentially significant effects of the proposed project and was circulated for public review between November 1, 2019, and December 2, 2019. In response to the NOP, no public comments were received related to agriculture, forestry, minerals, population, housing, parks, or recreation, and the lead agency determined that there was no substantial evidence of a potentially significant effect related to Agriculture and Forestry Resources, Mineral Resources, Population and Housing, and Parks and Recreational Facilities.[1] Consistent with California Environmental Quality Act (CEQA) Guidelines Section 15128, this chapter provides a brief description of topics found to have no potential impact, or a less than significant impact, based, in part, on the NOP, the NOP public comments received, and/or more detailed analysis conducted as part of the preparation of this Draft EIR.

4.2 - Environmental Effects Found not to be Significant

4.2.1 - Agriculture and Forestry Resources

The Contra Costa County General Plan (General Plan) designates the site as Light Industry (LI) and Heavy Industry (HI). The site is located within the P-1 Zoning District on the County's Zoning Map. The P-1 Zoning District is intended to support large-scale integrated development in compliance with the General Plan designations. The General Plan Conservation Element Figure 8-2 does not delineate the project site as an Important Agricultural Area.

According to the California Department of Conservation Farmland Mapping and Monitoring Program, the site is mapped as Grazing Land (29.36 acres), Urban and Built-Up Land (1.12 acres), and Unique Farmland (1 acre).[2] While the site was historically used as cut flower nurseries and farmland to grow row crops dating to the late 1920s, it does not currently support these uses, nor has it been used for agricultural purpose in the recent past. In addition, the project site is not under a Williamson Act Contract, nor are there any Williamson Act contracts in the immediate vicinity.[3] As mentioned above, the project site is designated for LI and HI uses. The site is not zoned for agricultural use and the proposed project would be consistent with the above designations.

---

1 This Effects Found not to be Significant Chapter is limited to entire topical areas found to be less than significant. In some instances, throughout this document, specific impacts that were found to be less than significant are nonetheless included in the Draft EIR topical sections (Sections 3.1 through 3.15) for purposes of clarity and to facilitate the readers' understanding of the overall environmental impact within the topical area.

2 California Department of Conservation. 2016.California Important Farmland Finder. Website: https://maps.conservation.ca.gov/dlrp/ciff/. Accessed August 24, 2020.

3 Contra Costa County Department of Conservation and Development. 2020. 2016 Agricultural Preserves Map. Website: https://www.contracosta.ca.gov/DocumentCenter/View/882/Map-of-Properties-Under-Contract?bidId=. Accessed August 24, 2020.

As such, construction and operation of the proposed project would not result in the conversion of Prime Farmland or Farmland of Statewide Importance to non-agricultural uses, nor would it conflict with any zoning for agricultural use or a Williamson Act Contract, nor would it conflict with any zoning for forestland or timberland and would not result in loss or conversion of forestland to non-forest uses. Although the project site contains 1 acre of Unique Farmland, development of the project site does not represent an unplanned conversion of agricultural land. Therefore, impacts related to agriculture and forestry resources would be less than significant.

4.2.2 - Mineral Resources

There are no mineral resource recovery sites on or in the project vicinity. A Mineral Resource Zones and Resources Sectors map prepared by the California Geological Survey indicates that the project site is located in an area that does not contain any known occurrences of undetermined mineral significance.[4] In addition, the General Plan Conservation Element Figure 8-4 indicates that no mineral resource zones are located on the project site or within the surrounding City of Richmond.[5] The site is designated as LI and HI by the General Plan. As such, construction and operation of the proposed project would not result in the loss of availability of a known mineral resource of value to the region and residents of the State. Therefore, no impact related to mineral resources would occur.

4.2.3 - Population and Housing

There are two types of population growth: direct and indirect. Direct population growth occurs from the development of new residential units or businesses. Indirect population growth occurs from the removal of a barrier to growth (e.g., the extension of urban infrastructure to an undeveloped area). The proposed project includes the development of industrial warehouse buildings; no residential units are proposed.

The proposed project would require a temporary construction workforce to construct the warehouse buildings and associated improvements. The number of construction workers needed over the 13-month construction period would vary depending on the specific stage of construction. It is expected that the construction workforce would be generated from the existing job market. As such, impacts related to the inducement of population growth during construction would be less than significant.

Once operational, the proposed project would employ approximately 573 workers on-site for daily operation. Because of the nature of the proposed project, the kinds of labor skills required for the project are typically filled by workers who are already present in the local labor force. Therefore, impacts related to direct population growth at operation would be less than significant.

The proposed project is located within an urbanized portion of Contra Costa County and is surrounded by agricultural and industrial businesses, as well as an elementary school and ballpark. The proposed project would connect to the existing water and sanitary sewer lines within Fred Jackson Way and Brookside Drive. As such, the project site is well served by existing services and

[4] California Division of Mines and Geology. 1982. Aggregate Resource Sectors.
[5] Contra Costa County. 2004. General Plan Figure 8-4: Mineral Resource Areas. Accessed August 24, 2020.

infrastructure and would not require the extension or construction of new utilities to provide adequate service. There are no other elements of the proposed project that would induce growth at levels beyond what has been anticipated by the General Plan. Therefore, impacts related to indirect population growth would be less than significant.

The project site does not contain any housing or other residential uses, and the site does not support a residential population. Therefore, the proposed project would not have any impact related to the displacement of existing people or housing.

4.2.4 - Parks and Recreational Facilities

The proposed project would not include any residential uses and, therefore, would not result in direct population growth. As discussed in Section 4.2.3, the proposed project's new job opportunities would not be expected to result in direct or indirect population growth. Because the proposed project would not cause direct or indirect population growth, there would be no need for new or expanded parks or recreational facilities. Similarly, project implementation would not result in the physical deterioration of existing parks or recreational facilities. Accordingly, no impacts would occur.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 5: OTHER CEQA CONSIDERATIONS

California Environmental Quality Act (CEQA) Guidelines Section 15126 requires that all aspects of a project must be considered when evaluating its impact on the environment, including planning, acquisition, development, and operation. As part of this analysis, the Draft Environmental Impact Report (Draft EIR) must also identify (1) significant environmental effects of the proposed project; (2) significant environmental effects which cannot be avoided if the proposed project is implemented; (3) significant irreversible environmental changes which would be involved in the proposed project should it be implemented; (4) growth-inducing impact of the proposed project; (5) mitigation measures proposed to minimize the significant effects; and (6) alternatives to the proposed project.

This chapter provides a discussion of other CEQA-mandated topics including significant unavoidable impacts, growth inducement, and significant irreversible environmental changes which would be involved in the proposed project should it be implemented. Chapter 3, Environmental Impact Analysis, describes the significant environmental effects of the proposed project and provides mitigation measures proposed to minimize significant effects. Chapter 6, Alternatives to the Proposed Project, discusses alternatives to the proposed project.

5.1 - Significant Unavoidable Impacts

CEQA Guidelines Section 15126.2(c) requires an EIR to describe significant environmental effects of the proposed project that cannot be avoided if the proposed project were implemented.

The proposed project was analyzed for potentially significant impacts related to each of the environmental issues discussed in Sections 3.1 through 3.15. The results of the analysis indicate that the proposed project would result in the following significant and unavoidable impacts:

- **Project-Level Vehicle Miles Traveled:** The proposed project's Vehicle Miles Traveled (VMT) would result in a significant impact given that the location-based service-estimated average one-way trip length for automobile trips generated by the proposed project is more than 20 miles, and the proposed project would be in excess of 15 percent below the nine-county Metropolitan Transportation Commission (MTC) average. The proposed project would implement Mitigation Measure (MM) TRANS-1, which would require the applicant to prepare a project-specific Transportation Demand Management (TDM) Program in consultation with Contra Costa County (County) to reduce project-generated VMT. However, even with incorporation of MM TRANS-1, which would partially reduce VMT impacts, the impact would remain significant and unavoidable.
- **Cumulative VMT:** Other cumulative projects, such as those listed in Chapter 3, Environmental Impact Analysis, Table 3-1, Cumulative Projects, may generate new VMT, which would be added to the regional roadway network. All projects would be required to mitigate their fair share of impacts. Nonetheless, the proposed project, in conjunction with other planned and approved projects, would have a cumulatively significant impact related to VMT. The proposed project would implement MM TRANS-1, which would require the applicant to prepare and

implement a project-specific TDM Program in consultation with the County to reduce project-generated VMT. However, even with incorporation of MM TRANS-1, which would partially reduce the proposed project's VMT impacts, the proposed project's incremental contribution to the cumulative impact would remain significant and unavoidable.

5.2 - 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 proposed 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)).

Direct growth-inducing impacts occur when the development of a project imposes new burdens on a community by directly inducing 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.

Direct Growth-Inducing Impacts

The proposed project would include the construction of three warehouse buildings that would be expected employ approximately 573 people. As described in Chapter 4, Effects Found not to be Significant, direct population growth would result if the proposed project were to include residential units. Because of the nature of the proposed project, the kinds of labor skills required for the proposed project are typically filled by workers who are already present in the local labor force. Therefore, impacts related to direct population growth at operation would be less than significant.

The project does not propose housing, nor would it remove any direct barriers to growth. Therefore, the proposed project would not directly increase population.

Indirect Growth-Inducing Impacts

The proposed project would create new employment opportunities associated with the three warehouse buildings and therefore may have the potential to induce population growth because new employees may move into the County or surrounding cities. However, as previously stated, the new jobs would likely be filled by workers who are already present in the local labor force. Nonetheless, should additional persons relocate to the County or surrounding cities to secure the new jobs, it would represent a small percentage of employment growth, which within the context of the larger East Bay region, would not be considered unplanned or growth-inducing. Impacts would be less than significant.

Removal of a Physical Barrier to Growth

The proposed project is located within an urbanized portion of the County and is surrounded by industrial and commercial businesses. The proposed project would connect to existing water and sanitary sewer lines within Brookside Drive and Fred Jackson Way; as such, the project site is already well served by existing services and infrastructure and would not require the extension or construction of new utilities to provide adequate service. The project site is also currently served by urban services, such as fire, police, school, and library services. There are no other elements of the proposed project that would induce growth at levels beyond what has been anticipated by the General Plan. As such, the proposed project would not result in indirect population growth through providing an extension of infrastructure or services, or through the removal of a barrier to growth. Impacts would be less than significant.

5.3 - Significant Irreversible Environmental Changes

As mandated by CEQA Guidelines Section 15126.2(d), the Draft EIR must address significant irreversible environmental changes which would be caused by the proposed project should it be implemented. Specifically, such an irreversible environmental change would occur if:

- The proposed project would involve a large commitment of nonrenewable resources;
- Primary and secondary impacts would generally commit future generations to similar uses;
- The proposed project involves uses in which irreversible damage could result from any potential environmental accidents associated with the proposed project; or
- The proposed consumption of resources is not justified (e.g., the proposed project results in wasteful use of energy).

The proposed project involves the construction and operation of three warehouse buildings totaling approximately 555,537 square feet, including office space. Approximately 129,719 square feet of landscaped areas (including bioretention areas and wetland mitigation sites), 438 auto parking spaces, and 266 trailer parking spaces would be provided. The proposed project also includes the construction of off-site improvements, including sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements.

Construction of the proposed project would include the consumption of resources that are not replenishable or which may renew so slowly to be considered nonrenewable. These resources would include the following: certain types of lumber and other forest products; aggregate materials used in concrete and asphalt such as sand, gravel, and stone; metals such as steel, copper, and lead; petrochemical construction materials such as plastics; and water. Fossil fuels such as gasoline and oil would also be consumed in the use of construction vehicles and equipment. Consumption of building materials and energy is common to most other development in the region, and commitments of resources are not unique or unusual to the proposed project. Development would not be expected to involve an unusual commitment of nonrenewable resources, nor be expected to consume any resources in a wasteful manner. Energy demands associated with construction of the proposed project

are discussed in greater detail in Section 3.5, Energy, which concluded that construction-related impacts related to electricity and fuel consumption would be less than significant.

At operation, the proposed project would include the consumption of energy as part of building operations and transportation activities (vehicle trips associated with the proposed project). Fossil fuels would represent the primary energy source during operation of the proposed project, and the existing, finite supplies of these nonrenewable resources would be incrementally reduced. As discussed in Section 3.5, Energy, the proposed project would be designed and constructed in accordance with the County's latest adopted energy efficiency standards, which are based on the State's Building Energy Efficiency Standards. Furthermore, the warehouse buildings would be built to Leadership in Energy and Environmental Design (LEED™) standards and would include solar photovoltaic panels on the roof, which are anticipated to satisfy 100 percent of the proposed project's building electricity demand. Operational vehicles on the project site would be entirely zero emission by 2027. Lastly, the proposed project would implement MM TRANS-1, which would require the applicant to prepare a project-specific TDM Program in consultation with the County to reduce project-generated VMT. Several of the strategies aim to reduce VMT and fuel consumption demand, including promoting and supporting carpools, rideshare, and end-trip facilities for bicycle riders, such as showers, secure bicycle lockers, and changing spaces. Thus, although the proposed project would result in an irretrievable commitment of nonrenewable resources at operation, the resources would not be consumed inefficiently, unnecessarily, or wastefully.

Implementation of the proposed project represents an essentially irreversible commitment of land uses that would change the existing uses on-site (building foundations, fallow agricultural land consisting primarily of non-native grasses, herbaceous plants, forbs, and trees) to industrial uses. The restoration of the site to pre-developed conditions after development would not be feasible given the level of capital investment and degree of disturbance needed to develop the properties in the first place. Therefore, future generations would be committed to similar uses and the irreversible long-term environmental changes discussed below.

The irreversible long-term environmental changes associated with the proposed project would include a change in the visual character of the site as a result of the conversion of the non-native grasses, herbaceous plants, forbs, and trees to industrial warehouse uses. Additional irreversible environmental changes are associated with the increase in local and regional vehicular traffic, and the resultant increase in air pollutants, greenhouse gas emissions, and noise generated by this traffic. The proposed project would also irreversibly increase the commitment of energy resources, potable water supply, wastewater treatment, solid waste disposal, and public services, such as providing police and fire services, to support the proposed project through its lifetime. However, features have been incorporated into the proposed project and mitigation measures are proposed in this Draft EIR that would minimize the significant effects of the environmental changes associated with the proposed project to the maximum degree feasible.

The proposed project does not include any uses in which irreversible damage could result from potential environmental accidents associated with the proposed project. As an industrial warehouse development, the proposed project would not introduce highly hazardous land uses or activities such that there would be a potential for irreversible damage from incidents such as a release of

hazardous materials, explosion, or other potentially catastrophic event. As discussed in Section 3.8, Hazards and Hazardous Materials, the proposed uses would not require the use of large quantities of hazardous materials. Small quantities of hazardous materials would be used on-site, including fertilizers, herbicides, pesticides, solvents, cleaning agents, and similar materials used for landscaping and maintenance activities. However, compliance with existing regulations regarding the storage, handling, usage, and disposal of the hazardous materials would reduce the potential for irreversible damage from environmental accidents to less than significant levels.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 6: ALTERNATIVES TO THE PROPOSED PROJECT

6.1 - 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 chapter is to provide decision-makers and the general public with a reasonable range of potentially feasible alternatives to the proposed project that could attain most of the basic project objectives, while avoiding or reducing any of the project's significant adverse environmental effects. Important considerations for these alternative analyses are noted below (as stated in CEQA Guidelines Section 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.

6.2 - Significant Unavoidable Impacts

The proposed project was analyzed for potentially significant impacts related to each of the environmental issues discussed in Sections 3.1 through 3.15. The results of the analysis indicate that the proposed project would result in the following significant and unavoidable impacts:

- **Project-Level Vehicle Miles Traveled:** The proposed project's Vehicle Miles Traveled (VMT) would result in a significant impact given that the location-based service-estimated average one-way trip length for automobile trips generated by the proposed project is more than 20 miles, and the proposed project would be in excess of 15 percent below the nine-county Metropolitan Transportation Commission (MTC) average. The proposed project would implement Mitigation Measure (MM) TRANS-1, which would require the applicant to prepare a project-specific Transportation Demand Management (TDM) Program in consultation with Contra Costa County (County) to reduce project-generated VMT. However, even with incorporation of MM TRANS-1, which would partially reduce VMT impacts, the impact would remain significant and unavoidable.
- **Cumulative VMT:** Other cumulative projects, such as those listed in Chapter 3, Environmental Impact Analysis, Table 3-1, Cumulative Projects, may generate new VMT, which would be added to the regional roadway network. All projects would be required to mitigate their fair share of impacts. Nonetheless, the proposed project, in conjunction with other planned and approved projects, would have a cumulatively significant impact related to VMT. The proposed project would implement MM TRANS-1, which would require the applicant to prepare and

implement a project-specific TDM Program in consultation with the County to reduce project-generated VMT. However, even with incorporation of MM TRANS-1, which would partially reduce the proposed project's VMT impacts, the proposed project's incremental contribution to the cumulative impact would remain significant and unavoidable.

6.3 - Alternatives to the Proposed Project

Pursuant to CEQA Guidelines Section 15126.6, this Draft EIR presents a reasonable range of potentially feasible alternatives to the proposed project for analysis and evaluation of their comparative merits. These alternatives are considered to cover the range of development alternatives that would meet most of the basic objectives of the proposed project while lessening one or more of its significant impacts. CEQA Guidelines Section 15126.6(a) states that an EIR need not evaluate every conceivable alternative to a project. Information has been provided for each alternative that would allow meaningful comparison with the proposed project. CEQA requires that an EIR analyze a "no project" alternative (CEQA Guidelines § 15126.6(e)). Where, as here, this alternative means a proposed project would not proceed, the discussion "[s]hould compare the environmental effects of the property remaining in its existing state against environmental effects which would occur if the project is approved" (CEQA Guidelines § 15126.6(e)(3)(B)). If disapproval would result in predictable actions by others, such as the proposal of some other project, that foreseeable consequence is an appropriate alternative. Where rejecting the proposed project would not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval. A "no project" alternative shall describe existing conditions at the time the Notice of Preparation (NOP) is prepared, as well as what could reasonably be expected in the foreseeable future if the project is not approved, based on current plans and consistent with available infrastructure and community services. In this section, the "no project" alternative considers both a no development alternative and a no project alternative that contemplates other foreseeable development that would be approved on-site in accordance with the existing General Plan land use designations.

The alternatives to the proposed project analyzed in this chapter are as follows:

- **No Project/No Development Alternative:** Under the No Project/No Development Alternative, no development would occur. The three proposed warehouse buildings would not be constructed on the project site. In this scenario, the project site would remain as fallow agricultural land, consisting primarily of non-native grasses, herbaceous plants, and forbs. The existing trees and foundations of several former residential structures, barns, and greenhouse buildings would also remain on the project site. The off-site improvements as described in Chapter 2, Project Description, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would not be developed.
- **Heavy Industrial/Light Industrial Alternative.** The General Plan designates the project site as Heavy Industry (HI) and Light Industry (LI) and anticipates its development. Pursuant to the General Plan Land Use Element, the Heavy Industry designation allows a maximum site coverage up to 30 percent, 45 employees per gross acre, and a floor area ratio (FAR) between

0.1 and 0.4; the Light Industry designation allows a maximum site coverage up to 50 percent, 60 employees per gross acre, and a FAR between 0.25 and 0.67. Land uses permitted by the HI designation include contractors' storage yards, warehouses, machine shops, commercial nurseries, heavy equipment operation, metalworking, and chemical or petroleum product processing and refining. Land uses permitted by the LI designation include research, engineering, product development and testing, sales development, light manufacturing, warehousing, distribution centers, and commercial nurseries. Support retail/service uses may also be located within the HI and LI designations (with a General Plan Amendment). Based on the surrounding industrial land uses and the current rate of development in the County, it is reasonably foreseeable that the site will be developed with heavy and light industrial uses consistent with the General Plan. This scenario could result in the development of up to 321,081 square feet of heavy industrial uses on 7.37 acres and up to 118,265 square feet of light industrial uses on 2.72 acres, for a total of 439,346 square feet.

- **Single Warehouse Alternative:** Under the Single Warehouse Alternative, only one warehouse building would be constructed on the project site. Under this scenario, all existing improvements (foundations associated with the former structures, asphalt, concrete, fence poles, and retaining walls) would be demolished, and one concrete tilt-up warehouse, totaling 183,456 square feet would be constructed. The warehouse building would include 165,456 square feet of warehouse space and 18,000 square feet of office space. This alternative would also include approximately 196,245 square feet of landscaped areas (including bioretention areas), 343 auto parking spaces, 8 trailer parking spaces, 915 delivery van parking spaces, and on-site bicycle and pedestrian facilities. The future occupant would be an e-commerce last-mile distribution company, consistent with the North Richmond P-1 Zoning District and LI and HI General Plan designations. The future occupant would implement construction and operational best practices to reduce emissions and improve air quality as described in Chapter 2, Project Description. The warehouse building could employ up to 850 people and would operate 24 hours a day, 7 days a week. The off-site improvements as described in Chapter 2, Project Description, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would be developed under this alternative.

6.4 - Project Objectives

As stated in Chapter 2, Project Description, the objectives of the proposed project are to:

- Develop industrial uses in North Richmond in accordance with the General Plan.
- Implement policies of importance to the County, as reflected in the General Plan, including the County's December 11, 2018, adopted General Plan Amendment (GPA) GP18-0004 to the Conservation Element Section 8.14, Air Resources.
- Reduce greenhouse gas emissions from transportation sources through provision of bicycle and pedestrian facilities.

- Develop an industrial business park that is economically competitive with other similar centers in the land-constrained East Bay market, which will assist the County in competing economically on a domestic and international scale through the efficient and cost-effective movement of goods.
- Develop vacant or underutilized property in the County with an attractive, state-of-the-art industrial business park that meets current industry standards for operational design criteria and that complements the surrounding existing and planned uses.
- Develop warehouse/distribution buildings that meet industry standards for modern, operational design criteria and provide opportunities for warehouse/distribution building users to locate in North Richmond.
- Maximize the utility of sites in close proximity to already established industrial areas, designated truck route and freeways thereby growing the economy and providing a more equal jobs-housing balance while avoiding or shortening truck-trip lengths on other roadways.
- Develop an underutilized or blighted property that has access to available infrastructure, including roads and utilities to be used as part of the supply chain and goods movement network.
- Redevelop an underutilized or blighted property within the County with productive uses that would generate tax revenue and maximize buildout potential for employment-generating uses.
- Improve facilities to connect pedestrians and bicyclists with transit stops, parks, other community gathering places, and adjacent neighborhoods.
- Result in eventual annexation of the project site to the West County Wastewater District.

6.5 - Alternative 1—No Project/No Development Alternative

Under the No Project/No Development Alternative, no development would occur. The three proposed warehouse buildings would not be constructed on the project site. In this scenario, the project site would remain as fallow agricultural land, consisting primarily of non-native grasses, herbaceous plants, and forbs. The existing trees and foundations of several former residential structures, barns, and greenhouse buildings would also remain on the project site. The off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would not be developed.

6.5.1 - Impact Analysis

Aesthetics

Under the No Project/No Development Alternative, the project site would not be developed with three warehouse buildings, associated parking, landscaping, and bioretention areas. The off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would not be developed. There would be no change in visual character,

views, nighttime lighting, or daytime glare, as there would be no change to existing on-site and off-site conditions. The site would remain in its current underutilized condition. The vacant lot with fallow agricultural land, trees, and the foundations of several former structures is not consistent with the existing character of the project vicinity, which includes industrial and commercial uses. Thus, impacts related to aesthetics would be less than significant under this alternative.

As noted in Section 3.1, Aesthetics, the proposed project's impacts related to scenic vistas, scenic resources, and the existing visual character and quality of public views of the site and its surroundings would be less than significant without mitigation and impacts with respect to lighting and glare would be less than significant with mitigation. Cumulative impacts would be less than significant.

The No Project/No Development Alternative would not result in any changes to the aesthetic quality or visual character of the project site; however, the site would remain vacant, inconsistent with the generally industrialized character of the area.

Although development of the project site is not expected to substantially degrade the existing visual quality or character of the project site or surrounding area, and although these impacts were found to be less than significant, the No Project/No Development Alternative would result in reduced impacts on aesthetics, light, and glare as compared to the proposed project since the site would remain as fallow agricultural land, with trees and the foundations of several former structures, and would not introduce new warehouses that would alter existing views or introduce new sources of glare and lighting.

Air Quality

Under the No Project/No Development Alternative, there would be no ground disturbance within the project site and within the areas proposed for the off-site improvements; therefore, no impacts to air quality would occur under this alternative during construction. At operation, there would be no impacts related to air quality as the three warehouse buildings would not be built and no development would proceed. Thus, there would be no impacts related to air quality under this alternative.

As noted in Section 3.2, Air Quality, the proposed project's impacts related to air quality would be less than significant without mitigation with respect to air quality management plan consistency and sensitive receptors' exposure to toxic air contaminant concentrations. The proposed project's impacts related to criteria pollutant emissions would be less than significant with mitigation for construction, and less than significant without mitigation for operations. Impacts would be less than significant without mitigation for objectionable odors exposure during construction and less than significant with mitigation for objectionable odors exposure during operation. Cumulative impacts would be less than significant with mitigation incorporated.

Under the No Project/No Development Alternative, no development would occur on the project site or within the areas proposed for off-site improvements, and no new land uses would be introduced. Therefore, no criteria pollutants, toxic air contaminants, or objectionable odors would be generated under this alternative, and no mitigation would be required. As such, the No Project/No

Development Alternative would result in reduced impacts related to air quality as compared to the proposed project.

Biological Resources

Under the No Project/No Development Alternative, the project site would not be developed with three warehouse buildings, associated parking, landscaping, and bioretention areas. The off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would not be developed. The project site would remain as fallow agricultural land, consisting primarily of non-native grasses, herbaceous plants, and forbs. The existing trees and foundations of several former structures would also remain on the project site. There would be no change related to wildlife or habitat on-site or within the areas proposed for off-site improvements. The No Project/No Development Alternative would not impact special-status wildlife species, sensitive natural communities, wetlands and jurisdictional features, or fish and wildlife movement corridors. Thus, no mitigation would be required and there would be no impacts to biological resources under this alternative.

As noted in Section 3.3, Biological Resources, the proposed project's impacts related to special-status wildlife species and wildlife movement corridors would be reduced to less than significant with mitigation incorporated. The proposed project would result in less than significant impacts without mitigation with respect to sensitive natural communities and cumulative impacts. Lastly, the proposed project would result in no impacts with respect to wetlands and jurisdictional features and would not conflict with local policies or ordinances or an adopted Habitat Conservation Plan.

Under the No Project/No Development Alternative, no development would occur on the project site or within the areas proposed for off-site improvements, and no new land uses would be introduced. Therefore, no impacts related to special-status wildlife species, sensitive natural communities, wetlands and jurisdictional features, and wildlife movement corridors would occur under this alternative, and no mitigation would be required. As such, the No Project/No Development Alternative would result in reduced impacts related to biological resources as compared to the proposed project.

Cultural Resources and Tribal Cultural Resources

Under the No Project/No Development Alternative, the project site would not be developed with three warehouse buildings, associated parking, landscaping, and bioretention areas. The off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would not be developed. The project site would remain as fallow agricultural land, consisting primarily of non-native grasses, herbaceous plants, and forbs. The existing trees and foundations of several former structures would also remain on the project site. There would be no ground-disturbing activities that could result in the inadvertent discovery of cultural or tribal cultural resources. Thus, no mitigation would be required and there would be no impacts to cultural or tribal cultural resources under this alternative.

As noted in Section 3.4, Cultural Resources and Tribal Cultural Resources, the proposed project's impacts related to historic resources, archaeological resources, disturbance to human remains, and tribal cultural resources, and cumulative impacts would be reduced to less than significant with mitigation incorporated.

Under the No Project/No Development Alternative, no development would occur on the project site or within the areas proposed for off-site improvements, and no new land uses would be introduced. Therefore, no impacts related to historic resources, archaeological resources, disturbance to human remains, and tribal cultural resources would occur under this alternative, and no mitigation would be required. As such, Therefore, the No Project/No Development Alternative would result in reduced impacts related to cultural and tribal cultural resources as compared to the proposed project.

Energy

Under the No Project/No Development Alternative, there would be no ground disturbance or construction activity either within the project site or within the areas proposed for off-site improvements; therefore, no impacts related to energy consumption would occur under this alternative during construction. At operation, there would be no impacts related to energy consumption as the three warehouse buildings would not be built. Thus, no mitigation would be required and there would be no impacts related to energy consumption under this alternative.

As noted in Section 3.5, Energy, the proposed project would result in energy consumption during construction and at project operation. However, the proposed project's impacts related to energy would be less than significant without mitigation with respect to energy use during construction and at operation, conflicting with a plan for renewable energy or energy efficiency, and cumulative impacts.

Under the No Project/No Development Alternative, no development would occur on the project site or within the areas proposed for off-site improvements, and no new land uses would be introduced. Therefore, no energy would be consumed during construction and at operation under this alternative. As such, the No Project/No Development Alternative would result in reduced impacts related to energy as compared to the proposed project.

Geology and Soils

Under the No Project/No Development Alternative, the project site would not be developed with three warehouse buildings, associated parking, landscaping, and bioretention areas. The off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would not be developed. Thus, there would be no impact related to potential exposure of persons and property to seismic- and soil-related hazards under this alternative, nor would there be potential paleontological impacts. Thus, no mitigation would be required and there would be no impacts related to geology and soils under this alternative.

As noted in Section 3.6, Geology and Soils, the proposed project's impacts related to exposure of persons, structures, or improvements to seismic- and soil-related hazards would be reduced to less

than significant levels with mitigation incorporated. The proposed project's impacts related to soil erosion, the loss of topsoil, wastewater disposal systems, paleontological resources, and cumulative impacts would be less than significant without mitigation.

Under the No Project/No Development Alternative, no development would occur on the project site or within the areas proposed for off-site improvements, and no new land uses would be introduced. Therefore, no impacts related to soil erosion, the loss of topsoil, wastewater disposal systems, paleontological resources, or the potential exposure of persons and property to seismic- and soil-related hazards would occur under this alternative, and no mitigation would be required. As such, the No Project/No Development Alternative would result in reduced impacts related to geology and soils as compared to the proposed project.

Greenhouse Gas Emissions

Under the No Project/No Development Alternative, there would be no ground disturbance either within the project site or within the areas proposed for the off-site improvements; therefore, no impacts related to greenhouse gas (GHG) emissions would occur under this alternative during construction. At operation, there would be no impacts related to GHG emissions as the three warehouse buildings would not be built. Thus, no mitigation would be required and there would be no impacts related to GHG emissions under this alternative.

As noted in Section 3.7, Greenhouse Gas Emissions, the proposed project's impacts with respect to GHG emissions plan consistency and cumulative impacts would be less than significant without mitigation. The proposed project's impacts related to the generation of GHG emissions during construction and at project operation would be reduced to less than significant levels with mitigation incorporated, through a combination of on-site and off-site measures and carbon offset credits.

Under the No Project/No Development Alternative, no development would occur on the project site or within the areas proposed for off-site improvements, and no new land uses would be introduced. Therefore, no GHG emissions would be emitted during construction or at operation under this alternative, and no mitigation would be required. As such, the No Project/No Development Alternative would result in reduced impacts related to GHG emissions as compared to the proposed project.

Hazards and Hazardous Material

Under the No Project/No Development Alternative, the project site would not be developed with three warehouse buildings, associated parking, landscaping, and bioretention areas. The off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would not be developed. The project site would remain as fallow agricultural land, consisting primarily of non-native grasses, herbaceous plants, and forbs. The existing trees and foundations of several former structures would also remain on the project site. There would be no ground-disturbing activities that could result in the potential to encounter and release hazardous materials. Under the No Project/No Development Alternative, the existing potential hazardous materials on-site (e.g., contaminated soils and gasoline underground storage tanks [USTs]) would not

be removed from the project site. At operation, hazardous materials for general landscaping and maintenance activities would not be used. Thus, no mitigation would be required and there would be less than significant impacts related to potential exposure of persons to hazards or hazardous materials under this alternative.

As noted in Section 3.8, Hazards and Hazardous Materials, the proposed project's impacts related to the release of hazardous materials during excavation and construction from contaminated soils, soil vapor, contaminated groundwater, the potential to encounter USTs, and being located on a listed hazardous materials site, would be reduced to less than significant levels with mitigation incorporated. The proposed project's impacts related to hazardous materials upset risk, hazardous emissions proximate to a school, proximity to public airport safety hazard, emergency response and evacuation, wildland fires, and cumulative impacts would be less than significant without mitigation.

Under the No Project/No Development Alternative, no development would occur on the project site or within the areas proposed for off-site improvements, and no new land uses would be introduced. Therefore, no impacts related to the release of hazardous materials, emergency response, and evacuation would occur under this alternative, and no mitigation would be required. The non-native grasses, herbaceous plants, forbs, and trees on-site could provide fuel load in the event of a wildfire. However, the project site is surrounded by other features that provide fuel breaks in the event of a fire, such as Brookside Drive and Fred Jackson Way. As such, the No Project/No Development Alternative would result in reduced impacts related to hazards and hazardous materials as compared to the proposed project.

Hydrology and Water Quality

Under the No Project/No Development Alternative, there would be no ground disturbance both within the project site and within the areas proposed for the off-site improvements; therefore, no impacts related to hydrology and water quality would occur under this alternative during construction. At operation, the project site would not be developed with three warehouse buildings and associated parking, which would increase impervious surfaces as compared to existing conditions. No new associated on-site or off-site stormwater improvements would be constructed. There would be no change related to hydrology, stormwater runoff and drainage, water quality, groundwater recharge and depletion, or flooding. Thus, no mitigation would be required and there would be no impacts related to hydrology and water quality under this alternative.

As noted in Section 3.9, Hydrology and Water Quality, the proposed project's impacts related to erosion/siltation, flooding, additional sources of polluted runoff, impedance of flood flows from alterations to the existing drainage pattern of the site, and risk of pollutant release due to project site inundation would be reduced to less than significant levels with mitigation incorporated. The proposed project's impacts related to surface and groundwater quality during construction and operation, groundwater supply/recharge, water quality control or sustainable groundwater management plans consistency, and cumulative impacts would be less than significant without mitigation.

Under the No Project/No Development Alternative, no development would occur on the project site or within the areas proposed for off-site improvements, and no new land uses would be introduced. Therefore, no impacts related to erosion/siltation, flooding, additional sources of polluted runoff, and impedance of flood flows from alterations to the existing drainage pattern of the site would occur under this alternative, and no mitigation would be required. However, the proposed storm drain system would not be built, and the existing stormwater runoff rates, which are greater than operational stormwater runoff for the proposed project, would remain. Overall, the No Project/No Development Alternative would result in reduced impacts related to hydrology and water quality as compared to the proposed project.

Land Use and Planning

Under the No Project/No Development Alternative, the project site would not be developed with three warehouse buildings, associated parking, landscaping, and bioretention areas. The off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would not be developed. Thus, there would be no impact related to physically dividing an established community, nor any impact related to a conflict with applicable plans, policies, or regulations under this alternative. Thus, no mitigation would be required and there would be no impacts related to land use and planning under this alternative.

As noted in Section 3.10, Land Use and Planning, the proposed project's impacts related to physically dividing an established community, conflicting with applicable plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect, and cumulative impacts would be less than significant without mitigation.

Under the No Project/No Development Alternative, no development would occur on the project site or within the areas proposed for off-site improvements, and no new land uses would be introduced. Therefore, no impacts related to physically dividing an established community or conflicting with applicable plans, policies, or regulations would occur under this alternative. As such, the No Project/No Development Alternative would result in reduced impacts related to land use and planning as compared to the proposed project.

Noise

Under the No Project/No Development Alternative, there would be no ground disturbance or construction-related activities both within the project site and within the areas proposed for the off-site improvements; therefore, no impacts related to noise would occur under this alternative during construction. At operation, there would be no impacts related to noise as the three warehouse buildings and associated parking would not be built. Thus, no mitigation would be required and there would be no impacts related to noise under this alternative.

As noted in Section 3.11, Noise, the proposed project would result in noise from construction activities and operational noise from mechanical ventilation equipment, parking lot activities, truck loading activities, and increased traffic on local roadway segments in the project vicinity. Impacts related to substantial noise increase in excess of standards during construction would be less than

significant with mitigation. The proposed project's impacts would be less than significant without mitigation with respect to noise levels that would conflict with any land use plan, policy, or regulation, substantial noise increases in excess of standards (during operation), groundborne vibration, groundborne noise levels, excessive noise levels from airport activity, and cumulative impacts.

Under the No Project/No Development Alternative, no development would occur on the project site or within the areas proposed for off-site improvements, and no new land uses would be introduced. Therefore, no noise or groundborne vibration would be generated during construction and at operation under this alternative. As such, the No Project/No Development Alternative would result in reduced impacts related to noise as compared to the proposed project.

Public Services

Under the No Project/No Development Alternative, the project site would not be developed with three warehouse buildings, associated parking, landscaping, and bioretention areas. The off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would not be developed. Thus, there would be no impacts related to the need for new or altered fire protection facilities, police protection facilities, school facilities, or library facilities under this alternative. Thus, no mitigation would be required and there would be no impacts related to public services under this alternative.

As noted in Section 3.12, Public Services, the proposed project may result in an increased demand for fire protection facilities and police protection facilities during construction. At operation, the three warehouses could result in up to 573 new employees at the project site, and in turn, could result in an increase in calls for fire protection, emergency services, or police protection. However, the proposed project's impacts related to fire protection facilities, police protection facilities, school facilities, library facilities, and cumulative impacts would be less than significant without mitigation.

Under the No Project/No Development Alternative, no development would occur on the project site or within the areas proposed for off-site improvements, and no new land uses would be introduced. Therefore, no impacts related to fire protection facilities, police protection facilities, school facilities, or library facilities would occur under this alternative. As such, the No Project/No Development Alternative would result in reduced impacts related to public services as compared to the proposed project.

Transportation

Under the No Project/No Development Alternative, the project site would not be developed with three warehouse buildings and associated parking, and thus, there would be no increase in VMT as compared to existing conditions. The off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would not be developed. As such, the positive benefits associated with the sidewalks, curbs, and gutters, where none currently exist, would not be realized. Additionally, there would be no impacts related to

roadway safety hazards, emergency access, public transit, pedestrian facilities, and bicycle facilities under this alternative. Thus, no mitigation would be required and there would be no impacts related to transportation under this alternative.

As noted in Section 3.13, Transportation, the proposed project would result in significant and unavoidable impacts related to the project's effect on VMT. The proposed project would implement mitigation, which would require the applicant to prepare a project-specific TDM Program in consultation with the County to reduce project-generated VMT. However, with incorporation of mitigation, impacts would be reduced to the extent feasible, but would remain significant and unavoidable at the project level and under cumulative conditions. The proposed project's impacts related to roadway safety hazards, pedestrian facilities, and bicycle facilities would be reduced to less than significant levels with mitigation incorporated. The proposed project's impacts related to emergency access and public transit would be less than significant without mitigation.

Under the No Project/No Development Alternative, no development would occur on the project site or within the areas proposed for off-site improvements, and no new land uses would be introduced. Therefore, no additional VMT would be generated, nor would there be any new demands for public transit, pedestrian facilities, and bicycle facilities under this alternative, and no mitigation would be required. As such, the No Project/No Development Alternative would result in reduced impacts related to transportation as compared to the proposed project.

Utilities and Service Systems

Under the No Project/No Development Alternative, the project site would not be developed with three warehouse buildings, associated parking, landscaping, and bioretention areas. The off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would not be developed. Thus, there would be no impacts related to water supply, wastewater treatment, stormwater facilities, natural gas, electric power, telecommunications facilities, landfill capacity, or consistency with solid waste regulations under this alternative. Thus, no mitigation would be required and there would be no impacts related to utilities and service systems under this alternative.

As noted in Section 3.14, Utilities and Service Systems, the three warehouses could result in up to 573 new employees at the project site, and in turn, would result in an increase in the demand for water, wastewater, and solid waste collection services. Development of the site would also require the construction of new stormwater facilities. The proposed project's impacts related to stormwater drainage would be reduced to less than significant levels with mitigation incorporated. The proposed project's impacts related to water supply, wastewater treatment, natural gas, electric power, telecommunications facilities, landfill capacity, consistency with solid waste regulations, and cumulative impacts would be less than significant without mitigation.

Under the No Project/No Development Alternative, no development would occur on the project site or within the areas proposed for off-site improvements, and no new land uses would be introduced. Therefore, no impacts related to stormwater drainage, water supply, wastewater treatment, natural

gas, electric power, telecommunications facilities, or landfill capacity would occur under this alternative, and no mitigation would be required. As such, the No Project/No Development Alternative would result in reduced impacts related to utilities and service systems as compared to the proposed project.

Wildfire

Under the No Project/No Development Alternative, the project site would not be developed with three warehouse buildings, associated parking, landscaping, and bioretention areas. The off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would not be developed. The project site would remain as fallow agricultural land, consisting primarily of non-native grasses, herbaceous plants, and forbs. The existing trees and foundations of several former structures would also remain on the project site. There would be no construction-related activities that could result in the potential to impede evacuation or emergency vehicle access. At operation, the non-native grasses, herbaceous plants, forbs, and trees on-site could provide fuel load in the event of a wildfire. However, the project site is surrounded by other features that provide fuel breaks in the event of a fire, such as Brookside Drive and Fred Jackson Way. At operation, there would be no impacts related to impairment of an emergency response plan or emergency evacuation plan, exposing project occupants to pollutant concentrations from wildfire, installation or maintenance of infrastructure that exacerbates fire risk, or flooding and landslide hazards due to post-fire slope instability or drainage changes. Thus, no mitigation would be required and there would be less than significant impacts related to wildfire under this alternative.

As noted in Section 3.15, Wildfire, the proposed project's impacts related to impairment of an emergency response plan or emergency evacuation plan, exposing project occupants to pollutant concentrations from wildfire, installation or maintenance of infrastructure that exacerbates fire risk, flooding and landslide hazards due to post-fire slope instability or drainage changes, and cumulative impacts would be less than significant without mitigation.

Under the No Project/No Development Alternative, no development would occur on the project site or within the areas proposed for off-site improvements, and no new land uses would be introduced. Therefore, impacts related to wildfire under this alternative would be less than significant without mitigation. As such, the No Project/No Development Alternative would result in similar impacts related to wildfire as compared to the proposed project.

6.5.2 - Conclusion

The No Project/No Development Alternative would avoid the proposed project's significant and unavoidable impact related to the project's effect on VMT. The No Project/No Development Alternative would also avoid all the proposed project's less than significant impacts with mitigation described in Sections 3.1 through 3.15, as well as the need to implement any mitigation measures. Lastly, the No Project/No Development Alternative would avoid all of the proposed project's less than significant impacts without mitigation described in Sections 3.1 through 3.15.

The No Project/No Development Alternative would not meet all of the project objectives because the project site would not be developed with three warehouse buildings. Instead, the project site would remain as fallow agricultural land, consisting primarily of non-native grasses, herbaceous plants, and forbs. The existing trees and foundations of several former structures would also remain on the project site. As such, the No Project/No Development Alternative would not meet the objectives of (1) developing industrial uses in North Richmond in accordance with the General Plan; (2) implementing policies of importance to the County (as reflected in the General Plan); (3) reducing greenhouse gas emissions from transportation sources through provision of bicycle and pedestrian facilities; (4) developing an industrial business park that is economically competitive with other similar centers in the land-constrained East Bay market; (5) developing vacant or underutilized property in the County with an attractive, state-of-the-art industrial business park; (6) developing warehouse/distribution buildings that meet industry standards for modern, operational design criteria and provide opportunities for warehouse/distribution building users to locate in North Richmond; (7) maximizing the utility of site in close proximity to an already established industrial area; (8) developing an underutilized or blighted property that has access to available infrastructure, including roads and utilities to be used as part of the supply chain and goods movement network; (9) redeveloping an underutilized or blighted property within the County with productize uses that would generate tax revenue and maximize buildout potential for employment-generating uses; (10) improving facilities to connect pedestrians and bicyclists with transit stops, parks, and other community gathering places; and (11) result in eventual annexation of the project site to the West County Wastewater District.

6.6 - Alternative 2—Heavy Industrial/Light Industrial Alternative

The project site is located within an urbanized portion of the County and is surrounded by industrial land uses. Infrastructure supporting industrial uses on the project site is located within adjacent roadways or within the project site itself. The General Plan designates the project site as Heavy Industry (HI) and Light Industry (LI) and anticipates its development. Pursuant to the General Plan Land Use Element, the Heavy Industry designation allows a maximum site coverage up to 30 percent, 45 employees per gross acre, and an FAR between 0.1 and 0.4; the Light Industry designation allows a maximum site coverage up to 50 percent, 60 employees per gross acre, and a FAR between 0.25 and 0.67. Land uses permitted by the HI designation include contractors' storage yards, warehouses, machine shops, commercial nurseries, heavy equipment operation, metalworking, and chemical or petroleum product processing and refining. Land uses permitted by the LI designation include research, engineering, product development and testing, sales development, light manufacturing, warehousing, distribution centers, and commercial nurseries. Support retail/service uses may also be located within the HI and LI designations (with a General Plan Amendment). Based on the surrounding industrial land uses and the current rate of development in the County, it is reasonably foreseeable that the site will be developed with heavy and light industrial uses consistent with the General Plan. This scenario could result in the development of up to 321,081 square feet of heavy industrial uses on 7.37 acres and up to 118,265 square feet of light industrial uses on 2.72 acres, for a total of 439,346 square feet. Under this scenario up to 495 persons could be employed on the project site, although the exact number would depend on the type of heavy and light industrial use developed at the site and could potentially be lower for certain heavy industrial uses. Consistent

with similar industrial development in the County, on-site parking, landscaped areas, bioretention areas, and on and off-site infrastructure improvements would be developed. Similar to the proposed project, this alternative assumes development of the off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would be developed under this alternative.

6.6.1 - Impact Analysis

Aesthetics

As noted in Section 3.1, Aesthetics, the proposed project's impacts related to scenic vistas, scenic resources, and the existing visual character and quality of public views of the site and its surroundings would be less than significant without mitigation and impacts with respect to lighting and glare would be less than significant with mitigation. Cumulative impacts would be less than significant.

The Heavy Industrial/Light Industrial Alternative assumes development would occur as permitted by existing land use designations and zoning established by the County. Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative would be required to comply with the County's regulations and design standards regarding new industrial uses, parking, landscaping, bioretention areas, and infrastructure improvements. The off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would similarly be developed. Similar to the proposed project, this alternative would result in a change in the visual character, views, nighttime lighting, and daytime glare both on-site and off-site. The visual characteristics of future development that could occur under the existing zoning would likely result in building heights, setbacks, and lighting standards similar to the proposed project. This alternative assumes development up to the maximum site coverage allowed under the HI and LI designations, resulting in a decrease of industrial uses by 116,191 square feet compared to the proposed project. Although the development footprint would be smaller compared to the proposed project, this alternative would result in similar impacts related to scenic vistas, scenic resources, the existing visual character and quality of public views of the site and its surroundings, lighting, and glare. Therefore, the Heavy Industrial/Light Industrial Alternative would result in similar impacts on aesthetics, light, and glare as compared to the proposed project; impacts would be less than significant without mitigation with respect to scenic vistas, scenic resources, the existing visual character and quality of public views of the site, and cumulative impacts. Impacts under the Heavy Industrial/Light Industrial Alternative would be less than significant with mitigation with respect to lighting and glare.

Air Quality

As noted in Section 3.2, Air Quality, the proposed project's impacts related to air quality would be less than significant without mitigation with respect to air quality management plan consistency and sensitive receptors' exposure to toxic air contaminant concentrations. The proposed project's impacts related to criteria pollutant emissions would be less than significant with mitigation for

construction, and less than significant without mitigation for operations. Impacts would be less than significant without mitigation for objectionable odors exposure during construction and less than significant with mitigation for objectionable odors exposure during operation. Cumulative impacts would be less than significant with mitigation incorporated.

Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative would include ground disturbance both within the project site and within the areas proposed for the off-site improvements and would require the implementation of the Bay Area Air Quality Management District (BAAQMD) Best Management Practices (BMPs) to minimize fugitive dust impacts during construction. The Heavy Industrial/Light Industrial Alternative would decrease industrial uses by 116,191 square feet, which would result in fewer emissions of criteria pollutants during construction than was analyzed for the proposed project. This alternative would also be required to implement MM AIR-2a, which would require the use of Tier 4 engines during construction to reduce oxides of nitrogen (NO_X) emissions to less than significant levels. Therefore, impacts to air quality would occur under this alternative during construction, and mitigation would potentially be required to reduce criteria pollutant and ozone precursor emissions to less than significant levels, depending on the duration and intensity of construction. Like the proposed project, this impact would be less than significant with mitigation incorporated.

As previously stated, this alternative would decrease industrial uses by 116,191 square feet, which would require less duration or intensity for construction activities than was analyzed for the proposed project. However, as discussed in Section 3.2, the implementation of MM AIR-2a would ensure that cancer risk, chronic hazards, and $PM_{2.5}$ concentrations resulting from construction would be well below BAAQMD significance thresholds. Therefore, construction health risks to sensitive receptors, like the proposed project, would be less than significant with mitigation incorporated.

For operations, depending on the profile of the industrial users, it is possible that mitigation could be required to reduce operational criteria air pollutant impacts to less than significant. For the proposed project, although no mitigation was required to reduce operational criteria air pollutant impacts to less than significant, the proposed project has nevertheless committed to certain zero emission vehicle requirements to further reduce less than significant impacts. It is unknown whether such commitments would be feasible for this alternative. Operational health risks to sensitive receptors, like the proposed project, would be less than significant.

For objectionable odors, compared to the proposed project, it is more likely that this alternative would need to implement Mitigation Measure MM AIR-4a (Odor Management Plan), which applies to future tenants proposing operations that have potential to emit nuisance odors; with implementation of that mitigation measure, the objectionable odors impact would be less than significant. In summary, depending on the exact nature of the heavy and light industrial users for this alternative, some small decreases in less than significant air quality impacts, particularly around construction criteria air pollutants, and operational objectionable odors, may be possible, but such impacts would remain less than significant after imposition of mitigation measures.

Biological Resources

As noted in Section 3.3, Biological Resources, the proposed project's impacts related to special-status wildlife species and wildlife movement corridors would be reduced to less than significant with mitigation incorporated. The proposed project would result in less than significant impacts without mitigation with respect to sensitive natural communities and cumulative impacts. Lastly, the proposed project would result in no impacts with respect to wetlands and jurisdictional features and would not conflict with local policies or ordinances or an adopted Habitat Conservation Plan.

Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative would include ground disturbance both within the project site and within the areas proposed for the off-site improvements and would require the implementation of mitigation measures to reduce impacts to biological resources. Therefore, similar impacts related to special-status wildlife species, sensitive natural communities, wetlands and jurisdictional features, and wildlife movement corridors would occur under this alternative during construction and impacts would be less than significant with mitigation. Therefore, the Heavy Industrial/Light Industrial Alternative would result in similar impacts related to biological resources as compared to the proposed project and impacts would be less than significant with mitigation.

Cultural Resources and Tribal Cultural Resources

As noted in Section 3.4, Cultural Resources and Tribal Cultural Resources, the proposed project's impacts related to historic resources, archaeological resources, disturbance to human remains, and tribal cultural resources, and cumulative impacts would be reduced to less than significant with mitigation incorporated.

Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative would include ground disturbance both within the project site and within the areas proposed for the off-site improvements and would require the implementation of mitigation measures to reduce impacts to cultural and tribal cultural resources. As such, impacts to previously unidentified archaeological resources and human remains would be similar as those identified for the proposed project. This alternative would be required to comply with similar mitigation measures during any type of grading activities within the site and associated with off-site improvements to reduce impacts to cultural and tribal cultural resources. Therefore, similar impacts related to historic resources, archaeological resources, disturbance to human remains, and tribal cultural resources would occur under this alternative during construction and impacts would be less than significant with mitigation. Therefore, the Heavy Industrial/Light Industrial Alternative would result in similar impacts related to cultural and tribal cultural resources as compared to the proposed project and impacts would be less than significant with mitigation.

Energy

As noted in Section 3.5, Energy, the proposed project would result in energy consumption during construction and at project operation. However, the proposed project's impacts related to energy would be less than significant without mitigation with respect to energy use during construction and at operation, conflicting with a plan for renewable energy or energy efficiency, and cumulative impacts.

Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative, would include ground disturbance both within the project site and within the areas proposed for the off-site improvements. Therefore, similar impacts related to energy consumption would occur under this alternative during construction and impacts would be less than significant without mitigation. At operation, there would be similar impacts related to energy consumption and impacts would be less than significant without mitigation. However, as this alternative would decrease industrial uses by 116,191 square feet and could result in 120 fewer employees on the project site, there would be an incremental decrease in energy consumption as compared to the proposed project during project operation. Therefore, the Heavy Industrial/Light Industrial Alternative would result in reduced impacts related to energy as compared to the proposed project, and impacts would be less than significant without mitigation.

Geology and Soils

As noted in Section 3.6, Geology and Soils, the proposed project's impacts related to exposure of persons, structures, or improvements to seismic- and soil-related hazards would be reduced to less than significant levels with mitigation incorporated. The proposed project's impacts related to soil erosion, the loss of topsoil, wastewater disposal systems, paleontological resources, and cumulative impacts would be less than significant without mitigation.

Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative would include ground disturbance both within the project site and within the areas proposed for the off-site improvements, which could result in impacts related to soil erosion, the loss of topsoil, wastewater disposal system, or paleontological resources. Similar to the proposed project, construction activities would be required to comply with the conditions and requirements of the Construction General Permit from the California State Water Resources Control Board (State Water Board) consistent with the Contra Costa County's General Permit (No. CAS612008), which are designed to minimize potential erosion issues. Therefore, similar impacts related to soil erosion and the loss of topsoil would occur under this alternative during construction and impacts would be less than significant without mitigation. As no known paleontological resources are located within the project site boundaries, impacts related to paleontological resources would be similar for the Heavy Industrial/Light Industrial Alternative, and impacts would be less than significant without mitigation. Similar to the proposed project, this alternative would not require the use of a septic tank or alternative wastewater disposal system, and there would be no impact. At operation, there would be similar impacts related to exposure of persons, structures, or improvements to seismic- and soil-related hazards, which would require implementation of similar mitigation, and impacts would be less than significant with mitigation. However, as this alternative would decrease industrial uses by 116,191 square feet and result in 120 fewer employees on the project site, there would be an incremental decrease in the exposure of persons and structures to seismic- and soil-related hazards as compared to the proposed project. Therefore, the Heavy Industrial/Light Industrial Alternative would result in reduced impacts related to geology and soils as compared to the proposed project, and impacts would be less than significant with mitigation.

Greenhouse Gas Emissions

As noted in Section 3.7, Greenhouse Gas Emissions, the proposed project's impacts with respect to GHG emissions plan consistency and cumulative impacts would be less than significant without mitigation. The proposed project's impacts related to the generation of GHG emissions during construction and at project operation would be reduced to less than significant levels with mitigation incorporated, through a combination of on-site and off-site measures and carbon offset credits.

Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative would include ground disturbance both within the project site and within the areas proposed for the off-site improvements and would require the implementation of the BAAQMD BMPs to minimize air quality impacts during construction, which would in turn minimize GHG emissions during construction. Therefore, similar impacts related to GHG emissions would occur under this alternative during construction and impacts would be less than significant without mitigation. At operation, there would be similar impacts related to GHG emissions, which would require the implementation of similar mitigation measures such as on-site measures and the purchase of carbon credits, and impacts would be less than significant with mitigation. As discussed above in the Air Quality analysis, it is unknown whether the new industrial users could make comparable zero emission vehicle commitments to the proposed project; therefore, depending on the nature of the industrial use, it could result in a greater amount of GHG emissions when compared to the proposed project. However, as this alternative would decrease industrial uses by 116,191 square feet and could result in 120 fewer employees on the project site, there would be an incremental decrease in GHG emissions as compared to the proposed project during project operation, should the industrial users commit to the use of comparable zero emission vehicles. Nonetheless, this alternative would require mitigation, similar to the proposed project, through a combination of on-site measures and carbon credits, prioritizing on-site measures and utilizing carbon credits after all feasible on-site measures have been exhausted, to ensure that impacts would be less than significant with mitigation. If this project alternative must rely on carbon credits to ensure impacts would be less than significant with mitigation, the carbon offsets shall achieve real, permanent, quantifiable, verifiable, and enforceable reductions as set forth in California Health and Safety Code Section 38562(d)(1), and one carbon offset credit shall mean the past reduction or sequestration of one metric ton (MT) of carbon dioxide equivalent CO_2e that is "not otherwise required" (CEQA Guidelines § 15126.4(c)(3)).

Hazards and Hazardous Material

As noted in Section 3.8, Hazards and Hazardous Materials, the proposed project's impacts related to the release of hazardous materials during excavation and construction from contaminated soils, soil vapor, contaminated groundwater, the potential to encounter USTs, and being located on a listed hazardous materials site, would be reduced to less than significant levels with mitigation incorporated. The proposed project's impacts related to hazardous materials upset risk, hazardous emissions proximate to a school, proximity to public airport safety hazard, emergency response and evacuation, wildland fires, and cumulative impacts would be less than significant without mitigation.

Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative would include ground disturbance both within the project site and within the areas proposed for the off-site improvements, which could result in impacts related to the release of hazardous materials during

excavation and construction from contaminated soils, soil vapor, contaminated groundwater, the potential to encounter USTs, and being located on a listed hazardous materials site. During construction, this alternative would require mitigation to reduce potential impacts related to the release of hazardous materials. Therefore, similar impacts related to hazards and hazardous materials would occur under this alternative during construction and impacts would be less than significant with mitigation.

At operation, similar to the proposed project, this alternative would use hazardous materials for general landscaping and maintenance activities, and, depending on the nature of the industrial uses, could use additional hazardous materials for day-to-day operations. This alternative would result in similar, or potentially greater, impacts related to the storage, use, and disposal of hazardous materials, and would comply with applicable plans and regulations related to hazardous materials. Thus, at operation there would be less than significant impacts related to potential exposure of persons to hazards or hazardous materials under this alternative. Therefore, the Heavy Industrial/Light Industrial Alternative would result in similar impacts related to hazards and hazardous materials as compared to the proposed project and impacts would be less than significant with mitigation.

Hydrology and Water Quality

As noted in Section 3.9, Hydrology and Water Quality, the proposed project's impacts related to erosion/siltation, flooding, additional sources of polluted runoff, impedance of flood flows from alterations to the existing drainage pattern of the site, and risk of pollutant release due to project site inundation would be reduced to less than significant levels with mitigation incorporated. The proposed project's impacts related to surface and groundwater quality during construction and operation, groundwater supply/recharge, water quality control or sustainable groundwater management plans consistency, and cumulative impacts would be less than significant without mitigation.

Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative would include ground disturbance both within the project site and within the areas proposed for the off-site improvements, which could result in erosion/siltation and additional sources of polluted runoff. Similar to the proposed project, construction activities would be required to comply with the terms of the National Pollutant Discharge Elimination System (NPDES) permits and the Contra Costa County Ordinance Code Chapter 1014-4, which requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which would reduce pollutants from construction activities potentially entering surface waters. Therefore, similar impacts related to erosion/siltation and additional sources of polluted runoff would occur under this alternative during construction and impacts would be less than significant with mitigation. At operation, this alternative would increase impervious surfaces compared to existing conditions and would potentially generate increased runoff amounts. Similar to the proposed project, this alternative would be required to implement mitigation to ensure that development would be designed to minimize stormwater runoff and pollution and impacts would be less than significant with mitigation. Therefore, the Heavy Industrial/Light Industrial Alternative would result in similar impacts related to hydrology and water quality as compared to the proposed project and impacts would be less than significant with mitigation.

Land Use and Planning

As noted in Section 3.10, Land Use and Planning, the proposed project's impacts related to physically dividing an established community, conflicting with applicable plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect, and cumulative impacts would be less than significant without mitigation.

Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative would result in the development of industrial uses and on-site parking, landscaped areas, bioretention areas, and infrastructure improvements. The off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would be developed. Similar to the proposed project, this alternative would not physically divide an established community, nor result in impacts related to a conflict with applicable plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, the Heavy Industrial/Light Industrial Alternative would result in similar impacts related to land use and planning as compared to the proposed project and impacts would be less than significant without mitigation.

Noise

As noted in Section 3.11, Noise, the proposed project would result in noise from construction activities and operational noise from mechanical ventilation equipment, parking lot activities, truck loading activities, and increased traffic on local roadway segments in the project vicinity. Impacts related to substantial noise increase in excess of standards during construction would be less than significant with mitigation. The proposed project's impacts would be less than significant without mitigation with respect to noise levels that would conflict with any land use plan, policy, or regulation, substantial noise increases in excess of standards (during operation), groundborne vibration, groundborne noise levels, excessive noise levels from airport activity, and cumulative impacts.

Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative would include ground disturbance both within the project site and within the areas proposed for the off-site improvements, resulting in similar noise impacts from the operation of construction equipment. Therefore, similar impacts related to noise would occur under this alternative during construction and impacts would be less than significant with mitigation. At operation, the industrial uses would result in similar impacts related to noise from mechanical ventilation equipment, parking lot activities, truck loading activities, and increased traffic on local roadways and impacts would be less than significant without mitigation. As this alternative would be on the same site as the proposed project, there would similarly be no impact with respect to excessive noise levels from airport activity. Therefore, the Heavy Industrial/Light Industrial Alternative would result in similar impacts related to noise as compared to the proposed project, and impacts would be less than significant with mitigation.

Public Services

As noted in Section 3.12, Public Services, the proposed project may result in an increased demand for fire protection facilities and police protection facilities during construction. At operation, the

three warehouses could result in up to 573 new employees at the project site, and in turn, could result in an increase in calls for fire protection, emergency services, or police protection. However, the proposed project's impacts related to fire protection facilities, police protection facilities, school facilities, library facilities, and cumulative impacts would be less than significant without mitigation.

Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative may result in an increased demand for fire protection facilities and police protection facilities during construction; however, impacts would be less than significant without mitigation. At operation, there would be similar impacts related to an increase in calls for fire protection, emergency services, or police protection as compared to the proposed project and impacts would be less than significant. At operation, similar to the proposed project, this alternative would result in less than significant impacts related to an increased demand for school facilities and library facilities. However, as this alternative would decrease industrial uses by 116,191 square feet and result in 120 fewer employees on the project site, there would be an incremental decrease in the demand for fire protection, emergency services, and police protection as compared to the proposed project at operation. Therefore, the Heavy Industrial/Light Industrial Alternative would result in reduced impacts related to public services as compared to the proposed project, and impacts would be less than significant without mitigation.

Transportation

As noted in Section 3.13, Transportation, the proposed project would result in significant and unavoidable impacts related to the project's effect on VMT. The proposed project would implement mitigation, which would require the applicant to prepare a project-specific TDM Program in consultation with the County to reduce project-generated VMT. However, with incorporation of mitigation, impacts would be reduced to the extent feasible, but would remain significant and unavoidable at the project level and under cumulative conditions. The proposed project's impacts related to roadway safety hazards, pedestrian facilities, and bicycle facilities would be reduced to less than significant levels with mitigation incorporated. The proposed project's impacts related to emergency access and public transit would be less than significant without mitigation.

Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative would generate additional VMT. As this alternative would decrease industrial uses by 116,191 square feet and could result in 120 fewer employees on the project site, total VMT would decrease under this alternative as compared to the proposed project; however, the significant and unavoidable VMT impact would be similar to the proposed project, because the average one-way trip length for automobile trips generated by the Heavy Industrial/Light Industrial Alternative would be similar to the trip length for the proposed project. Similar to the proposed project, this alternative would be required to implement mitigation to reduce VMT, including implementation of TDM strategies. Similar to the proposed project, impacts related to VMT would be reduced to the extent feasible with the incorporation of mitigation; but impacts would remain significant and unavoidable at the project level and under cumulative conditions under this alternative.

Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative would result in potential impacts related to roadway safety hazards, pedestrian facilities, and bicycle facilities and

would require similar mitigation to reduce impacts to less than significant. Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative would result in less than significant impacts to emergency access and public transit without mitigation.

In conclusion, the Heavy Industrial/Light Industrial Alternative would result in similar impacts related to transportation as compared to the proposed project, and the VMT impact would be significant and unavoidable, reduced to the extent feasible with mitigation.

Utilities and Service Systems

As noted in Section 3.14, Utilities and Service Systems, the three warehouses could result in up to 573 new employees at the project site, and in turn, would result in an increase in the demand for water, wastewater, and solid waste collection services. Development of the site would also require the construction of new stormwater facilities. The proposed project's impacts related to stormwater drainage would be reduced to less than significant levels with mitigation incorporated. The proposed project's impacts related to water supply, wastewater treatment, natural gas, electric power, telecommunications facilities, landfill capacity, consistency with solid waste regulations, and cumulative impacts would be less than significant without mitigation.

Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative would result in an increased demand for water, wastewater, solid waste collection, natural gas, electric power, and telecommunication facilities. As this alternative would decrease industrial uses by 116,191 square feet and result in 120 fewer employees on the project site, there would be an incremental decrease in the demand for water, wastewater, solid waste collection, natural gas, electric power, and telecommunication facilities as compared to the proposed project. Therefore, the Heavy Industrial/Light Industrial Alternative would result in reduced impacts related to water supply, wastewater treatment, natural gas, electric power, telecommunications facilities, landfill capacity, as compared to the proposed project, and impacts would be less than significant without mitigation.

Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative would require the construction of new stormwater facilities to capture increased surface runoff as compared to existing conditions. Similar to the proposed project, this alternative would incorporate Low Impact Development (LID) techniques to allow for stormwater infiltration and treatment before being discharged to the storm drain system and mitigation to ensure that the development collects and conveys stormwater entering or originating from the project site in accordance with Division 914 of the Contra Costa County Ordinance Code. Therefore, the Heavy Industrial/Light Industrial Alternative would result in similar impacts related to stormwater drainage as compared to the proposed project and impacts would be less than significant with mitigation.

Wildfire

As noted in Section 3.15, Wildfire, the proposed project's impacts related to impairment of an emergency response plan or emergency evacuation plan, exposing project occupants to pollutant concentrations from wildfire, installation or maintenance of infrastructure that exacerbates fire risk, flooding and landslide hazards due to post-fire slope instability or drainage changes, and cumulative impacts would be less than significant without mitigation.

Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative would result in the development of industrial uses and on-site parking, landscaped areas, bioretention areas, and infrastructure improvements. Similar to the proposed project, the off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would be developed. Similar to the proposed project, this alternative could potentially impede evacuation and emergency vehicle access during construction and at operation. However, this alternative would be required to comply with the County Emergency Operations Plan (EOP), ensuring efficient response to emergency incidents associated with emergencies affecting the County and be designed in accordance with the County's standards to accommodate emergency vehicle access. Therefore, the Heavy Industrial/Light Industrial Alternative would result in similar impacts as compared to the proposed project related to emergency response and emergency evacuation and impacts would be less than significant without mitigation.

Similar to the proposed project, the Heavy Industrial/Light Industrial Alternative would develop a site that is relatively flat, not located near steep slopes susceptible to wildfire, mostly surrounded by urban uses, and lacking in woodlands that could provide fuel load for wildfire. Therefore, the Heavy Industrial/Light Industrial Alternative would result in similar impacts as compared to the proposed project related to exposing project occupants to pollutant concentrations from wildfire, installation or maintenance of infrastructure that exacerbates fire risk, or flooding and landslide hazards due to post-fire slope instability or drainage changes. Thus, similar to the proposed project, impacts under this alternative would be less than significant without mitigation.

6.6.2 - Conclusion

The Heavy Industrial/Light Industrial Alternative would have similar impacts to the proposed project's less than significant impacts associated with aesthetics, biological resources, cultural resources and tribal cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, transportation, and wildfire. This alternative would increase the severity of the proposed project's less than significant impacts associated with air quality and GHG emissions. This alternative would reduce the severity of the proposed project's less than significant impacts associated with energy, public services and utilities and service systems. This alternative would not avoid or lessen the severity of the proposed project's significant and unavoidable impacts related to the project's effect on VMT at the project level and under cumulative conditions.

The Heavy Industrial/Light Industrial Alternative would meet most of the project objectives, although in some cases to a lesser extent than the proposed project. As development under this alternative would change the existing project site from fallow agricultural land with non-native grasses, herbaceous plants, and forbs to industrial uses, it would meet the following objectives to the same extent as the proposed project: (1) developing industrial uses in North Richmond in accordance with the General Plan; (2) developing an industrial business park that is economically competitive with other similar centers in the land-constrained East Bay market; (3) developing vacant or underutilized property in the County with an attractive, state-of-the art industrial business park; (4) developing warehouse/distribution buildings that meet industry standards for modern, operational design criteria and provide opportunities for warehouse/distribution building users to

locate in North Richmond; (5) maximizing the utility of sites in close proximity to already established industrial areas, designated truck route and freeways; (6) developing an underutilized or blighted property that has access to available infrastructure, including roads and utilities to be used as part of the supply chain and goods movement network; (7) redeveloping an underutilized or blighted property within the County with productive uses that would generate tax revenue and maximize buildout potential for employment-generating uses; and (8) result in eventual annexation of the project site to the West County Wastewater District.

However, as this alternative would decrease industrial uses by 116,191 square feet, could result in 120 fewer employees on the project site, and the uncertainty as to whether the industrial users would commit to the use of comparable zero emission vehicles, the following objectives would be met, but to a lesser extent than the proposed project: (1) implementing policies of importance to the County (as reflected in the General Plan); (2) reducing greenhouse gas emissions from transportation sources through provision of bicycle and pedestrian facilities; and (3) improving facilities to connect pedestrians and bicyclists with transit stops, parks, and other community gathering places.

6.7 - Alternative 3—Single Warehouse Alternative

Under the Single Warehouse Alternative, only one warehouse building would be constructed on the project site. Under this scenario, all existing improvements (foundations associated with the former structures, asphalt, concrete, fence poles, and retaining walls) would be demolished, and one concrete tilt-up warehouse, totaling 183,456 square feet would be constructed. The warehouse building would include 165,456 square feet of warehouse space and 18,000 square feet of office space, and would be 1-story tall, approximately 42 feet in height. Similar to the proposed project, this alternative would include approximately 196,245 square feet of landscaped areas (including bioretention areas), 343 auto parking spaces, 8 trailer parking spaces, and 915 delivery van parking spaces, and on-site bicycle and pedestrian facilities. The future occupant would be an e-commerce last-mile distribution company, consistent with the North Richmond P-1 Zoning District and LI and HI General Plan designations. The future occupant would implement construction and operational best practices to reduce emissions and improve air quality as described in Chapter 2, Project Description. The warehouse building could employ up to 850 people and would operate 24 hours a day, 7 days a week. The off-site improvements as described in Chapter 2, Project Description, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would be developed under this alternative.

The technical memoranda supporting the air quality, greenhouse gas, noise, and transportation analyses for the Single Warehouse Alternative are included in Appendix J.

6.7.1 - Impact Analysis

Aesthetics

As noted in Section 3.1, Aesthetics, the proposed project's impacts related to scenic vistas, scenic resources, and the existing visual character and quality of public views of the site and its

surroundings would be less than significant without mitigation and impacts with respect to lighting and glare would be less than significant with mitigation. Cumulative impacts would be less than significant.

Similar to the proposed project, the Single Warehouse Alternative would result in the development of the site with one new warehouse building and associated parking, landscaping, and bioretention areas. The off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would also be developed. This alternative would result in a decrease of industrial uses by 372,081 square feet compared to the proposed project. Similar to the proposed project, this alternative would result in a change in the visual character, views, nighttime lighting, and daytime glare both on-site and off-site. However, under this alternative, only one building and its associated parking would be constructed, thereby resulting in an incremental decrease in impacts related to scenic vistas, scenic resources, the existing visual character and quality of public views of the site and its surroundings, lighting, and glare as compared to the proposed project. Therefore, the Single Warehouse Alternative would result in reduced impacts on aesthetics, light, and glare as compared to the proposed project; impacts would be less than significant without mitigation with respect to scenic vistas, scenic resources, the existing visual character and quality of public views of the site, and cumulative impacts. Impacts under the Single Warehouse Alternative would be less than significant with mitigation with respect to lighting and glare.

Air Quality

As noted in Section 3.2, Air Quality, the proposed project's impacts related to air quality would be less than significant without mitigation with respect to air quality management plan consistency and sensitive receptors' exposure to toxic air contaminant concentrations. The proposed project's impacts related to criteria pollutant emissions would be less than significant with mitigation for construction, and less than significant without mitigation for operations. Impacts would be less than significant without mitigation for objectionable odors exposure during construction and less than significant with mitigation for objectionable odors exposure during operation. Cumulative impacts would be less than significant with mitigation incorporated.

Similar to the proposed project, the Single Warehouse Alternative would include ground disturbance both within the project site and within the areas proposed for the off-site improvements and would require the implementation of the BAAQMD BMPs to minimize fugitive dust impacts during construction. The Single Warehouse Alternative would include less construction and ground disturbance compared to the proposed project. Therefore, reduced impacts to air quality and sensitive receptors would occur under this alternative during construction, and impacts would be less than significant, with mitigation potentially required to reduce criteria pollutant and ozone precursor emissions depending principally on the duration and intensity of construction.

For operations, as only one warehouse would be constructed, resulting in a decrease of industrial uses by 372,081 square feet when compared to the proposed project, there would be an incremental decrease in operational criteria air pollutant quality impacts as compared to the proposed project; like the proposed project, no mitigation would be required to reduce such

impacts, although it is assumed that this alternative would follow the commitments to zero emission vehicles to further reduce less than significant impacts. As analyzed in the Technical Memorandum, dated June 21, 2021, prepared by PlaceWorks for this alternative (Appendix J), operational criteria pollutant and ozone precursor emissions would be less than significant during operation. As this alternative is assumed to follow the commitments to zero emission vehicles, operational health risks to sensitive receptors, like the proposed project, would be less than significant during operation. For objectionable odors, it is less likely that this alternative would need to implement Mitigation Measure MM AIR-4a (Odor Management Plan), given the assumption that an e-commerce last-mile distribution company would occupy the warehouse, and would not be likely to propose operations that have potential to emit nuisance odors. Therefore, the Single Warehouse Alternative would result in reduced impacts related to air quality as compared to the proposed project, and, like the proposed project, any potentially significant impacts would be less than significant with mitigation.

Biological Resources

As noted in Section 3.3, Biological Resources, the proposed project's impacts related to special-status wildlife species and wildlife movement corridors would be reduced to less than significant with mitigation incorporated. The proposed project would result in less than significant impacts without mitigation with respect to sensitive natural communities and cumulative impacts. Lastly, the proposed project would result in no impacts with respect to wetlands and jurisdictional features and would not conflict with local policies or ordinances or an adopted Habitat Conservation Plan.

Similar to the proposed project, the Single Warehouse Alternative would include ground disturbance both within the project site and within the areas proposed for the off-site improvements and would require the implementation of mitigation measures to reduce impacts to biological resources. Therefore, similar impacts to biological resources would occur under this alternative during construction and impacts would be less than significant with mitigation. At operation, there would be similar impacts related to biological resources. However, because only one warehouse would be constructed and landscaping (including bioretention areas) would increase by approximately 66,526 square feet as compared to the proposed project, a net benefit to wildlife species and wildlife movement corridors could be provided. Therefore, the Single Warehouse Alternative would result in reduced impacts related to biological resources as compared to the proposed project and impacts would be less than significant with mitigation.

Cultural Resources and Tribal Cultural Resources

As noted in Section 3.4, Cultural Resources and Tribal Cultural Resources, the proposed project's impacts related to historic resources, archaeological resources, disturbance to human remains, and tribal cultural resources, and cumulative impacts would be reduced to less than significant with mitigation incorporated.

Similar to the proposed project, the Single Warehouse Alternative would include ground disturbance both within the project site and within the areas proposed for the off-site improvements and would require the implementation of mitigation measures to reduce impacts to cultural and tribal cultural resources. Therefore, similar impacts to cultural and tribal cultural resources would occur under this alternative during construction and impacts would be less than significant with mitigation. However,

because only one warehouse would be constructed and landscaping (including bioretention areas) would increase by approximately 66,526 square feet as compared to the proposed project, the depth of construction across the entire project site would likely be reduced as compared the proposed project, thereby reducing the potential to encounter cultural resources across the entire site. As such, there could be an incremental decrease in the potential to encounter cultural or tribal cultural resources during construction as compared to the proposed project. Therefore, the Single Warehouse Alternative would result in reduced impacts related to cultural and tribal cultural resources as compared to the proposed project and impacts would be less than significant with mitigation.

Energy

As noted in Section 3.5, Energy, the proposed project would result in energy consumption during construction and at project operation. However, the proposed project's impacts related to energy would be less than significant without mitigation with respect to energy use during construction and at operation, conflicting with a plan for renewable energy or energy efficiency, and cumulative impacts.

Similar to the proposed project, the Single Warehouse Alternative, would include ground disturbance both within the project site and within the areas proposed for the off-site improvements. Therefore, similar impacts related to energy consumption would occur under this alternative during construction and impacts would be less than significant without mitigation. At operation, there would be similar impacts related to energy consumption and impacts would be less than significant without mitigation. However, only one warehouse would be constructed, resulting in a decrease of industrial uses by 372,081 square feet when compared to the proposed project. As such, there would be an incremental decrease in energy consumption as compared to the proposed project during project operation. Therefore, the Single Warehouse Alternative would result in reduced impacts related to energy as compared to the proposed project and impacts would be less than significant without mitigation.

Geology and Soils

As noted in Section 3.6, Geology and Soils, the proposed project's impacts related to exposure of persons, structures, or improvements to seismic- and soil-related hazards would be reduced to less than significant levels with mitigation incorporated. The proposed project's impacts related to soil erosion, the loss of topsoil, wastewater disposal systems, paleontological resources, and cumulative impacts would be less than significant without mitigation.

Similar to the proposed project, the Single Warehouse Alternative would include ground disturbance both within the project site and within the areas proposed for the off-site improvements, which could result in impacts related to soil erosion, the loss of topsoil, or paleontological resources. Similar to the proposed project, construction activities would be required to comply with the conditions and requirements of the Construction General Permit from the State Water Board consistent with the Contra Costa County's General Permit (No. CAS612008), which are designed to minimize potential erosion issues. Therefore, similar impacts related to soil erosion and the loss of topsoil would occur under this alternative during construction and impacts would be less than

significant without mitigation. As no known paleontological resources are located within the project site boundaries, impacts related to paleontological resources would be similar for the Single Warehouse Alternative, and impacts would be less than significant without mitigation. Similar to the proposed project, this alternative would not require the use of a septic tank or alternative wastewater disposal system, and there would be no impact. At operation, there would be similar impacts related to exposure of persons, structures, or improvements to seismic- and soil-related hazards, which would require implementation of similar mitigation, and impacts would be less than significant with mitigation. Therefore, the Single Warehouse Alternative would result in similar impacts related to geology and soils as compared to the proposed project and impacts would be less than significant with mitigation.

Greenhouse Gas Emissions

As noted in Section 3.7, Greenhouse Gas Emissions, the proposed project's impacts with respect to GHG emissions plan consistency and cumulative impacts would be less than significant without mitigation. The proposed project's impacts related to the generation of GHG emissions during construction and at project operation would be reduced to less than significant levels with mitigation incorporated, through a combination of on-site and off-site measures and carbon offset credits.

Similar to the proposed project, the Single Warehouse Alternative would include ground disturbance both within the project site and within the areas proposed for the off-site improvements and would require the implementation of the BAAQMD BMPs to minimize air quality impacts during construction, which would in turn minimize GHG emissions during construction. Therefore, similar but reduced impacts related to GHG emissions would occur under this alternative during construction, based on construction of one rather than three buildings. As analyzed in the Technical Memorandum, dated June 21, 2021, prepared by PlaceWorks for this alternative (Appendix J), this alternative would result in an exceedance in the BAAQMD's significance threshold for annual GHG emissions. Therefore, at operation, there would be similar impacts related to GHG emissions, which would require the implementation of similar mitigation measures such as on-site measures and the purchase of carbon credits, prioritizing on-site measures and utilizing carbon credits after all feasible on-site measures have been exhausted, to ensure that impacts would be less than significant with mitigation. Therefore, the Single Warehouse Alternative would result in reduced impacts related to GHG emissions as compared to the proposed project and impacts would be less than significant with mitigation. If this project alternative must rely on carbon credits to ensure impacts would be less than significant with mitigation, the carbon offsets shall achieve real, permanent, quantifiable, verifiable, and enforceable reductions as set forth in California Health and Safety Code Section 38562(d)(1), and one carbon offset credit shall mean the past reduction or sequestration of one metric ton (MT) of carbon dioxide equivalent CO_2e that is "not otherwise required" (CEQA Guidelines § 15126.4(c)(3)).

Hazards and Hazardous Material

As noted in Section 3.8, Hazards and Hazardous Materials, the proposed project's impacts related to the release of hazardous materials during excavation and construction from contaminated soils, soil vapor, contaminated groundwater, the potential to encounter USTs, and being located on a listed hazardous materials site, would be reduced to less than significant levels with mitigation

incorporated. The proposed project's impacts related to hazardous materials upset risk, hazardous emissions proximate to a school, proximity to public airport safety hazard, emergency response and evacuation, wildland fires, and cumulative impacts would be less than significant without mitigation.

Similar to the proposed project, the Single Warehouse Alternative would include ground disturbance both within the project site and within the areas proposed for the off-site improvements, which could result in impacts related to the release of hazardous materials during excavation and construction from contaminated soils, soil vapor, contaminated groundwater, the potential to encounter USTs, and being located on a listed hazardous materials site. During construction, this alternative would require mitigation to reduce potential impacts related to the release of hazardous materials. Therefore, similar impacts related to hazards and hazardous materials would occur under this alternative during construction and impacts would be less than significant with mitigation. At operation, similar to the proposed project, this alternative would use hazardous materials for general landscaping and maintenance activities, would result in similar impacts related to the storage, use, and disposal of hazardous materials and would comply with applicable plans and regulations related to hazardous materials. Thus, at operation there would be less than significant impacts related to potential exposure of persons to hazards or hazardous materials under this alternative. Therefore, the Single Warehouse Alternative would result in similar impacts related to hazards and hazardous materials as compared to the proposed project and impacts would be less than significant with mitigation.

Hydrology and Water Quality

As noted in Section 3.9, Hydrology and Water Quality, the proposed project's impacts related to erosion/siltation, flooding, additional sources of polluted runoff, impedance of flood flows from alterations to the existing drainage pattern of the site, and risk of pollutant release due to project site inundation would be reduced to less than significant levels with mitigation incorporated. The proposed project's impacts related to surface and groundwater quality during construction and operation, groundwater supply/recharge, water quality control or sustainable groundwater management plans consistency, and cumulative impacts would be less than significant without mitigation.

Similar to the proposed project, the Single Warehouse Alternative would include ground disturbance both within the project site and within the areas proposed for the off-site improvements, which could result in erosion/siltation and additional sources of polluted runoff. Similar to the proposed project, construction activities would be required to comply with the terms of the NPDES permits and the Contra Costa County Ordinance Code Chapter 1014-4, which requires the preparation and implementation of a SWPPP, which would reduce pollutants from construction activities potentially entering surface waters. Therefore, similar impacts related to erosion/siltation and additional sources of polluted runoff would occur under this alternative during construction and impacts would be less than significant with mitigation. At operation, this alternative would increase impervious surfaces compared to existing conditions and would potentially generate increased runoff amounts. Similar to the proposed project, this alternative would be required to implement mitigation to ensure that development would be designed to minimize stormwater runoff and pollution and impacts would be less than significant with mitigation. Therefore, the Single Warehouse Alternative

would result in similar impacts related to hydrology and water quality as compared to the proposed project and impacts would be less than significant with mitigation.

Land Use and Planning

As noted in Section 3.10, Land Use and Planning, the proposed project's impacts related to physically dividing an established community, conflicting with applicable plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect, and cumulative impacts would be less than significant without mitigation.

Similar to the proposed project, the Single Warehouse Alternative would result in the development of one new warehouse with its associated parking, landscaping, and bioretention areas, and infrastructure improvements. The off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would be developed. Similar to the proposed project, this alternative would not physically divide an established community, nor result in impacts related to a conflict with applicable plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, the Single Warehouse Alternative would result in similar impacts related to land use and planning as compared to the proposed project and impacts would be less than significant without mitigation.

Noise

As noted in Section 3.11, Noise, the proposed project would result in noise from construction activities and operational noise from mechanical ventilation equipment, parking lot activities, truck loading activities, and increased traffic on local roadway segments in the project vicinity. Impacts related to substantial noise increase in excess of standards during construction would be less than significant with mitigation. The proposed project's impacts would be less than significant without mitigation with respect to noise levels that would conflict with any land use plan, policy, or regulation, substantial noise increases in excess of standards (during operation), groundborne vibration, groundborne noise levels, excessive noise levels from airport activity, and cumulative impacts.

Similar to the proposed project, the Single Warehouse Alternative would include ground disturbance both within the project site and within the areas proposed for the off-site improvements, resulting in similar noise impacts from the operation of construction equipment. Therefore, similar impacts related to noise would occur under this alternative during construction and impacts would be less than significant with mitigation. An operational noise impact analysis for this alternative was prepared by PlaceWorks, dated June 21, 2021 (Appendix J). The analysis demonstrated that at operation, the industrial uses would result in similar impacts related to noise from mechanical ventilation equipment, parking lot activities, truck loading activities, and increased traffic on local roadways and impacts would be less than significant without mitigation. As this alternative would be on the same site as the proposed project, there would similarly be no impact with respect to excessive noise levels from airport activity. Therefore, the Single Warehouse Alternative would result in similar impacts related to noise as compared to the proposed project, and impacts would be less than significant with mitigation.

Public Services

As noted in Section 3.12, Public Services, the proposed project may result in an increased demand for fire protection facilities and police protection facilities during construction. At operation, proposed project could result in up to 573 new employees at the project site, and in turn, could result in an increase in calls for fire protection, emergency services, or police protection. However, the proposed project's impacts related to fire protection facilities, police protection facilities, school facilities, library facilities, and cumulative impacts would be less than significant without mitigation.

Similar to the proposed project, the Single Warehouse Alternative may result in an increased demand for fire protection facilities and police protection facilities during construction and impacts would be less than significant without mitigation. At operation, there would be similar impacts related to an increase in calls for fire protection, emergency services, or police protection as compared to the proposed project and impacts would be less than significant without mitigation. At operation, similar to the proposed project, this alternative would result in less than significant impacts related to an increased demand for school facilities and library facilities. However, as there could be 277 more employees at the project site, there would be an incremental increase in impacts as compared to the proposed project. Therefore, the Single Warehouse Alternative would result in greater impacts related to public services as compared to the proposed project and impacts would be less than significant without mitigation.

Transportation

As noted in Section 3.13, Transportation, the proposed project would result in significant and unavoidable impacts related to the project's effect on VMT. The proposed project would implement mitigation, which would require the applicant to prepare a project-specific TDM Program in consultation with the County to reduce project-generated VMT. However, with incorporation of mitigation, impacts would be reduced to the extent feasible, but would remain significant and unavoidable at the project level and under cumulative conditions. The proposed project's impacts related to roadway safety hazards, pedestrian facilities, and bicycle facilities would be reduced to less than significant levels with mitigation incorporated. The proposed project's impacts related to emergency access and public transit would be less than significant without mitigation.

Kittleson and Associates prepared technical memoranda for the Single Warehouse Alternative, one related to level of service and one related to VMT (Appendix J).

Similar to the proposed project, the Single Warehouse Alternative would generate additional VMT. The Single Warehouse Alternative could generate approximately 33,581 VMT, which is approximately 9,051 more VMT than the proposed project's VMT generation of 24,530. Although total VMT would be increased compared to the proposed project under this alternative, the significant and unavoidable VMT impact would be similar to the proposed project, because the average one-way trip length for automobile trips generated by the Single Warehouse Alternative would be similar to the trip length for the proposed project. Similar to the proposed project, this alternative would be required to implement mitigation to reduce VMT, including implementation of TDM strategies. Similar to the proposed project, impacts related to VMT would be reduced to the extent feasible

with the incorporation of mitigation; but impacts would remain significant and unavoidable at the project level and under cumulative conditions under this alternative.

Similar to the proposed project, the Single Warehouse Alternative would result in potential impacts related to roadway safety hazards, pedestrian facilities, and bicycle facilities and would require similar mitigation to reduce impacts to less than significant. Similar to the proposed project, the Single Warehouse Alternative would result in less than significant impacts to emergency access and public transit without mitigation.

In conclusion, the Single Warehouse Alternative would result in similar impacts related to transportation as compared to the proposed project, and the VMT impact would be significant and unavoidable, reduced to the extent feasible with mitigation.

Utilities and Service Systems

As noted in Section 3.14, Utilities and Service Systems, the three warehouses could result in up to 573 new employees at the project site, and in turn, would result in an increase in the demand for water, wastewater, and solid waste collection services. Development of the site would also require the construction of new stormwater facilities. The proposed project's impacts related to stormwater drainage would be reduced to less than significant levels with mitigation incorporated. The proposed project's impacts related to water supply, wastewater treatment, natural gas, electric power, telecommunications facilities, landfill capacity, consistency with solid waste regulations, and cumulative impacts would be less than significant without mitigation.

Similar to the proposed project, the Single Warehouse Alternative would result in an increased demand for water, wastewater, solid waste collection, natural gas, electric power, and telecommunication facilities. Although there could be 277 more employees at the project site, only one building would be constructed; therefore, there would be an incremental decrease in impacts as compared to the proposed project. Furthermore, WCWD staff has indicated that there is a 10-inch sewer line at the Pittsburg Avenue/3rd Street (Fred Jackson Way) intersection and a 12-inch sewer line at the Brookside Drive/3rd Street (Fred Jackson Way) intersection, and that the sewer lines can accommodate the projected 10,072.8 gallons-per-day[1] of additional flow from the Single Warehouse Alternative.[2] Therefore, the Single Warehouse Alternative would result in reduced impacts related to water supply, wastewater treatment, natural gas, electric power, telecommunications facilities, landfill capacity, as compared to the proposed project and impacts would be less than significant without mitigation.

Similar to the proposed project, the Single Warehouse Alternative would require the construction of new stormwater facilities to capture increased surface runoff as compared to existing conditions. Similar to the proposed project, this alternative would incorporate LID techniques to allow for stormwater infiltration and treatment before being discharged to the storm drain system and mitigation to ensure that development collects and conveys stormwater entering or originating from

[1] Calculation: [165,456 x 0.05 + 18,000 x 0.10]
[2] Hodge, Armando. Engineer III, WCWD. Personal communication: e-mail. October 12, 2021.

the project site in accordance with Division 914 of the Contra Costa County Ordinance Code. Therefore, the Single Warehouse Alternative would result in similar impacts related to stormwater drainage as compared to the proposed project and impacts would be less than significant with mitigation.

Wildfire

As noted in Section 3.15, Wildfire, the proposed project's impacts related to impairment of an emergency response plan or emergency evacuation plan, exposing project occupants to pollutant concentrations from wildfire, installation or maintenance of infrastructure that exacerbates fire risk, flooding and landslide hazards due to post-fire slope instability or drainage changes, and cumulative impacts would be less than significant without mitigation.

Similar to the proposed project, the Single Warehouse Alternative would result in the development of one new building and on-site parking, landscaped areas, bioretention areas, and infrastructure improvements. Similar to the proposed project, the off-site improvements, including roadway improvements, bicycle and pedestrian facilities, sidewalks, curbs, gutters, landscaping, storm drain lines, bioretention swales, extension of waterlines, and traffic calming improvements would be developed. This alternative could potentially impede evacuation and emergency vehicle access during construction and at operation. However, this alternative would be required to comply with the County EOP, ensuring efficient response to emergency incidents associated with emergencies affecting the County and be designed in accordance with the County's standards to accommodate emergency vehicle access. Therefore, the Single Warehouse Alternative would result in similar impacts as compared to the proposed project related to emergency response and emergency evacuation and impacts would be less than significant without mitigation.

Similar to the proposed project, the Single Warehouse Alternative would develop a site that is relatively flat, not located near steep slopes susceptible to wildfire, mostly surrounded by urban uses, and lacking in woodlands that could provide fuel load for wildfire. Therefore, the Single Warehouse Alternative would result in similar impacts as compared to the proposed project related to exposing project occupants to pollutant concentrations from wildfire, installation or maintenance of infrastructure that exacerbates fire risk, or flooding and landslide hazards due to post-fire slope instability or drainage changes. Thus, similar to the proposed project, impacts under this alternative would be less than significant without mitigation.

6.7.2 - Conclusion

The Single Warehouse Alternative would lessen the severity of the proposed project's less than significant impacts associated with aesthetics, air quality, biological resources, cultural resources and tribal cultural resources, energy, geology and soils, and GHG emissions, and utilities and service systems. This alternative would have similar impacts to the proposed project's less than significant impacts associated with hazards and hazardous materials, hydrology and water quality, land use and planning, noise, transportation, and wildfire. This alternative would increase the severity of the proposed project's less than significant impacts associated with public services. This alternative would not avoid or lessen the severity of the proposed project's significant and unavoidable impact related to the project's effect on VMT at the project level and under cumulative conditions.

The Single Warehouse Alternative would meet all of the project objectives, although in some cases to a lesser extent than the proposed project because only one warehouse building would be constructed. As development under this alternative would change the existing project site from fallow agricultural land with non-native grasses, herbaceous plants, and forbs to industrial uses, it would meet the following objectives to the same extent as the proposed project: (1) implementing policies of importance to the County (as reflected in the General Plan); (2) reducing greenhouse gas emissions from transportation sources through provision of bicycle and pedestrian facilities; (3) improving facilities to connect pedestrians and bicyclists with transit stops, parks, and other community gathering places; and (4) result in eventual annexation of the project site to the West County Wastewater District.

However, as this alternative would decrease industrial uses by 372,081 square feet and could result in 73 fewer employees on the project site, the following objectives would be met, but to a lesser extent than the proposed project: (1) developing industrial uses in North Richmond in accordance with the General Plan; (2) developing an industrial business park that is economically competitive with other similar centers in the land-constrained East Bay market; (3) developing vacant or underutilized property in the County with an attractive, state-of-the art industrial business park; (4) developing warehouse/distribution buildings that meet industry standards for modern, operational design criteria and provide opportunities for warehouse/distribution building users to locate in North Richmond; (5) maximizing the utility of sites in close proximity to already established industrial areas, designated truck route and freeways; (6) developing an underutilized or blighted property that has access to available infrastructure, including roads and utilities to be used as part of the supply chain and goods movement network; and (7) redeveloping an underutilized or blighted property within the County with productive uses that would generate tax revenue and maximize buildout potential for employment-generating uses

6.8 - Environmentally Superior Alternative

The qualitative environmental effects of each alternative in relation to the proposed project, including the significance conclusion, are summarized in Table 6-1. Table 6-2 presents a comparison of the alternatives' ability to meet project objectives.

Table 6-1: Summary of Alternatives' Impacts

Impact	Proposed Project	Alternative 1– No Project/No Development Alternative	Alternative 2– Heavy Industrial/Light Industrial Alternative	Alternative 3– Single Warehouse Alternative
Aesthetics	LTSM	LTS (less)	LTSM (similar)	LTSM (less)
Air Quality	LTSM	NI (less)	LTSM (greater or less)	LTSM (less)
Biological Resources	LTSM	NI (less)	LTSM (similar)	LTSM (less)
Cultural Resources and Tribal Cultural Resources	LTSM	NI (less)	LTSM (similar)	LTSM (less)

Impact	Proposed Project	Alternative 1– No Project/No Development Alternative	Alternative 2– Heavy Industrial/Light Industrial Alternative	Alternative 3– Single Warehouse Alternative
Energy	LTS	NI (less)	LTS (less)	LTS (less)
Geology and Soils	LTSM	NI (less)	LTSM (similar)	LTSM (similar)
Greenhouse Gas Emissions	LTSM	NI (less)	LTSM[a] (greater or less)	LTSM (less)
Hazards and Hazardous Materials	LTSM	NI (less)	LTSM[b] (similar or greater)	LTSM (similar)
Hydrology and Water Quality	LTSM	NI (less)	LTSM (similar)	LTSM (similar)
Land Use and Planning	LTS	NI (less)	LTS (similar)	LTS (similar)
Noise	LTSM	NI (less)	LTSM (similar)	LTSM (similar)
Public Services	LTS	NI (less)	LTS (less)	LTS (greater)
Transportation	SU	NI (less)	SU (similar)	SU (similar)
Utilities and Service Systems	LTSM	NI (less)	LTSM (less)	LTSM (less)
Wildfire	LTS	LTS (similar)	LTS (similar)	LTS (similar)
Total less:		**14**	**3[a]**	**7**
Total Similar:		**1**	**10[b]**	**7**
Total Greater:		**0**	**2**	**1**

Notes:
NI = No Impact LTS = less than significant LTSM = less than significant with mitigation incorporated
SU = significant and unavoidable
[a] Air Quality and Greenhouse Gas Emissions impacts counted as greater
[b] Hazards and Hazardous Materials impact counted as similar
Source: FCS 2021.

Table 6-2: Summary of Alternatives' Meeting of Project Objectives

Objective	Proposed Project	Alternative 1– No Project/No Development Alternative	Alternative 2– Heavy Industrial/Light Industrial Alternative	Alternative 3– Single Warehouse Alternative
Develop industrial uses in North Richmond in accordance with the General Plan.	Yes	No	Yes	Yes (but to a lesser extent)

Objective	Proposed Project	Alternative 1– No Project/No Development Alternative	Alternative 2– Heavy Industrial/Light Industrial Alternative	Alternative 3– Single Warehouse Alternative
Implement policies of importance to the County, as reflected in the General Plan, including the County's December 11, 2018, adopted General Plan Amendment (GPA) GP18-0004 to the Conservation Element Section 8.14, Air Resources.	Yes	No	Yes (but to a lesser extent)	Yes
Reduce greenhouse gas emissions from transportation sources through provision of bicycle and pedestrian facilities.	Yes	No	Yes (but to a lesser extent)	Yes
Develop an industrial business park that is economically competitive with other similar centers in the land-constrained East Bay market, which will assist the County in competing economically on a domestic and international scale through the efficient and cost-effective movement of goods.	Yes	No	Yes	Yes (but to a lesser extent)
Develop vacant or underutilized property in the County with an attractive, state-of-the-art industrial business park that meets current industry standards for operational design criteria and that complements the surrounding existing and planned uses.	Yes	No	Yes	Yes (but to a lesser extent)
Develop warehouse/distribution buildings that meet industry standards for modern, operational design criteria and provide opportunities for warehouse/distribution building users to locate in North Richmond.	Yes	No	Yes	Yes (but to a lesser extent)
Maximize the utility of sites in close proximity to already established industrial areas, designated truck route and freeways thereby growing the economy and providing a more equal jobs-housing balance while avoiding or shortening truck-trip lengths on other roadways.	Yes	No	Yes	Yes (but to a lesser extent)
Develop an underutilized or blighted property that has access to available infrastructure, including roads and utilities to be used as part of the supply chain and goods movement network.	Yes	No	Yes	Yes (but to a lesser extent)

Objective	Proposed Project	Alternative 1–No Project/No Development Alternative	Alternative 2–Heavy Industrial/Light Industrial Alternative	Alternative 3–Single Warehouse Alternative
Redevelop an underutilized or blighted property within the County with productive uses that would generate tax revenue and maximize buildout potential for employment-generating uses.	Yes	No	Yes	Yes (but to a lesser extent)
Improve facilities to connect pedestrians and bicyclists with transit stops, parks, other community gathering places, and adjacent neighborhoods.	Yes	No	Yes (but to a lesser extent)	Yes
Result in eventual annexation of the project site to the West County Wastewater District.	Yes	No	Yes	Yes
Source: FCS 2021.				

CEQA Guidelines Section 15126(e)(2) requires an EIR to identify an environmentally superior alternative. If the No Project/No Development Alternative is the environmentally superior alternative, the EIR must also identify an environmentally superior alternative from among the other alternatives.

As shown in Table 6-1, the No Project/No Development Alternative would avoid the proposed project's significant and unavoidable impact related to the project's effect on VMT. The No Project/No Development Alternative would also avoid the proposed project's less than significant impacts associated with 13 environmental topic areas, as well as the need to implement any mitigation measures. The No Project/No Development Alternative would have similar impacts as the proposed project associated with one environmental topic area. As such, the No Project/No Development Alternative would be the environmentally superior alternative. However, as shown in Table 6-2, this alternative would not meet any of the project objectives, and the EIR is required to identify an environmentally superior alternative among the other alternatives.

As shown in Table 6-1, the Heavy Industrial/Light Industrial Alternative would increase the proposed project's less than significant impacts associated with two environmental topic areas and would result in similar impacts as the proposed project associated with 10 environmental topic areas. This alternative would lessen the severity of the proposed project's less than significant impacts associated with three environmental topical areas. This alternative would not avoid or lessen the severity of the proposed project's significant and unavoidable impacts related to the project's effect on VMT at the project level and under cumulative conditions. As shown in Table 6-2, depending on specific industrial uses, this alternative would meet most of the project objectives, although in some cases to a lesser extent than the proposed project.

As shown in Table 6-1, the Single Warehouse Alternative would reduce the proposed project's less than significant impacts associated with seven environmental topic areas and would result in similar impacts as the proposed project associated with seven environmental topic areas. This alternative would increase the proposed project's less than significant impacts associated with one environmental topic area. This alternative would not avoid or lessen the severity of the proposed project's significant and unavoidable impacts related to the project's effect on VMT at the project level and under cumulative conditions. Since this alternative would result in an overall reduction in environmental impacts, the Single Warehouse Alternative is considered the environmentally superior alternative under CEQA. However, as shown in Table 6-2, although the Single Warehouse Alternative would meet all of the project objectives, the objectives would be met to a lesser extent because only one warehouse building would be constructed.

6.9 - Alternatives Considered but Rejected from Further Consideration

The following alternatives were also initially considered. However, for reasons discussed below, they were dismissed from further consideration.

6.9.1 - Alternative Location

The only significant impact of the proposed project is related to VMT. VMT could be reduced by increasing the interactions between land uses on-site. Accordingly, during the alternatives review process, the County conducted a review of available vacant land near the I-80 and I-580 freeways that that could support a project similar in size and type as the proposed project, and that had an appropriate General Plan land use designation and zoning classification to allow for industrial uses. An appropriate alternative vacant site was not identified within the County limits in the general vicinity. Furthermore, CEQA confirms that whether a proponent can reasonably acquire, control, or otherwise have access to an alternative site is a key factor in determining whether an off-site alternative is potentially feasible (State CEQA Guidelines § 15126.6(f)). The County, as lead agency, is therefore not required to select an alternative site for the proposed project. Based on CEQA Guidelines Section 15126.6, a potential alternative location was rejected as infeasible.

6.9.2 - Mixed-Use Alternative

A mixed-use alternative, including one warehouse fulfillment building, retail uses, and workforce housing was considered. The mixed-use alternative could reduce VMT by increasing the interaction between land uses on-site. This alternative was rejected because such an alternative would not be consistent with the General Plan; the project site does not allow for mixed-uses, such as retail or housing without a General Plan Amendment. This alternative was also rejected because the surrounding land uses are primarily industrial in nature and, therefore, the site is not optimally located for local or smaller community-level retail uses or housing, and the County is focused on siting residential uses in other locations with more compatible land uses. Based on Section 15126.6 of the CEQA Guidelines, potential mixed-use development of the project site was rejected as impractical and infeasible and unable to meet the objectives of the proposed project.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 7: LIST OF PREPARERS AND CONTRIBUTORS

7.1 - CEQA Lead Agency

7.1.1 - Contra Costa County

Department of Conservation and Development

Principal Planner..... Francisco Avila
Principal Planner..... John Cunningham
Principal Planner.....Jamar Stamps
Director..... John Kopchik

7.2 - Other Agency CEQA Support

7.2.1 - Contra Costa County Fire Protection District

Fire Inspector..... Ted Leach

7.2.2 - Contra Costa County Flood Control and Water Conservation District

Staff Engineer ..... Jorge Hernandez

7.2.3 - Contra Costa County Public Works Department

Transportation Engineering .....Austin Pato
Engineering Services..... Randolph Sanders

7.3 - Project Sponsor and Sponsor Consultants

7.3.1 - CenterPoint Properties

Manager of Development Transactions ..... Ryan Kelleher
Senior Vice President..... John Lass

7.3.2 - Huffman-Broadway Group, Inc. (Biological Resources Assessment)

Biologist ..... Gary Deghi

7.3.3 - Dmitri Tioupine Tree Care & Preservation (Biological Assessment, Pre-Development Tree Assessment Report)

Certified Arborist..... Dmitri Tioupine

7.3.4 - Basin Research Associates (Archaeological Resources Assessment Report)

Principal..... Colin Busby, Ph.D., RPA

7.3.5 - Left Coast Architectural History (Historical Resource Evaluation)

Principal Architectural Historian ..... Caitlin Hibma

7.3.6 - Cornerstone Earth Group (Preliminary Geotechnical Investigation)

Project Engineer ..... Matthew J. Schaffer, PE
Senior Principal Engineer ..... Danh T. Tran, PE

7.3.7 - Cornerstone Earth Group (Phase I Environmental Site Assessment)

Principal Geologist ..... Christopher Heiny, PG
Senior Principal Geologist ..... Peter M. Langtry, PG, CEG

7.3.8 - PlaceWorks (Health Risk Assessment)

Senior Engineer ..... Steve Bush, PE

7.3.9 - PlaceWorks (Air Quality and Greenhouse Gas Emissions Technical Report)

Principal ..... Nicole Vermilion
Senior Engineer ..... Steve Bush, PE

7.3.10 - Kier & Wright Civil Engineers & Surveyors (Preliminary Hydrology and Hydraulics Report)

President/Engineer ..... Chuck McCallum, PE

7.3.11 - Kier & Wright Civil Engineers & Surveyors (Preliminary Stormwater Control Plan)

President/Engineer ..... Chuck McCallum, PE

7.4 - County Consultants

7.4.1 - FirstCarbon Solutions (Environmental Impact Report)

Project Director ..... Mary Bean
Senior Project Manager ..... Lisa Davison
Senior Cultural Resources Specialist ..... Dana DePietro, PhD, RPA
Senior Noise Specialist ..... Phil Ault
Senior Air Quality Specialist ..... Lance Park
Air Quality Specialist ..... Spencer Pignotti
Senior Biologist ..... Robert Carroll
Biologist ..... Alec Villanueva
Environmental Analyst ..... Spencer Pignotti
Environmental Analyst ..... Brittany Hagen
Senior Editor ..... Susie Harris
Word Processor ..... Melissa Ramirez

GIS/Graphics ..... Karlee McCracken
Reprographics ..... Octavio Perez

7.4.2 - Fehr & Peers (Transportation Impact Analysis)

Principal ..... Kathrin Tellez, AICP, PTP
Senior Associate ..... Ian Barnes, PE
Transportation Engineer/Planner ..... Ashlee Takushi, EIT

THIS PAGE INTENTIONALLY LEFT BLANK