5200 Lone Tree Way United Pacific Gas Station Project

Initial Study Mitigated Negative Declaration

February 15, 2022

Lead Agency:

City of Antioch
Planning Division
200 H Street
Antioch, CA 94509

Technical Assistance:

Stantec Consulting Services Inc.
1340 Treat Boulevard, Suite 300
Walnut Creek, California 94597

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Acronyms and Abbreviations

AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACM	Aluminum composite material
APD	Antioch Police Department
APN	Assessor's Parcel Number
Applicant	United Pacific
AQP	Air Quality Plan
AUSD	Antioch Unified School District
BAAQMD	Bay Area Air Quality Management District
BERD	Built Environment Resource Directory
BMPs	best management practices
CalEEMod	California Emissions Estimator Model
CALFIRE	California Department of Forestry and Fire Protection
CalGreen	California Green Building Standards Code
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
Cal-IPC	California Invasive Plant Council
CAP	Climate Action Plan
CARB	California Air Resources Board
CCCFPD	Contra Costa County Fire Protection District
CCR	California Code of Regulations
CCWD	Contra Costa Water District
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CHRIS	California Historical Resources Information System
CH_4	methane
City	City of Antioch
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CO	Carbon monoxide
CO_2	Carbon dioxide

CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CWA	Clean Water Act
CY	cubic yards
dB	decibel
dB(A)	A-weighted decibel
DOC	California Department of Conservation
DPM	Diesel particulate matter
DPR	Department of Parks and Recreation
DSL	Diesel gas
DTSC	Department of Toxic Substances Control
ECC Subbasin	East Contra Costa Subbasin
EIR	Environmental Impact Report
EMS	emergency medical services
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
FCAA	Federal Clean Air Act
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Acy
Flood Control District	Contra Costa Flood Control and Water Conservation District
FTA	Federal Transit Administration
General Plan	City of Antioch General Plan
General Plan EIR	City of Antioch General Plan Environmental Impact Report
GHG	Greenhouse gas
GIS	Geographic Information System
gpd	gallons per day
gpy	Gallons per year
GSP	Groundwater Sustainability Plan
HCP/NCCP	Habitat Conservation Plan/Natural Community Conservation Plan
HMBP	Hazardous Materials Business Plan
Hz	Hertz
IRWM	Integrated Regional Water Management
ISMND	Initial Study Mitigated Negative Declaration
KBTU	kilo British thermal units
KWhr	Kilowatt-hours

Ldn	Day-Night level
Leq	Equivalent sound level
Lmax	Maximum sound level
Lmin	Minimum sound level
LOS	Level of service
MEI	Maximally exposed individual
mgd	million gallons per day
MLD	most likely descendant
$MTCO_2e$	Metric tons of carbon dioxide equivalent
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
MRZ	Mineral Resource Zone
MTC	Metropolitan Transportation Commission
MWELO	Model Water Efficient Landscape Ordinance
NAHC	Native American Heritage Commission
NOA	Naturally occurring asbestos
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
N_2O	Nitrous oxide
OHP	Office of Historic Preservation
OITC	Outside-Inside Transmission Class
OPR	Governor's Office of Planning and Research
PG&E	Pacific Gas and Electric
$PM_{2.5}$	2.5 microns particulate matter
PM_{10}	10 microns particulate matter
PPV	Peak Particle Velocity
PRC	Public Resources Code
PRE	Premium unleaded gas
proposed project	5200 Lone Tree Way United Pacific Gas Station Project
RCNM	Roadway Construction Noise Model
ROG	reactive organic gas
RTP/SCS	Regional Transportation Plan and Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board

SB	Senate Bill
SF	square feet
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board
SIP	State Implementation Plan
SLF	Sacred Lands File
SR	State Route
Stantec	Stantec Consulting Services Inc
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic air contaminant
TCP	Traffic Control Plan
TCR	Tribal Cultural Resources
TPA	Transit Priority Area
UCMP	University of California Museum of Paleontology
UNL	Regular unleaded gas
USACE	United States Army Corps of Engineers
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UWMP	Urban Water Management Plan
VMT	Vehicle miles travelled
VOC	volatile organic compound
v/c	Volume-to-capacity ratio
WHRS	Wildlife Habitat Relationships System
WMP	Waste Management Plan
WWTP	Wastewater Treatment Plant
$\mu g/m^3$	Micrograms per cubic meter

Initial Study Mitigated Negative Declaration

Project Title:

5200 Lone Tree Way United Pacific Gas Station Project

Project Description:

The 5200 Lone Tree Way United Pacific Gas Station Project involves the construction and operation of a new United Pacific convenience store of 3,200 square feet (sf), attached car wash of 1,125 sf, a fuel canopy with eight fuel dispensers, three underground storage tanks (USTs), and related site improvements and landscaping. The three USTs would include a 20,000 gallon UNL (regular unleaded gas), a 10,000 gallon PRE (premium unleaded gas), and a 10,000 DSL (diesel). The project site is approximately 2.0 acres and is developed with multiple buildings which would all be demolished as part of the construction. Additionally, the proposed project would include the widening of Lone Tree Way to accommodate a 270-foot deceleration lane taper along eastbound Lone Tree Way to the proposed 30-foot driveway.

Project Location:

The proposed project site is located in southeast Antioch, on the southwest corner of Lone Tree Way and Vista Grande Drive, located approximately 0.6 miles west of State Route 4.

Name of Lead Agency:

City of Antioch
Community Development Department, Planning Division
200 H Street
Antioch, CA 94509-1285

Lead Agency, Contact Information:

Kevin Scudero, Senior Planner
Community Development Department
Planning Division
200 H Street
Antioch, CA 94509
Phone: (925) 779-6133
Email: KScudero@antiochca.gov

Determination: The City of Antioch has determined that a) all potentially significant or significant impacts required in the Initial Study Mitigated Negative Declaration have been identified and analyzed; and b) with respect to each significant impact on the environment, either of the following apply: 1) changes or alterations have been required or incorporated into the project that avoid or mitigate the significant impacts to a level of less than significant; or 2) those changes or alterations that are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency. The ISMND and supporting documents are available at the City of Antioch Community Development Department, Planning Division, located at 200 H Street Antioch, California 95688, and online by searching the project name at: https://www.antiochca.gov/community-development-department/planning-division/environmental-documents/

By: Kevin Scudero Date: 2/9/2022

Kevin Scudero, Senior Planner

1.0 INTRODUCTION

United Pacific (applicant) is proposing the 5200 Lone Tree Way United Pacific Gas Station Project (proposed project) in the City of Antioch (City). The proposed project involves the construction and operation of a new United Pacific convenience store of 3,200 sf, attached car wash of 1,125 sf, a fuel canopy with eight fuel dispensers, three underground storage tanks, and related site improvements and landscaping. The three USTs would include a 20,000 gallon UNL (regular unleaded gas), a 10,000 gallon PRE (premium unleaded gas), and a 10,000 DSL (diesel). The project site is approximately 2.0 acres and is developed with multiple buildings which would all be demolished as part of the construction. Additionally, the proposed project would include the widening of Lone Tree Way to accommodate a 270-foot deceleration lane taper along eastbound Lone Tree Way to the proposed 30-foot driveway.

1.1 PROJECT TITLE

5200 Lone Tree Way United Pacific Gas Station Project

1.2 LEAD AGENCY

City of Antioch
Community Development Department, Planning Division
200 H Street
Antioch, CA 94509-1285

1.3 LEAD AGENCY CONTACT

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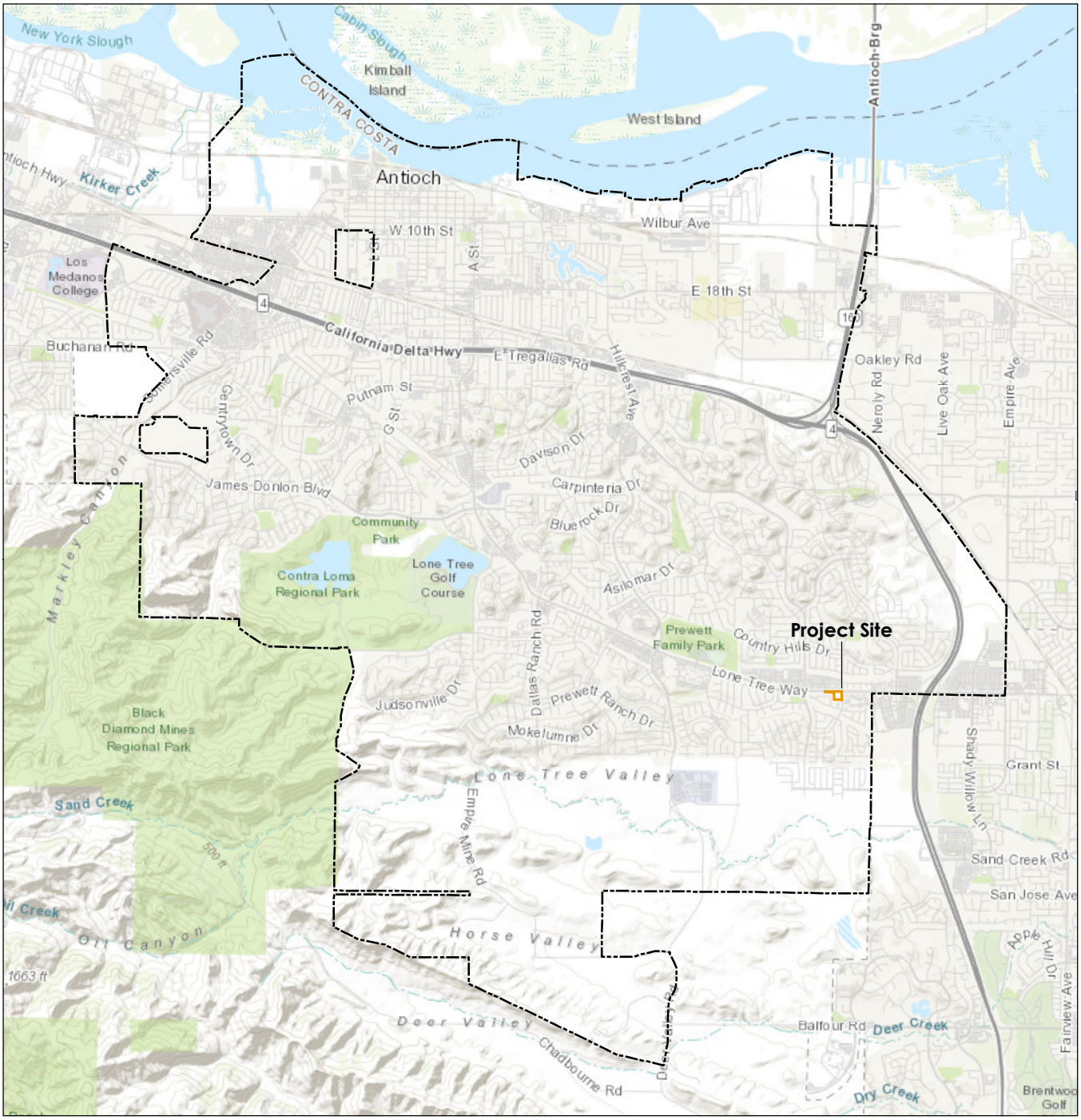
1.4 PURPOSE

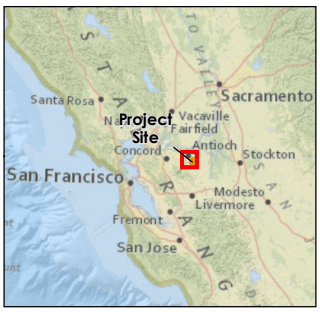
The purpose of the proposed project is to construct and operate a convenience store, attached car wash and a fuel canopy with eight fuel dispensers in the City of Antioch. This Initial Study Mitigated Negative Declaration (ISMND) has been prepared to evaluate the proposed project for potential environmental effects in compliance with the

California Environmental Quality Act (CEQA). The City is the Lead Agency under CEQA and has the principal responsibility for carrying out or approving a project that may have a significant effect on the environment. This ISMND has been prepared in anticipation of determining that all potentially significant impacts from implementing the proposed project can be mitigated to less than significant levels. This document has been prepared in accordance with CEQA, Public Resources Code (PRC) Section 21000 et seq., and the State CEQA Guidelines, California Code of Regulations (CCR), Title 14, Section 15000 et seq.

1.5 PROJECT LOCATION

The proposed project site is located at 5200 Lone Tree Way in the City of Antioch. The proposed project site is located in southeast Antioch, on the southwest corner of Lone Tree Way and Vista Grande Drive. The proposed project would be located on Assessor's Parcel Number (APN) 056-270-059, located approximately 0.6 miles west of State Route (SR) -4. Figures 1-1 and 1-2 show the regional location and project site location.





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- City of Antioch

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Stantec

Project Location

Antioch, CA

Client/Project

City of Antioch
5200 Lone Tree Way United Pacific Gas Station Project
ISMND

Title

Regional Location

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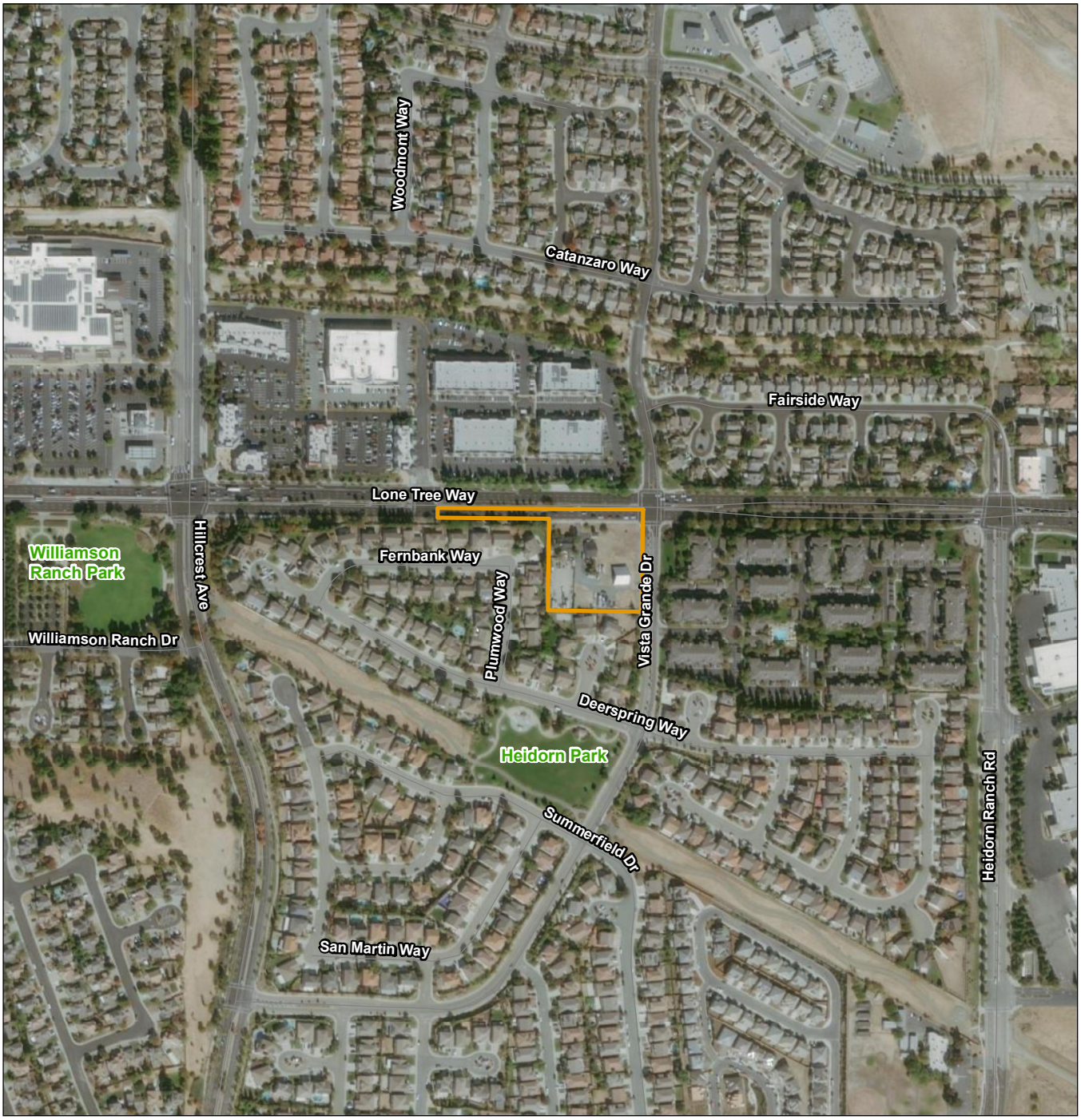

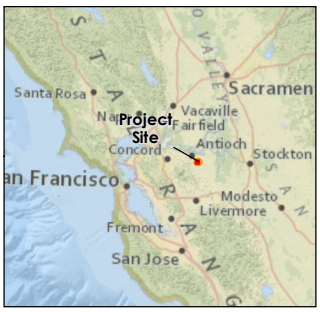

Legend

Project Site

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(At original document size of 8.5x11)

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Stantec

Project Location

Antioch, CA

Client/Project

City of Antioch
5200 Lone Tree Way United Pacific Gas Station Project
ISMND

Title

Project Site Location

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1.6 EXISTING SITE CONDITIONS

The project site is in southeast Antioch and is currently occupied by a single-story residential structure, a single-story barn structure, a single-story three car garage structure, two seatrain storage containers, two small sheds, and a domestic water tower structure. The rest of the project site consists of land utilized for vehicle and equipment storage for a paving company.

1.7 SUMMARY OF PROJECT

The proposed project consists of a new United Pacific convenience store of 3,200 sf, attached car wash of 1,125 sf, a fuel canopy with eight fuel dispensers, three underground storage tanks, and related site improvements and landscaping on an approximately 2.0-acre lot. The proposed project proposes right-in/right-out ingress and egress from Lone Tree Way and Vista Grande Drive. The proposed project would provide nineteen parking stalls and landscaping which would consist of drought-tolerant species, including shade canopy trees. The car wash drive lane would provide adequate stacking away from areas of ingress/egress from public right-of-way. Additionally, the proposed project would include the widening of Lone Tree Way to accommodate a 270-foot deceleration lane taper along eastbound Lone Tree Way to the proposed 30-foot driveway.

1.8 GENERAL PLAN DESIGNATION AND ZONING

General Plan Land Use Designations

The City of Antioch General Plan (General Plan) designates the project site as Office. The Applicant is requesting an amendment to the land use designation for a new designation of Convenience Commercial to allow for commercial uses.

The Office land use designation is defined as follows:

> *"The primary purpose of areas designated as Office on the General Plan land use map is to provide areas for the establishment of park-like working environments for corporate, professional, and general administrative businesses; commercial services needed to support major business development; and retail facilities supporting office-based business operations. The Office designation is intended to encourage the concentration of office uses near centers of commercial activity within the City, and to discourage isolated office buildings. Office development may include low-rise garden office arrangements, or mind-rise structures, as appropriate to the project's specific location."*

The Convenience Commercial land use designation is defined as follows:

> *"This designation is used to include small-scale retail and service uses on small commercial lots, generally ranging up to one to four acres in size. Total gross leasable area within Convenience Commercial areas typically ranges from about 10,000 to 40,000 square feet. Typical uses may include convenience markets, limited personal services, service stations, and commercial services. This designation is often located on arterial or collector roadway intersections in otherwise residential neighborhoods and thus, required that adequate surface parking be included to ensure against any potential circulation difficulties affecting adjacent residences. Design features need to be included in these centers to ensure that convenience commercial developments are visually compatible with and complementary to adjacent and nearby residential and other less intensive uses. The type and function of uses in convenience commercial areas are generally neighborhood serving and need to be carefully examined to ensure compatibility with nearby uses. This land use designation may also be applied to small freestanding commercial uses in the older portions of Antioch."*

Zoning

The project site is zoned P-D: Planned Development District. The applicant is proposing a rezone to a new planned development district. The P-D zoning is defined as follows:

> *"The P-D: Planned Development district accommodates various types of development, such as neighborhood and district shopping centers, professional and administrative offices multiple housing developments, single-family residential developments, commercial service centers, and industrial parks, or any other use or combination of uses which are appropriately a part of a planned development. This district is intended to enable and encourage flexibility in the design and development of land so as to promote its most appropriate use; to allow diversification in the relationship of various uses, structure, and space; to facilitate neighborhoods through the preservation of natural green spaces; and to counteract the effects of urban congestion and monotony. The minimum area required for the establishment of a residential Planned Development shall be three contiguous acres of land and the minimum area for an exclusively non-residential Planned Development shall be one contiguous acre of land."*

1.9 SURROUNDING LAND USES AND SETTING

The area surrounding the project site consists of commercial, office and residential uses. The project site is on the southwest corner of Lone Tree Way and Vista Grande Drive. Land use across Lone Tree Way, north of the project site, consists of office and commercial uses. Land use across Vista Grande Drive, to the east of the site, consists of multi-family residential apartments. The project site is bordered by one- to two-story single family residential homes to the south and west. State Route 4 is located approximately 0.6 miles east of the project site.

1.10 CEQA AND PUBLIC AGENCY REVIEW

CEQA requires that project proponents disclose the significant impacts to the environment from proposed development projects. The intent of CEQA is to foster good planning and to consider environmental issues during the planning process. The City is the Lead Agency under CEQA for the preparation of this ISMND. The CEQA Guidelines (Section 21067) define the Lead Agency as: “the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment.” Approval of the proposed project is considered a public agency discretionary action, and therefore the proposed project is subject to compliance with CEQA. The City has directed the preparation of an analysis to comply with CEQA.

Stantec Consulting Services Inc. (Stantec) has prepared this document at the direction of the City. The purpose of this document is to disclose the environmental consequences of implementing the proposed project to decision-makers and the public. The public, City residents, and other local and State resource agencies will be given the opportunity to review and comment on this document during a 30-day public-review period. Comments received during the review period will be considered by the City prior to certification of this ISMND and project approval.

The public review period will commence on February 15, 2022 and last for 30 days, ending on March 16, 2022, pursuant to CEQA Guidelines Section 15105. If you wish to send written comments (including via e-mail), they must be received by 5 p.m. on March 16, 2022. Written comments should be addressed to:

Kevin Scudero, Senior Planner
Community Development Department
Planning Division
200 H Street
Antioch, California 94509

Phone: (925) 779-6133
Email: KScudero@antiochca.gov

The ISMND and supporting documents are available at the City of Antioch, Community Development Department, located at 200 H Street, Antioch, California 94509, and online at the following URL: https://www.antiochca.gov/community-development-department/planning-division/environmental-documents/

1.11 REQUIRED PERMITS AND APPROVALS

This IS would be used by the City as the Lead Agency to evaluate the potential environmental impacts of the proposed project. The applicant is requesting the following project approvals/actions:

- General Plan Amendment
- Rezone
- Final Development Plan Approval
- Use Permit
- Variance Approval
- Design Review

Other ministerial approvals such as building-related permits and Encroachment Permits are also anticipated. Additionally, all work related to improvements and project grading would be subject to the City of Antioch Municipal Code, including the Zoning Ordinance, Building Code, and Fire Code.

1.12 SCOPE OF THIS INITIAL STUDY

As the Lead Agency under CEQA, the City is responsible for compliance with the environmental review process prescribed by the CEQA Guidelines. This ISMND focuses on the environmental issues identified as potentially significant in the CEQA checklist and by the CEQA Guidelines. This ISMND evaluates the potentially significant effects on the environment and identifies mitigation measures to mitigate the effects to a point where clearly no significant effect on the environment would occur. A complete Project Description is included in Section 2.0. Evaluations of the CEQA Appendix G checklist questions are analyzed in Section 3.0 and references are included in Section 4.0. The following technical studies were conducted and/or reviewed in preparing this ISMND: air

quality/greenhouse gases assessment, Health Risk Assessment, biological resources study, cultural resources study, energy assessment, noise study, and a transportation analysis. These studies/supporting data are included as appendices to this ISMND and referred to where appropriate throughout this document.

1.13 DOCUMENT ORGANIZATION

This ISMND is organized as follows:

Section 1.0: Introduction. This section introduces the proposed project and describes the purpose and organization of this document.

Section 2.0: Project Description. This section describes the purpose and need for the proposed project, identifies project objectives, and provides a detailed description of the project.

Section 3.0: Environmental Checklist and Environmental Evaluation. This section presents an analysis of the range of environmental issues identified in the CEQA Environmental Checklist and determines for each topic whether the proposed project would result in no impact, a less than significant impact, a less than significant impact with mitigation incorporated, or a potentially significant impact. If impacts are determined to be potentially significant after incorporation of applicable mitigation measures, an Environmental Impact Report would be required. For this project, however, mitigation measures have been incorporated, where needed, that would reduce all potentially significant impacts to a less than significant level.

Section 4.0: References. This section lists the references used in preparing this ISMND.

Section 5.0: List of Preparers. This section identifies the report preparers.

2.0 PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW

The proposed project includes the demolition of the existing structures onsite and redevelopment of the site to accommodate a gas station, convenience store, car wash. The proposed project also includes widening of Lone Tree Way and ancillary improvements. See Figure 2-1 for layout of the proposed project.

Gas Station

The proposed gas station would include the construction of a fuel canopy with eight fuel dispensers (16 fuel positions total) and three underground storage tanks. The proposed gas station would be located in the northeastern portion of the project site. The fuel canopy area would be 127 feet x 48 feet or 6,096 sf. The fueling pumps would dispense both unleaded and diesel fuels and would allow for the simultaneous fueling of SUVs, full size pick-up trucks, and passenger vehicles. The fuel dispensers would be served by three underground storage tanks to be installed north of the fuel-dispensing canopy. The three USTs would include a 20,000 gallon UNL, a 10,000 gallon PRE, and a 10,000 DSL. The fuel dispensing canopy would be 19 feet to the top of the ACM, and 20 feet 8 inches to the top of the Mission tile roof. Materials of the fueling canopy are proposed to consist of aluminum composite material (ACM), finished with a white ACM fascia and blue ACM canopy facia. The fueling canopy would be illuminated by LED lights. See Figure 2-2 for elevation drawing of the gas station canopy.

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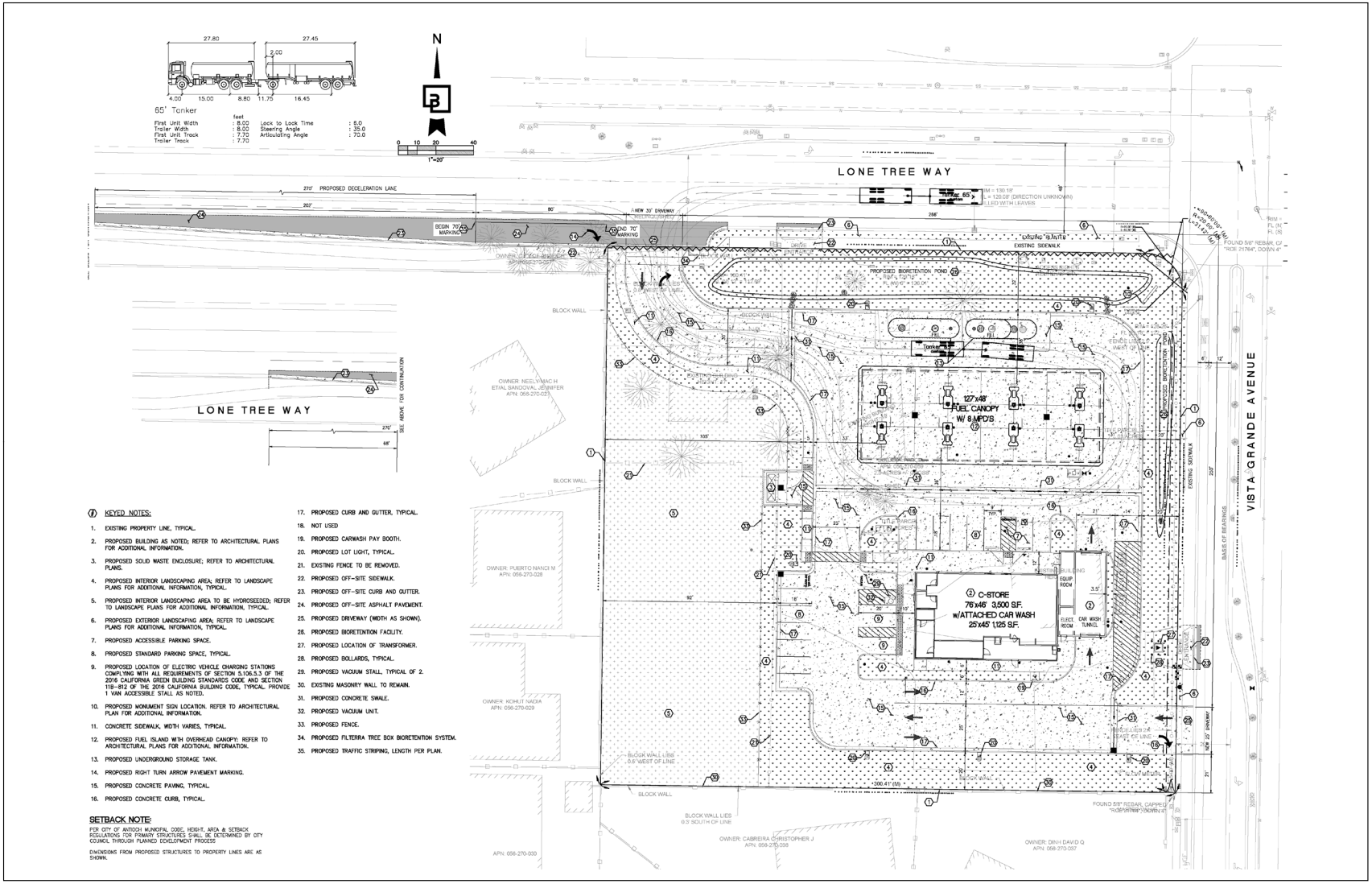

Source: Barghausen Consulting Engineers, Inc. April 2021

Project Location
Antioch, California

Client/Project
City of Antioch
5200 Lone Tree Way United Pacific Gas Station Project

Figure No.
2-1

Title
Project Site Plan

Stantec

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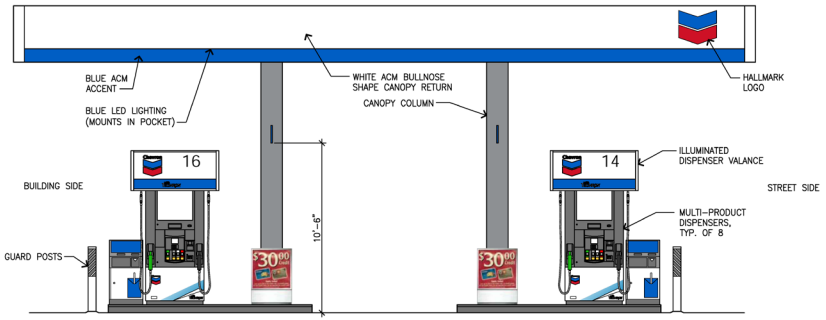
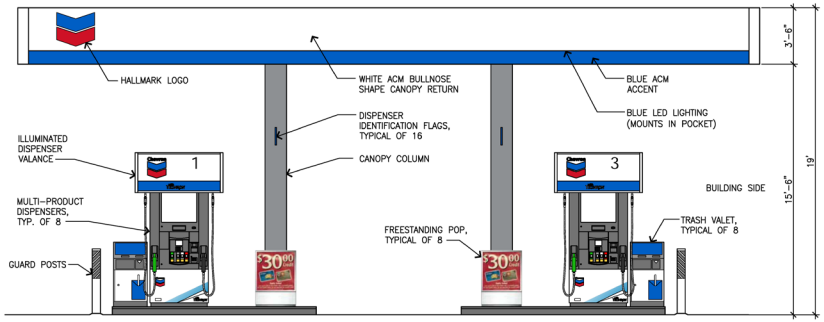


B EAST CANOPY ELEVATION- FACING VISTA GRANDE AVENUE
SCALE: 1/4"=1'-0"



C WEST CANOPY ELEVATION
SCALE: 1/4"=1'-0"

Source: Barghausen Consulting Engineers, Inc. April 2021

Project Location
Antioch, California

Client/Project
City of Antioch
5200 Lone Tree Way United Pacific Gas Station Project

Figure No.
2-2

Title
Gas Station Elevation

Stantec

Convenience Store

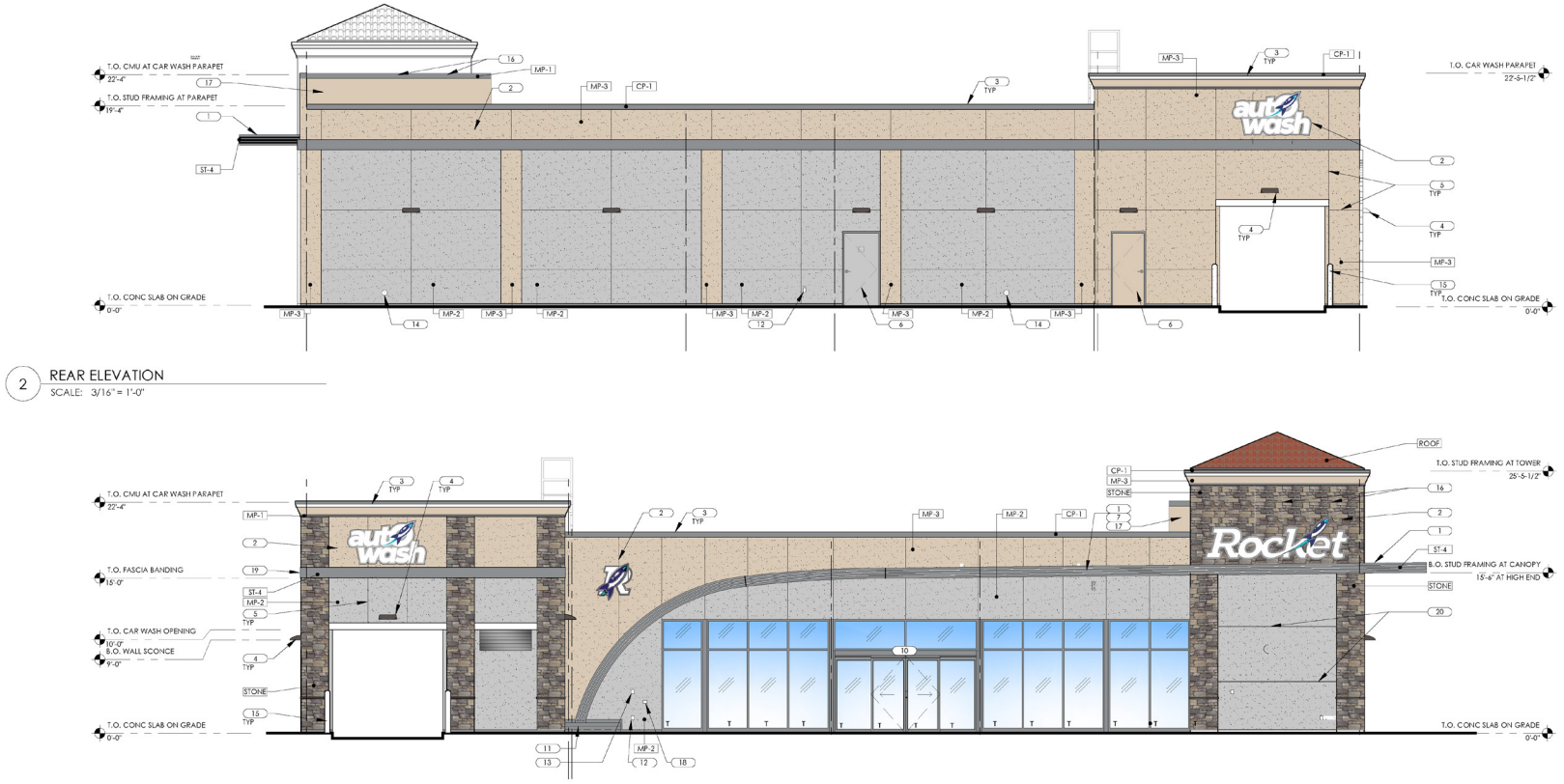
The proposed convenience store would be located in the southeastern portion of the project site and would be approximately 3,500 sf. There would be 19 parking spaces provided located along the convenience store's frontage inclusive of 1 accessible parking space. The applicant is proposing that the convenience store be open 24 hours and sell beer and wine. In addition, the convenience store would sell fresh and re-packaged food and beverage items, sundry items, and automobile accessories (e.g., air fresheners, cell phone accessories, anti-freeze, motor oil, etc.).

The convenience store building would be 22 feet 4 inches to the top of the parapet, and 25 feet 5 inches to the top of the c-store tower. The architecture of the proposed building features clean lines and varied parapet heights which materials including stucco, stone and a mission tile roof. Roof top equipment would be screened by elevated and variable height parapets and the tower would be finished with stone veneer. The front elevation faces the interior of the project site towards the gas station canopy and Lone Tree Way. The front elevation contains the primary entrance to the store and features large storefront windows. See Figure 2-3 for elevation drawing of the convenience store and car wash.

Car Wash

The self-service, drive-thru car wash would be located on the eastern side of the convenience store, in the southeastern portion of the project site and would have the same elevation as the convenience store. The car wash would be 1,125 sf and would be accessed via a driveway on the south side of the convenience store. The car wash would use a water reclamation system to ensure the most up-to-date recycling and waste management techniques are used.

The entirety of any car wash associated water would be routed through the project's reclaim tanks to be recycled for the associated system. The tank system is approximately 90 percent efficient, meaning approximately 10 percent of car wash associated water would not be recycles, and when the system is overwhelmed, would be conveyed through the sanitary sewer system.



Source: Barghausen Consulting Engineers, Inc. April 2021

Project Location
Antioch, California

Client/Project
City of Antioch
5200 Lone Tree Way United Pacific Gas Station Project

Figure No.
2-3

Title
Convenience Store and Car Wash Elevation

Stantec

Lone Tree Way Widening

The project proposes right-in/right-out ingress and egress from Lone Tree Way and Vista Grande Drive. The proposed driveway location along Lone Tree Way and curved driveway into the site was conceptually approved by the Public Works Director John Samuelson on November 30, 2020. A 270-foot deceleration lane taper along eastbound Lone Tree Way to the proposed 30-foot driveway, with right turn marking at the last 70 feet of the deceleration lane is required by the City.

Ancillary Improvements

Other onsite improvements include landscaping, lighting, sidewalk, gutter, driveway and frontage improvements, and associated infrastructure improvement. Utility infrastructure improvements are described below in Section 2.1.4, Utility Infrastructure. New offsite curb and gutter and asphalt paving is proposed for the new deceleration lane along eastbound Lone Tree Way. One existing driveway at Lone Tree Way and one existing driveway at Vista Grande Drive is proposed to be reconstructed to standard curb, gutter, and sidewalk.

2.1.1 Site Operation

The gas station, convenience store, and car wash are proposed to be operational 24 hours a day, seven days a week.

Operation of the fuel station is anticipated to require daily delivery of fuel that would typically occur outside of peak hour traffic (in the early morning, late evening, or mid-day). Fuel delivery takes approximately 30 minutes. Truck idling would be limited to less than 5 minutes. The delivery truck would align parallel to the underground storage tanks to avoid conflict with fuel dispensing activity and not interfere with vehicle queuing. Anticipated throughput of the gasoline station is expected to be 8,000,000 gallons annually.

The convenience store would employ 12 to 15 employees working shifts of 2 to 3 employees at a time.

2.1.2 Access and Parking

Access to and from the project site would be from two new right-in/right-out driveways. One would be located at the northwest corner of the property on Lone Tree Way and would provide a 30-foot-wide driveway. The other would be located at the southeast corner of the property on Vista Grande Drive and would provide a 25-foot-wide

driveway. All other existing driveways are to be removed and is proposed to be reconstructed to standard curb, gutter, and sidewalk. A 270-foot deceleration lane taper along eastbound Lone Tree Way to the proposed 30-foot driveway, with right turn markings at the last 70 feet of the deceleration lane is required by the City. New offsite curb, gutter, and asphalt paving is proposed for this lane.

Pedestrians may access the site via the sidewalk at the west side of the driveway along Lone Tree Way. Fuel delivery trucks would enter the site from eastbound Lone Tree Way and exit from Lone Tree Way. 13 parking stalls are required and a total of 19 parking spaces would include one ADA compliant van accessible stall. The proposed project would provide conduits for future EV charging at two stalls.

2.1.3 Landscaping and Lighting

The proposed project is planning on providing landscaping throughout the project site, along the site frontages and interior landscaping areas (Figure 2-4). All proposed landscaping would be irrigated with a water-wise automatic irrigation system and the irrigation systems would meet Model Water Efficient Landscape Ordinance (MWELO) standards. One-third of the project site would remain undeveloped at this time, but the area would be covered with erosion control hydroseed to maintain the area. The proposed project would involve the removal of some existing trees onsite. The proposed planting palette consists of low water use species.

The proposed project would also create bioretention areas along the northern and eastern border of the project site, adjacent to Lone Tree Way and Vista Grande Drive. The 3,938 sf bioretention areas would treat water before it is released into the City's sewer line.

The proposed project would provide lighting for security and safety throughout the project site. The project site lighting would range from 22 watts to 130 watts depending on the location of the lights. The proposed project would provide adequate lighting along the driveways, under the fuel canopy and outside the convenience store and car wash. Lighting poles installed at the project site would have a maximum pole height of 22 feet and base height of 3 feet. Lighting provided onsite would be designed to be in compliance with the City's lighting standards. Light fixtures would be shielded to prevent spill over property lines, with heightened sensitivity at the residential-facing property lines.

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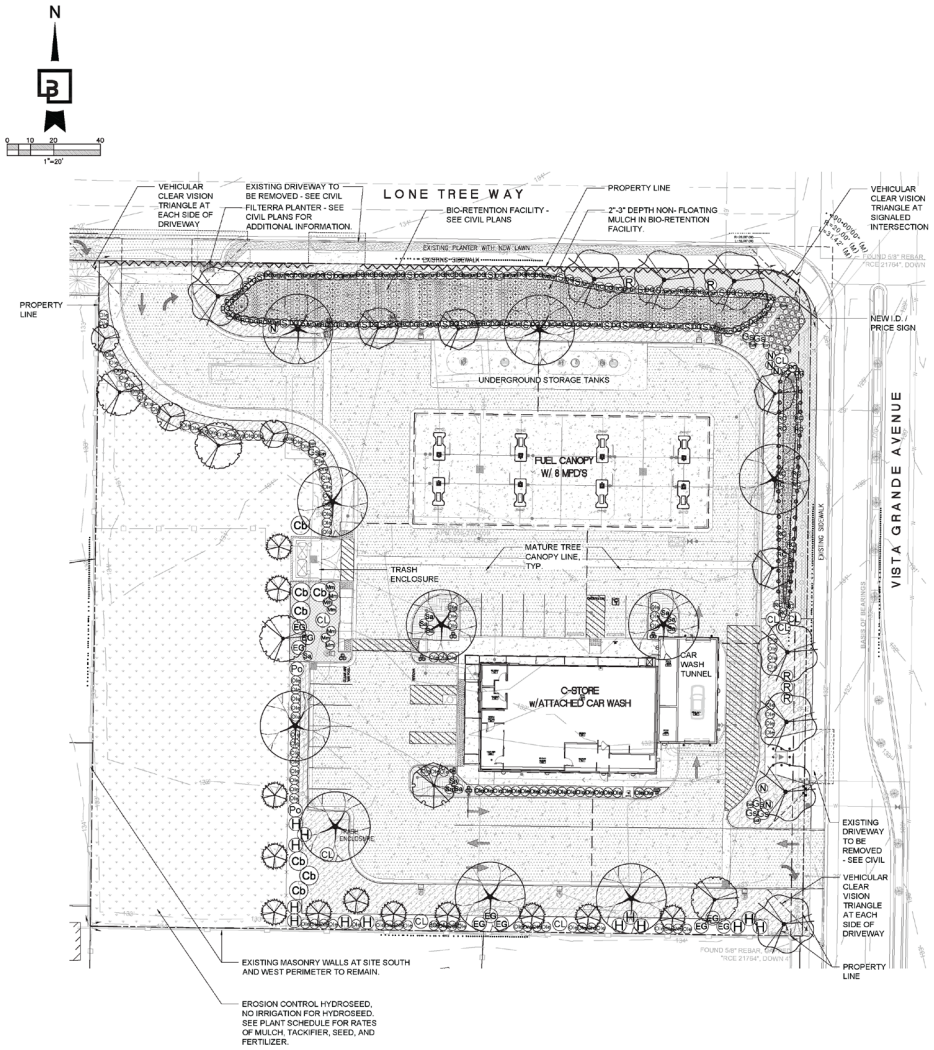

Source: Barghausen Consulting Engineers, Inc. April 2021

Project Location
Antioch, California

Client/Project
City of Antioch
5200 Lone Tree Way United Pacific Gas Station Project

Figure No.
2-4

Title
Landscape Plan

Stantec

2.1.4 Utility Infrastructure

Water Supply

The proposed project would require the installation of onsite utilities and would connect to the existing utility lines located on Vista Grande Drive. The project would install a proposed 2-inch domestic water main and 1 inch irrigation water main and would connect to the existing 12-inch water main on Vista Grande Drive (Figure 2-5).

The proposed project would install one new fire hydrant, at the southeast corner of the project site along Vista Grande Drive, to serve the project site. Given the service-oriented use, the proposed project would have a number of water consuming uses onsite such as restrooms, fill water, and the previously identified car wash. The estimated annual water usage for the proposed project is 963,965 gallons per year (gpy), or 2,461 gallons per day (gpd).

Wastewater

The proposed project is proposing to install a 6-inch sanitary sewer lateral which would connect to the existing 36 inch main located at the Lone Tree Way and Vista Grande Drive intersection. Total annual wastewater estimated for the proposed project is 691,310 gpy, or 1,894 gpd.

The entirety of any car wash associated water would be routed through the project's reclaim tanks to be recycled for the associated system. The tank system is approximately 90 percent efficient, meaning approximately 10 percent of car wash associated water would not be recycled and when the system is overwhelmed, would be conveyed through the sanitary sewer system.

Storm Drainage

The proposed project site would have a post-project impervious surface area of 53,342 sf. The proposed project would create two bioretention facilities, one 3,548 sf facility along the northern boundary of the project site along Lone Tree Way and one 384 sf facility along the eastern boundary of the project site along Vista Grande Drive.

The proposed project would use storm drain catch basins, associated piping, and down spout connections to storm drain pipes to route runoff to bioretention areas. The proposed project would install an 8-inch storm drainpipe which would take water from catch basins installed around the project site and deposit it in the bioretention areas to be treated before it is released into the City's storm drainage system located along Lone

Tree Way and Vista Grande Drive. The proposed project would also include self-retaining drainage management areas which would be provided through landscaped areas.

Solid Waste

The proposed project would construct a new trash enclosure that would be located on the west side of the project site. The project site would be served by Republic Services which provides solid waste collection, disposal, recycling and yard waste serviced to the City. Solid waste from the project site would be taken to the Contra Costa Transfer and Recovery Station located in Martinez and then would be transferred to the Keller Canyon Landfill in Pittsburg.

Electricity and Gas

Pacific Gas and Electric Company (PG&E) provides electricity and natural gas service to the project site. Electrical and gas connections would be made with existing facilities located near the project site. The project anticipates connecting to existing dry utility services located at the back of the sidewalk near the intersection curb ramp.

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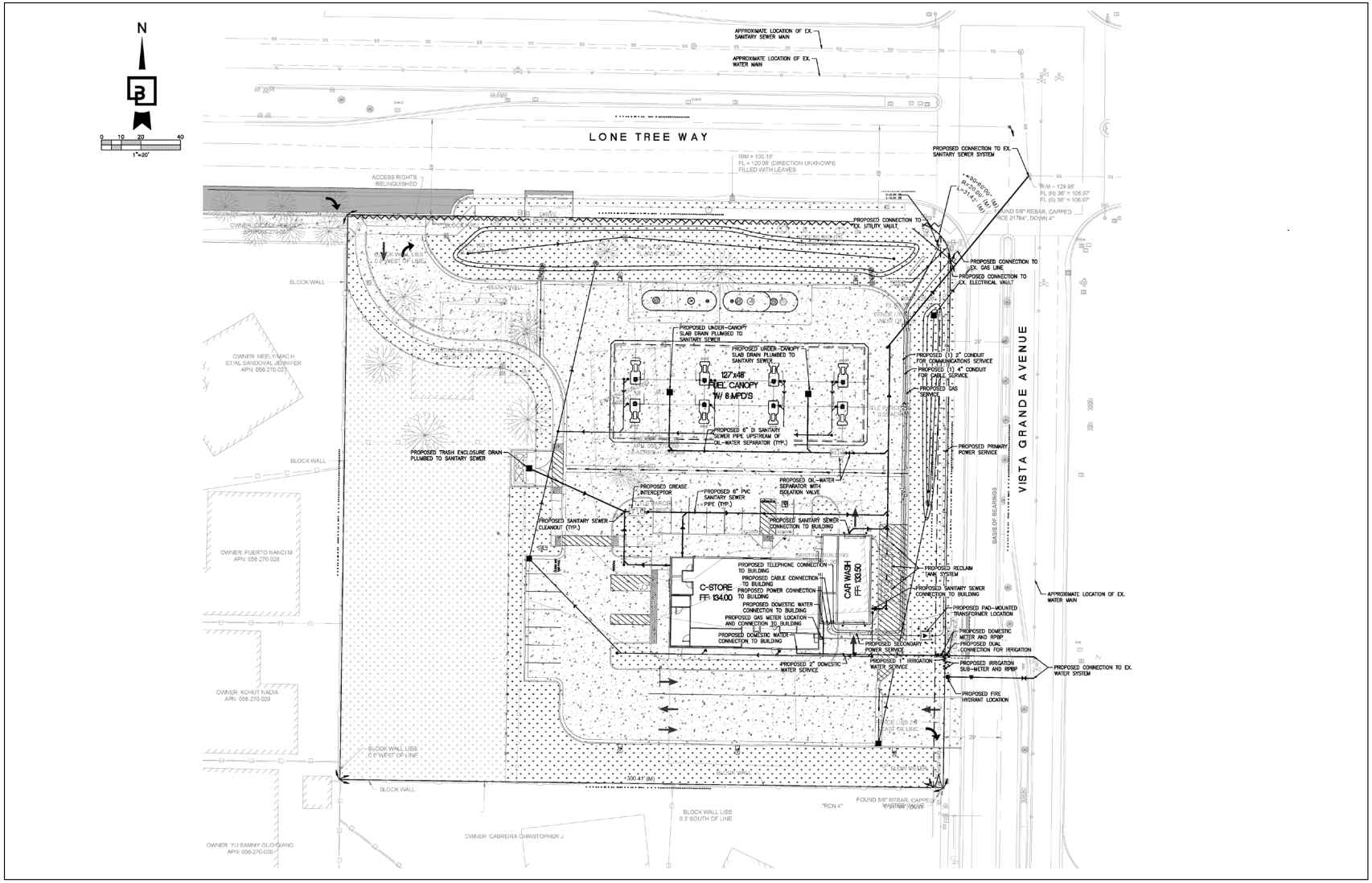

Source: Barghausen Consulting Engineers, Inc. April 2021

Project Location
Antioch, California

Client/Project
City of Antioch
5200 Lone Tree Way United Pacific Gas Station Project

Figure No.
2-5

Title
Utility Plan

Stantec

2.2 PROJECT CONSTRUCTION

2.2.1 Construction Schedule

Construction is anticipated to occur from June 2022 through January 2023 (approximately eight months). The proposed project would include a demolition phase to demolish any existing structures onsite, and onsite and offsite work would occur concurrent after the demolition phase. Construction of the proposed project would occur during normal business house and no nighttime work is proposed. The proposed construction would require 30 workers during peak construction and would require an average of 18 workers at any given time. It is anticipated that the construction workforce would be available in nearby areas.

2.2.2 Construction Access and Staging Areas

Construction crews would access the project site from Lone Tree Way. Construction of the proposed project may require potential lane closures along Lone Tree Way for the construction of a turn lane into the project site. A Traffic Control Plan would be prepared as part of the proposed project.

Construction staging areas would be located on-site and would not require any offsite storage of construction equipment or materials. The staging area would be located in the open space located on the west side of the project site and would be used to store construction equipment, vehicles, and materials; for construction preparation activities; and for stockpiling of soils.

2.2.3 Construction Equipment

Construction equipment anticipated on-site would include, but not be limited to, scrapers, motor graders, loaders, excavators, compactors, dump trucks, concrete trucks, concrete pumps, backhoes, boom lifts, scissor lifts and forklifts.

2.2.4 Demolition and Grading

The total area of disturbance at the project site is anticipated to be 2.15 acres. Prior to construction, the proposed project would demolish all existing structures located on the project site. The proposed project would create a total of 53,342 sf of impervious surface after construction and 41,933 sf of pervious surface. The proposed project is anticipated to cut and regrade approximately 630 cubic yards (CY) of on-site materials. The installation of USTs would require excavation of approximately 8 feet below existing

grade. Export of materials from the project site are not anticipated and the proposed construction is anticipated to import approximately 640 CY of material onsite.

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3.0 ENVIRONMENTAL CHECKLIST AND ENVIRONMENTAL EVALUATION

The environmental factors checked below would be potentially affected by this project, involving at least one impact that requires mitigation to reduce the impact from "Potentially Significant" to "Less Than Significant" as indicated by the checklist on the following pages.

- ☐ Aesthetics
- ☐ Agriculture and Forestry Resources
- ☒ Air Quality
- ☒ Biological Resources
- ☒ Cultural Resources
- ☐ Energy
- ☒ Geology and Soils
- ☐ Greenhouse Gases
- ☒ Hazards and Hazardous Materials
- ☒ Hydrology and Water Quality
- ☐ Land Use and Planning
- ☐ Mineral Resources
- ☒ Noise
- ☐ Population and Housing
- ☐ Public Services
- ☐ Recreation
- ☐ Transportation
- ☒ Tribal Cultural Resources
- ☐ Utilities and Service Systems
- ☐ Wildfire
- ☒ Mandatory Findings of Significance

Evaluation of Environmental Impacts

This section presents the environmental checklist form found in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the project. A discussion follows each environmental issue identified in the checklist. Included in each discussion are project-specific mitigation measures, if needed.

For the checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant and for which mitigation has not been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Less Than Significant with Mitigation Incorporated: This designation applies when applicable and feasible mitigation measures have reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact" and, pursuant to Section 21155.2 of the PRC, those measures are incorporated into the ISMND.

Less Than Significant Impact: Any impact that would not be considered significant under CEQA, relative to existing standards.

No Impact: The proposed project would have no impact. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources that a Lead Agency cites following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

3.1 AESTHETICS

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 buildings within a State scenic highway?	☐	☐	☐	☒
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?	☐	☐	☒	☐

3.1.1 Environmental Setting

Visual Character of the Project Site

The proposed project is located on an approximately 2-acre parcel that is currently developed with six buildings which includes a single-family residence, two barns, two sheds, and a tank house. The existing buildings on site have a maximum height of 26 feet. The project site is located in Southeast Antioch, on the southwest corner of Lone Tree Way and Vista Grande Drive and located approximately 0.6 miles west of SR-4. The area surrounding the project site consists of commercial, office and residential uses. The project site is surrounded by office and commercial uses to the north and single-family and multi-family residential developments to the east, south and west. The General Plan identifies Lone Tree Way as a view corridor providing north and south views as well as east and west views.

Scenic Resources and Corridors

Most of the City's scenic resources are associated with open space and natural resources. Views of Mt. Diablo, the ridgelines, and the San Joaquin River are important resources to the City. Some historic and panoramic views of Mt. Diablo and the ridgelines that were once visible from roads and neighborhoods located at a distance from these features have now been obstructed due to new developments south of State

Route 4, specifically those built on or near the ridgelines (City of Antioch 2003a). The General Plan designates landmarks within the City because they provide prominent visual features and focal points within the City. Designated landmarks within the City include the San Joaquin River, Mount Diablo, Antioch Bridge, and other historical buildings described in the General Plan. The General Plan designates important view corridors as public spaces. Natural ridgelines and landmarks, such as Mount Diablo and distant hills, local ridgelines, the San Joaquin River, and other water bodies, are also considered view corridors. The City does not contain any officially designated scenic corridors or highways.

Light and Glare Conditions

The project site is vacant, and therefore, no substantial light and glare sources exist onsite. Nighttime lighting immediately surrounding the project site consists of street lighting, parking lot lighting, vehicle headlights on the adjacent streets and highways, and exterior lighting associated with the nearby developments. There are no electrical signs, billboards, or flashing or oscillating light sources in the project site.

3.1.2 Methodology

Analysis of the proposed project's visual impacts is based on an evaluation of the changes to the existing visual resources that would result from implementation of the proposed project. In determining the extent and implications of the visual changes, consideration was given to the existing visual quality of the affected environment; specific changes to the visual character and quality of the affected environment resulting from implementation of the proposed project; the extent to which the affected environment contains places or features that provide unique visual experiences or that have been designated in plans and policies for protection or special consideration; and the sensitivity of viewers, their activities, and the extent to which these activities are related to the aesthetic qualities that would be affected by implementation of the proposed project. The existing setting was based on a review of documents pertaining to the project site including the General Plan.

3.1.3 Environmental Impact Analysis

This section discusses the potential impacts on aesthetics associated with the proposed project and provides mitigation measures where necessary.

Impact AES-1 Have a substantial adverse effect on a scenic vista?

Impact Analysis

The General Plan indicates that views of Mt. Diablo, the ridgelines, and the San Joaquin River are important scenic resources to the City. The project site is within an urban area that mostly consists of residential developments. Views of scenic resources from the project site are obscured due to existing developments and vegetation. The proposed project would construct a gas station and convenience store with an attached car wash and would have a maximum building height of approximately 25 feet and 5 inches to the top of the convenience store tower. Additionally, the proposed project would install light fixtures which would have a maximum pole height of 22 feet and maximum base height of 3 feet. Given the amount of separation between the project site and these important scenic resources, the development of the proposed project would not substantially alter views of any scenic vistas. As such, the impacts on scenic vistas would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AES-2 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

Impact Analysis

There are no scenic resources designated by the City on the project site. The project site is vacant and does not contain vegetation, rock outcroppings, or historic buildings that are identified as scenic resources by the General Plan. There are no State-designated scenic highways in the City. However, SR-4 located west of the project site is listed as an eligible State scenic highway, but the segment has not been officially designated (Caltrans 2021). Therefore, the proposed project would have no impact on scenic resources within a State scenic highway.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact AES-3	**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?**

Impact Analysis
The project site is in an urbanized area, and therefore, this analysis focuses on whether the proposed project would conflict with applicable zoning and other regulations governing scenic quality.

The City's General Plan designates the project site as Office, and the City's Zoning Ordinance designates the project site as P-D: Planned Development District. The proposed project includes a General Plan Amendment and Planned Development Rezone to allow for the proposed project uses. The Project is proposing to redesignate the project site as Convenience Commercial and rezone to a new P-D District. The proposed project would be consistent with the proposed General Plan land use designation and new project specific Planned Development zoning district.

The project design would be reviewed during the City's design review process in accordance with Section 9-5.2607 of the Antioch Code of Ordinances. As such, the proposed project would not conflict with any applicable zoning or other regulations governing scenic quality, and impacts would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact AES-4 Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Impact Analysis

The project site contains several existing buildings such as an old barn and a residence which contains onsite source of light or glare. Sources of light and glare also exist from surrounding developments and roadways consisting of exterior building lighting, parking lot lighting, street lighting and headlights from vehicles driving on surrounding roadways.

The proposed project would include new sources of nighttime lighting at the project site. The Project is proposing 24-hour operation of the convenience store and lighting would be installed as a security and safety feature. All lighting in the project area would be arranged to provide safety and security for visitors but prevent direct glare of illumination onto adjacent units. All site entrances would be visible from a public street and well lighted. As required by the City, all developments must provide adequate lighting and illumination of parking areas and is subject to design review. Lighting fixtures shall not shine directly onto an adjacent street or property. Compliance with the City's requirements would ensure that light and glare impacts associated with the proposed project would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

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3.2 AGRICULTURE AND FORESTRY RESOURCES

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b)	Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c)	Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d)	Result in the loss of forestland or conversion of forestland to non-forest use?	☐	☐	☐	☒
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?	☐	☐	☐	☒

3.2.1 Environmental Setting

Antioch is located in an area of Contra Costa County that has traditionally contained areas of land used for grazing, orchards, field and row crops. The City has approximately 5,600 acres of grazing and former agricultural lands (City of Antioch 2003a). According to the City of Antioch General Plan Environmental Impact Report (General Plan EIR), there are agricultural lands located north of SR-4 as well as in the southern portion of the City.

The California Department of Conservation (DOC) Important Farmland Finder Map and the General Plan EIR classifies the project site as Urban and Built-Up Land (DOC 2016, City of Antioch 2003b). However, the City's General Plan designates the project site as Office, and the City's Zoning Ordinance designates the project site as P-D: Planned Development District. The proposed project includes a General Plan Amendment and Planned Development Rezone to develop the land for commercial uses. While the

General Plan land use designation would change following approval of the proposed project, it would continue to not be used for agricultural or forestry purposes.

3.2.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the General Plan, General Plan EIR, the DOC Important Farmland Map, and Contra Costa County 2016 Agricultural Preserves Map.

3.2.3 Environmental Impact Analysis

This section discusses potential impacts on agriculture and forestry resources associated with the proposed project and provides mitigation measures where necessary.

Impact AG-1	**Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?**

Impact Analysis
The project site is designated as Urban and Built-Up Land by the FMMP. Therefore, the proposed project would not result in the conversion of prime, unique, or farmland of Statewide importance and no impact would occur.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact AG-2	**Conflict with existing zoning for agricultural use or a Williamson Act contract?**

Impact Analysis
The project site is within the Planned Development Zoning District, which allows for a wide range of residential, commercial and industrial land uses. This district

accommodates various types of development, such as neighborhood and district shopping centers, professional and administrative offices, multiple housing developments, single-family residential developments, commercial service centers, and industrial parks, or any other use or combination of uses which are appropriately a part of a planned development. The project site is not zoned for agricultural use and is currently not under a Williamson Act contract. Therefore, no impact would occur.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact AG-3	**Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104[g])?**

Impact Analysis
The project site does not contain forestland (as defined in Public Resources Code [PRC] Section 12220[g]), or timberland (as defined by PRC Section 4526). Furthermore, the project site is not zoned Timberland Production (as defined by Government Code section 51104[g]). The project site is zoned as Planned Development District which allows for a wide range of residential, commercial and industrial land uses. The site would not require rezoning of forestland or timberland production. As such, the proposed project would not convert forestland or timberland to a non-agricultural use, and no impact would occur.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact AG-4	**Result in the loss of forestland or conversion of forestland to non-forest use?**

Impact Analysis
The project site is designated Office by the General Plan and is located within a Planned Development Zoning District. There are no forestland resources on the project site. Therefore, the proposed project would not result in the loss of forestland or conversion of forestland to non-forest use. No impact would occur.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact AG-5	**Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?**

Impact Analysis
The project site is classified as Urban and Built-Up Land by the DOC, surrounded by urban development and the project site would be inadequate for agricultural or forestry uses. The area surrounding the project site is not used for agricultural or forestry uses. Therefore, the proposed project would not cause changes to the existing environment that could result in conversion of Farmland outside the project site boundary to non-agricultural use or conversion of forestland to non-forest uses. There would be no impact.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

3.3 AIR QUALITY

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
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?	☐	☐	☒	☐

3.3.1 Environmental Setting

The City of Antioch is in Contra Costa County, which is within the boundaries of the San Francisco Bay Area Air Basin and under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD) and the California Air Resources Board (CARB). The regional climate within the San Francisco Bay Area is driven by a summertime high-pressure cell centered over the northeastern Pacific Ocean that dominates the summer climate of the West Coast. The persistence of this high-pressure cell generally results in negligible precipitation during the summer and meteorological conditions are typically stable with a steady northwesterly wind flow. This flow causes upwelling of cold ocean water from below the surface, which produces a band of cold water off the California coast. 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 to the south, resulting in wind flows offshore, the absence of upwelling, and an increase in the occurrence of storms. Winter stagnation episodes are characterized by nocturnal drainage wind 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.

Criteria Air Pollutants

The Federal Clean Air Act (FCAA) establishes the framework for modern air pollution control. The FCAA, enacted in 1970 and amended in 1990, directs the United States Environmental Protection Agency (EPA) to establish ambient air quality standards. These standards are divided into primary and secondary standards. The primary standards are set to protect human health, and the secondary standards are set to protect environmental values, such as plant and animal life. The FCAA requires the EPA to set National Ambient Air Quality Standards for the six criteria air pollutants. These pollutants include particulate matter, ground-level ozone, carbon monoxide (CO), sulfur oxides, oxides of nitrogen (NOx), and lead. According to the BAAQMD, ozone and fine particulate matter ($PM_{2.5}$) are the major regional air pollutants of concern in the San Francisco Bay Area. Ozone is primarily an issue in the summer and $PM_{2.5}$ in the winter (BAAQMD 2016).

Toxic Air Contaminants

A toxic air contaminant (TAC) is an air pollutant not included in the California Ambient Air Quality Standards, but TACs are considered hazardous to human health. Toxic air contaminants are defined by CARB as those pollutants that, “may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health.”

The health effects associated with TACs are generally assessed locally rather than regionally. Toxic air contaminants can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage; TACs can also cause short-term acute effects such as eye watering, respiratory irritation, running nose, throat pain, and headaches. For evaluation purposes, TACs are separated into carcinogens and noncarcinogens. Carcinogens are assumed to have no safe threshold below which health impacts would not occur, and the cancer risk is expressed as excess cancer cases per one million exposed individuals (typically over a lifetime of exposure).

Diesel Particulate Matter

Diesel particulate matter (DPM) is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases: gas and particle. The gas phase is composed of many of the urban hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and polycyclic aromatic hydrocarbons. The particle phase also has many different types of particles that can be classified by

size or composition. The size of diesel particulates that are of greatest health concern are those that are in the categories of fine and ultra-fine particles. The composition of these fine and ultra-fine particles may be composed of elemental carbon with adsorbed compounds such as organic compounds, sulfate, nitrate, metals, and other trace elements. Diesel exhaust is emitted from a broad range of diesel engines, such as the on-road diesel engines of trucks, buses, and cars, and off-road diesel engines that include locomotives, marine vessels, and heavy-duty equipment (CARB 2019).

Asbestos

Asbestos is a fibrous mineral that both naturally occurs in ultramafic rock (a rock type commonly found in California) and is used as a processed component of building materials. Because asbestos has been proven to cause a number of disabling and fatal diseases, such as asbestosis and lung cancer, it is strictly regulated either based on its natural widespread occurrence or in its use as a building material. In the initial Asbestos National Emission Standards for Hazardous Air Pollutants rule promulgated in 1973, a distinction was made between building materials that would readily release asbestos fibers when damaged or disturbed (friable) and those materials that were unlikely to result in significant fiber release (non-friable). The EPA has since determined that, when severely damaged, otherwise non-friable materials can release significant amounts of asbestos fibers. Asbestos has been banned from many building materials under the Toxic Substances Control Act, the Clean Air Act, and the Consumer Product Safety Act. Naturally occurring asbestos (NOA) is known to occur in many parts of California and is commonly associated with ultramafic or serpentinite rock.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics.

Air Quality Standards

The Clean Air Act requires States to develop a general plan to attain and maintain the standards in all areas of the country and a specific plan to attain the standards for each

area designated nonattainment. These plans, known as State Implementation Plans (SIPs), are developed by State and local air quality management agencies and submitted to EPA for approval.

The SIP for the State of California is administered by the CARB, which has overall responsibility for Statewide air quality maintenance and air pollution prevention. California's SIP incorporates individual federal attainment plans for each regional air district. SIPs are prepared by the regional air district and sent to CARB 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.

The CARB also administers the California Ambient Air Quality Standards for the 10 air pollutants designated in the California Clean Air Act. The 10 State air pollutants include the six federal criteria pollutant standards listed above as well as visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The federal and State ambient air quality standards are summarized in Table 3.3-1.

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

Pollutant	Averaging Time	California Standard Concentration	National Standard Primary	National Standard Secondary
Ozone	1 Hour	0.09 ppm (180 µg/m^3)	—	Same as Primary Standard
	8 Hour	0.070 ppm (137 µg/m^3)	0.070ppm (137 µg/m^3)	
Respirable Particulate Matter	24 Hour	50 µg/m^3	150 µg/m3	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m^3	—	

Pollutant	Averaging Time	California Standard Concentration	National Standard Primary	National Standard Secondary
Fine Particulate Matter	24 Hour	—	35 µg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	
Carbon Monoxide	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	—
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	—
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	—	—
Nitrogen Dioxide	1 Hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	—
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary Standard
Sulfur Dioxide	1 Hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
	3 Hour	—	—	0.5 ppm (1300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas)	—
	Annual Arithmetic Mean	—	0.030 ppm (for certain areas)	—
Lead	30-Day Average	1.5 µg/m^3	—	—
	Calendar Quarter	—	1.5 µg/m^3	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 µg/m^3	
Visibility-Reducing Particles	8 Hour	See Footnote 1	No National Standards	
Sulfates	24 Hour	25 µg/m^3		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)		
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)		

Pollutant	Averaging Time	California Standard Concentration	National Standard Primary	National Standard Secondary

Notes:
1. In 1989, the CARB 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 Statewide and Lake Tahoe Air Basin standards, respectively.
µg/m3 =micrograms per cubic meter; CARB = California Air Resources Board; mg/m3 = milligrams per cubic meter; ppm = parts per million
Source: Bay Area Air Quality Management District Air Quality Standards and Attainment Status (BAAQMD 2017a)

As summarized in Table 3.3-2, the San Francisco Bay Area Basin and Contra Costa County are currently designated as nonattainment areas for State ozone, $PM_{2.5}$, and particulate matter between 2.5 and 10 microns (PM_{10}) standards and for national ozone and $PM_{2.5}$ standards; however, they are listed as unclassified under national PM_{10} standards. The standards for CO, nitrogen dioxide, sulfur dioxide, and lead are being met in the Bay Area. The BAAQMD has developed its 2017 Clean Air Plan, Spare the Air, Cool the Climate (2017 Clean Air Plan) to update the most recent Bay Area ozone plan, the 2010 Clean Air Plan, pursuant to air quality planning requirements defined in the California Health and Safety Code. To fulfill State ozone planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of ozone precursors—reactive organic gases (ROG) and NO_X—and reduce transport of ozone and its precursors to neighboring air basins. In addition, the 2017 Clean Air Plan builds upon and enhances the BAAQMD's efforts to reduce emissions of $PM_{2.5}$ and TACs (BAAQMD 2017b).

Table 3.3-2. Contra Costa County Area Designations for State and National Ambient Air Quality

Criteria Pollutants	State Designation	National Designation
Ozone (1-hour)	Nonattainment	—
Ozone (8-hour)	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Nonattainment	Unclassified/Nonattainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Attainment
Sulfates	Attainment	—
Lead	Attainment	Attainment
Hydrogen Sulfide	Unclassified	—

Criteria Pollutants	State Designation	National Designation
Visibility Reducing Particles	Unclassified	—

Notes:
$PM_{2.5}$ = particulate matter less than 2.5 microns; PM_{10} = particulate matter between 2.5 and 10 microns
Source: Bay Area Air Quality Management District Air Quality Standards and Attainment Status (BAAQMD 2017a)

Table 3.3-3. Bay Area Air Quality Management District Project-Level Air Quality California Environmental Quality Act Thresholds of Significance

Criteria Air Pollutants and Precursors (regional)	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tpy)
Reactive organic gas	54	54	10
Nitrogen oxide	54	54	10
Particulate matter 10 microns in diameter or less (PM_{10})	82 (exhaust)	82	15
Particulate matter 2.5 microns in diameter or less ($PM_{2.5}$)	54 (exhaust)	54	10
Fugitive dust (PM_{10} and $PM_{2.5}$)	Best management practices	None	
Local carbon monoxide	None	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	
Greenhouse gases (projects other than stationary sources)	None	Compliance with qualified greenhouse gas reduction strategy OR 1,100 $MTCO_2e$/yr OR 4.6 $MTCO_2e$/SP/yr (residents + employees)	

Notes:
lbs/day = pounds per day; tpy= trips per year; ppm = parts per million; $MTCO_2e$/yr= metric tons of carbon dioxide equivalent per year; $MTCO_2e$/SP/yr= metric tons of carbon dioxide equivalent per service population per year
Source: Bay Area Air Quality Management District CEQA Air Quality Guidelines (BAAQMD 2017c)

The BAAQMD has established rules and regulations to attain and maintain State and national air quality standards. The rules and regulations that apply to this proposed project include, but are not limited to, the following:

Regulation 2 Permits, Rule 2: New Source Review

The purpose of this Rule is to implement the New Source Review provisions of the federal and California Clean Air Acts (including the federal non-attainment New Source Review, Prevention of Significant Deterioration, and Minor New Source Review provisions) and the no-net increase requirements of the California Health and Safety Code, among other requirements.

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 proposed project, it does dictate the ROG content of paint available for use during the construction.

Regulation 8, Rule 7: Gasoline Dispensing Facilities

The purpose of this Rule is to limit emissions of organic compounds from gasoline dispensing facilities.

Regulation 8, Rule 15: Emulsified and Liquid Asphalts

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

BAAQMD manages a naturally occurring asbestos program that administers the requirements of CARB's naturally occurring asbestos air toxic control measures, as discussed above. The BAAMQD provides an exemption application, notification form for road construction and maintenance operations, and asbestos dust mitigation plan applications for projects to submit prior to the start of construction, or upon discovery of asbestos, ultramafic rock, or serpentine during construction. Forms must be submitted to the BAAQMD in accordance with the procedures detailed in the BAAQMD Asbestos Air Toxic Control Measures Inspection Guidelines Policies and Procedures.

City of Antioch

As a component of the 2003 General Plan, the City has adopted policies to minimize air pollutant emissions within the Antioch planning area. The following policies are applicable to the proposed project:

10.6.2 Air Quality Policies

Construction Emissions

- Require development projects to minimize the generation of particulate emissions during construction through implementation of the dust abatement actions outlined in the CEQA Handbook of the Bay Area Air Quality Management District.

Stationary Sources

- Provide physical separation between (1) proposed new industries having the potential for emitting toxic air contaminants and (2) existing and proposed sensitive receptors (e.g., residential areas, schools, and hospitals).

3.3.2 Methodology

Construction and operational emissions for the proposed project were modeled using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 (Appendix A).

3.3.3 Environmental Impact Analysis

This section discusses potential impacts related to air quality associated with the proposed project and provides mitigation measures where necessary.

Impact AIR-1 Conflict with or obstruct implementation of the applicable air quality plan?

Impact Analysis

The BAAQMD's 2017 Clean Air Plan is the regional air quality plan (AQP) for the Air Basin. It identifies strategies to bring regional emissions into compliance with federal and State air quality standards. The BAAQMD's Guidance provides two criteria for determining if a plan-level project is consistent with the current AQP control measures. However, the BAAQMD does not provide a threshold of significance for project-level consistency analysis. Therefore, the following criteria will be used for determining a project's consistency with the AQP.

- Criterion 1: Does the project support the primary goals of the AQP?
- Criterion 2: Does the project include applicable control measures from the AQP?
- Criterion 3: Does the project disrupt or hinder implementation of any AQP control measures?

Criterion 1

The primary goals of the 2017 Clean Air Plan, the current AQP, are to:

- Protect public health through the attainment air quality standards
- Protect the climate

As discussed in impact discussions AIR-2, AIR-3, and AIR-4 the proposed project would not significantly contribute to cumulative nonattainment pollutant violations, expose sensitive receptors to substantial pollutant concentrations, or create objectionable odors affecting a substantial number of people after implementation of Mitigation Measures AIR-1 and AIR-2. Therefore, the project is consistent with criterion 1 with incorporation of Mitigation Measures AIR-1 and AIR-2, which would require all construction contractors to implement the basic construction mitigation measures recommended by the BAAQMD to reduce fugitive dust emissions and require the use of cleaner offroad construction equipment.

Criterion 2

The 2017 Clean Air Plan contains 85 control measures aimed at reducing air and climate pollutants in the Bay Area. For purposes of consistency with climate planning efforts at the State level, the control strategy in the Clean Air Plan is based upon the same economic sector framework used by the CARB for its 2014 update to the Assembly Bill (AB) 32 Scoping Plan. The sectors are as follows:

- Stationary Sources
- Transportation
- Energy
- Buildings
- Agriculture
- Natural and Working Lands
- Waste Management
- Water
- Super-GHG (Greenhouse Gas) Pollutants

The proposed project's potential to conflict with each of these measures is discussed below.

Stationary Source Control Measures. The Stationary Source Measures, which are designed to reduce emissions from stationary sources such as gasoline dispensing facilities, refineries, and glass furnaces, are incorporated into rules adopted by the

BAAQMD and then enforced by the BAAQMD's Permit and Inspection programs. Since the proposed project would develop a new gasoline station it would be subject to permitting, however, the Stationary Source Measures of the Clean Air Plan are not applicable to the proposed project.

Transportation Control Measures. The BAAQMD identifies Transportation Measures as part of the Clean Air Plan to decrease emissions of criteria pollutants, TACs, and greenhouse gases (GHGs) by reducing demand for motor vehicle travel, promoting efficient vehicles and transit service, decarbonizing transportation fuels, and electrifying motor vehicles and equipment. The proposed project would develop a new gasoline station/convenience store and car wash within an established urban area. The proposed project would be expected to shorten vehicle trips from nearby residential and commercial land uses. The proposed project would be constructed in accordance with City standards and would be consistent with the BAAQMD's effort to encourage planning for bicycle and pedestrian facilities.

Energy Control Measures. The Clean Air Plan also includes Energy Control Measures, which are designed to reduce emissions of criteria air pollutants, TACs, and GHGs by decreasing the amount of electricity consumed in the Bay Area, as well as decreasing the carbon intensity of the electricity used by switching to less GHG-intensive fuel sources for electricity generation. Since these measures apply to electrical utility providers and local government agencies (and not individual projects), the Energy Control Measures of the Clean Air Plan are not applicable to the proposed project. However, the project applicant would be required to conform to the energy efficiency requirements of the California Building Standards Code, also known as Title 24. Specifically, the project must implement the requirements of the most recent Building Energy Efficiency Standards, which is the current version of Title 24.

Building Control Measures. The BAAQMD has authority to regulate emissions from certain sources in buildings such as boilers and water heaters but has limited authority to regulate buildings themselves. Therefore, the strategies in the control measures for this sector focus on working with local governments that do have authority over local building codes, to facilitate adoption of best GHG control practices and policies. The proposed project would be required to comply with the latest California Green Building Standards Code (CALGreen) standards. Therefore, the Building Control Measures of the Clean Air Plan are not applicable to the proposed project.

Agriculture Control Measures. The Agriculture Control Measures are designed to primarily reduce emissions of methane. Since the proposed project does not include

any agricultural activities, the Agriculture Control Measures of the Clean Air Plan are not applicable to the proposed project.

Natural and Working Lands Control Measures. The Natural and Working Lands Control Measures focus on increasing carbon sequestration on rangelands and wetlands, as well as encouraging local governments to ordinances that promote urban-tree plantings. Since the project does not include the disturbance of any rangelands or wetlands, the Natural and Working Lands Control Measures of the Clean Air Plan are not applicable to the proposed project.

Waste Management Control Measures. The Waste Management Measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. The proposed project would comply with local requirements for waste management (e.g., recycling and composting services). Therefore, the proposed project would be consistent with the Waste Management Control Measures of the Clean Air Plan.

Water Control Measures. The Water Control Measures focus on reducing emissions of criteria pollutants, TACs, and GHGs by encouraging water conservation, limiting GHG emissions from publicly owned treatment works (POTWs), and promoting the use of biogas recovery systems. Since these measures apply to POTWs and local government agencies (and not individual projects), the Water Control Measures are not applicable to the proposed project.

Super-GHG Control Measures. The Super-GHG Control Measures are designed to facilitate the adoption of best GHG control practices and policies through the BAAQMD and local government agencies. Since these measures do not apply to individual projects, the Super-GHG Control Measures are not applicable to the proposed project.

As discussed above, most of the measures contained in the Clean Air Plan would not be appliable to the proposed project. The proposed project would not impede implementation of any measures contained in the Clean Air Plan and would be consistent with applicable measures outlined in the Clean Air Plan. Therefore, the proposed project would not disrupt or hinder implementation of a control measure from the Clean Air Plan.

Criterion 3

If the approval of a project would not cause a disruption, delay, or otherwise hinder the implementation of any clean air plan control measure it would be considered consistent with the 2017 Clean Air Plan. Examples of how a project may cause the disruption or delay of control measures include a project that precludes an extension of a transit line or bike path or proposes excessive parking beyond parking requirements. The project will not preclude extension of a transit line or bike path, propose excessive parking beyond parking requirements, or otherwise create an impediment or disruption to implementation of any AQP control measures. As shown above, the proposed project incorporates several AQP control measures as project design features.

Conclusion

The proposed project would be consistent with the criteria of the AQP with incorporation of Mitigation Measures AIR-1 and AIR-2. As such, with the incorporation of Mitigation Measures AIR-1 and AIR-2, impact would be less than significant.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures

MM AIR-1 **Implement Construction Best Management Practices.** The applicant shall require all construction contractors to implement the basic construction mitigation measures recommended by the BAAQMD to reduce fugitive dust emissions. Emission reduction measures will include, at a minimum, the following measures. Additional measures may be identified by the BAAQMD or contractor as appropriate:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day
- All haul trucks transporting soil, sand, or other loose material off-site will be covered
- All visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited

- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour
- All roadways, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading unless seeding or soil binders are used
- Idling times shall be minimized either by shutting equipment off when not in use or by reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485 of California Code of Regulations; clear signage shall be provided for construction workers at all access points
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications
- All equipment shall be checked by a certified visible emissions evaluator or checked by a certified mechanic and determined to be running in proper condition prior to operation
- Post a publicly visible sign with the telephone number and person to contact at the City regarding dust complaints. This person will respond and take corrective action within 48 hours. The Bay Area Air Quality Management District's phone number will also be visible to ensure compliance with applicable regulations.

MM AIR-2 **Implement Cleaner Construction Equipment.** The following mitigation measure shall be implemented during all phases of construction to reduce potential exposure of diesel particulate matter (DPM) and particulate matter less than 2.5 micrometers in aerodynamic diameter ($PM_{2.5}$) emissions to sensitive receptors located near the Project site. Prior to the issuance of any demolition, grading and/or building permits (whichever occurs earliest), the project applicant shall prepare and submit a construction - operations plan that includes specifications of the equipment to be used during construction to the Community Development Director or the Director's designee. The plan shall be accompanied by a letter signed by an air quality specialist, verifying that the equipment included in the plan meets the standards set forth below:

- For all construction equipment larger than 25 horsepower used at the site, equipment shall at a minimum, meet United States Environmental Protection Agency (US EPA) or California Air Resources Board (CARB) particulate matter emissions standards for Tier 4 Final engines.

- The construction contractor shall maintain records documenting its efforts to comply with this requirement, including equipment lists. Off-road equipment descriptions and information shall include, but are not limited to, equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, and engine serial number. The plan shall be submitted to the Community Development Director or the Director's designee for review and approval prior to the issuance of any demolition, grading and/or building permits (whichever occurs earliest).

Level of Significance After Mitigation
Less Than Significant Impact with Mitigation.

Impact AIR-2	**Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard?**

Impact Analysis
In developing thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Project construction and operational impacts are assessed separately below.

Construction Emissions

Construction activities associated with development of the proposed project would include site preparation, grading, building construction, paving and architectural coatings. Emissions from construction-related activities are generally short-term in duration but may still cause adverse air quality impacts. During construction, fugitive dust would be generated from earth-moving activities. Exhaust emissions would also be generated from off-road construction equipment and construction-related vehicle trips. Emissions associated with construction of the proposed project are discussed below.

Construction Fugitive Dust (PM_{10} and $PM_{2.5}$)

During construction (grading), fugitive dust (PM_{10} and $PM_{2.5}$) would be generated from site grading and other earth-moving activities. Most of this fugitive dust will remain localized and will be deposited near the project site.

The BAAQMD does not have a quantitative threshold for fugitive dust. The BAAQMD's Air Quality Guidelines recommend that projects determine the significance for fugitive dust through application of best management practices (BMPs). Mitigation Measure AIR-1 requires the implementation fugitive dust control measures that are consistent with BMPs established by the BAAQMD, which reduce the project's construction-generated fugitive dust impacts to a less than significant level.

Construction Emissions: ROG, NO_X, PM_{10} (exhaust), $PM_{2.5}$ (exhaust)

Table 3.3-4 provides the construction emissions estimate for the proposed project. Please refer to Appendix A for details regarding assumptions used to estimate construction emissions. The duration of construction activity and associated equipment represent a reasonable approximation of the expected construction fleet as require pursuant to CEQA guidelines. The construction emissions in each year are well below the recommended thresholds of significance. The project would implement Mitigation Measure AIR-1 as recommended by the BAAQMD. The emissions from construction would be less than significant with incorporation of Mitigation Measure AIR-1.

Table 3.3-4. Construction Annual and Daily Average Emissions (Unmitigated Average Daily Rate)

Parameter	Air Pollutants			
	ROG	**NO_X**	**PM_{10} (Exhaust)**	**$PM_{2.5}$ (Exhaust)**
2023 Construction Year (tons/year)	0.08	0.56	0.03	0.03
2024 Construction Year (tons/year)	0.05	0.05	0.00	0.00
Total Emissions (tons/year)	*0.13*	*0.62*	*0.03*	*0.03*
Total Emissions (pounds/year)	258.60	1,232.20	56.92	55.10
Average Daily Emissions (pounds/day)[1]	**1.48**	**7.04**	**0.33**	**0.31**
Significance Threshold (pounds/day)	**54**	**54**	**82**	**54**

Exceeds Significance Threshold?	**No**	**No**	**No**	**No**

Notes:
[1] Calculated by dividing the total number of pounds by the total 175 working days of construction for the entire construction period.
Calculations use unrounded numbers.
lbs = pounds; NO_X = oxides of nitrogen; PM_{10} = particulate matter 10 microns in diameter; $PM_{2.5}$ = particulate matter 2.5 microns in diameter; ROG = reactive organic gases
Source: CalEEMod (Appendix A)

Operational Emissions

As previously discussed, the pollutants of concern include ROG, NO_X, PM_{10}, and $PM_{2.5}$. The proposed project is anticipated to be operational in 2023, immediately following the completion of construction. Table 3.3-5 and Table 3.3-6 summarize the operational emissions on an annual and daily basis, respectively. The BAAQMD Criteria Air Pollutant Significance thresholds were used to determine impacts.

Table 3.3-5. Operational Annual Emissions for Full Buildout (Unmitigated)

Emissions Source	Tons per Year			
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Area	0.03	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00
Mobile (Motor Vehicles)	0.99	0.71	0.72	0.20
Fuel Dispensing	2.90	-	-	-
Total Project Annual Emissions	**3.92**	**0.72**	**0.72**	**0.20**
Thresholds of Significance	**10**	**10**	**15**	**10**
Exceeds Significance Threshold?	**No**	**No**	**No**	**No**

Notes:
NOX = oxides of nitrogen; PM2.5 = particulate matter 2.5 microns or less in diameter; PM10 = particulate matter 10 microns or less in diameter; ROG = reactive organic gases
Assume approximately 8 fuel pumps, conservatively assuming a throughput of 1,000,000 gallons/pump/year.
CalEEMod (Appendix A)

Table 3.3-6. Operational Average Daily Emissions (Unmitigated)

Emissions Source	Tons per Year			
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Total Project Annual Emissions[1] (tons/year)	3.92	0.72	0.72	0.20
Total Project Annual Emissions[2] (lbs/year)	7,816.2	1,431.46	1,441.48	394.48
Average Daily Emissions[3] (lbs/day)	**21.41**	**3.92**	**3.95**	**1.08**
BAAQMD Average Daily Emission Thresholds (lbs/day)	**54**	**54**	**82**	**54**
Exceeds Significance Threshold?	**No**	**No**	**No**	**No**

Notes:
1 Tons per year are shown in 3.3-5.
2 Pounds per year were calculated using the unrounded annual project operational emissions.
3 The average daily operational emissions were estimated based on the total annual emissions divided by 365 days.
lbs = pounds; NOX = oxides of nitrogen; PM2.5 = particulate matter 2.5 microns or less in diameter; PM10 = particulate matter 10 microns or less in diameter; ROG = reactive organic gases
Source: CalEEMod (Appendix A)

The proposed project would not result in operational-related air pollutants or precursors that would exceed BAAQMD's thresholds of significance, indicating that ongoing project operations would not have the potential to generate a significant quantity of air pollutants. Therefore, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard, and this would be a less than significant impact.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures
Mitigation Measure AIR-1 is required.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact AIR-3 Expose sensitive receptors to substantial pollutant concentrations?

Impact Analysis

This discussion addresses whether the project would expose sensitive receptors to construction-generated fugitive dust ($PM_{2.5}$), NOA, construction-generated DPM, or operational related TACs. According to BAAQMD, some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emission's source, or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics. The proposed project is not considered a sensitive receptor. The nearest sensitive receptors are existing residences bordering the project site to the west and south.

Fugitive Dust $PM_{2.5}$

Fugitive dust would be generated from site grading and other earth-moving activities. Most of this fugitive dust would remain localized and would be deposited near the project site. However, the potential for impacts from fugitive dust exists unless control measures are implemented to reduce the emissions from the project site. The proposed project would implement best management practices through implementation of Mitigation Measure AIR-1, which requires fugitive dust control measures. As such, the project's construction-generated fugitive dust impacts would be less than significant with incorporation of mitigation.

Naturally Occurring Asbestos

Construction in areas of rock formations that contain NOA could release asbestos to the air and pose a health hazard. BAAQMD enforces CARB's air toxic control measures at sites that contain ultramafic rock. The air toxic control measures for construction, grading, quarrying and surface mining operations were signed into State law on July 22, 2002, and became effective in the Air Basin in November 2002. The purpose of this regulation is to reduce public exposure to NOA. A review of the map with areas more likely to have rock formations containing NOA in California indicates that there is no asbestos in the immediate project area (USGS 2011). Therefore, it can be reasonably concluded that the project would not expose sensitive receptors to NOA. Impacts would be less than significant.

Diesel Particulate Matter

A HRA was prepared for the project. The HRA evaluated DPM, represented as exhaust $PM_{2.5}$ emissions generated during construction and operation of the project and the related health risk impacts for sensitive receptors located within 1,000 feet of the project boundary.

During construction, the proposed project will generate DPM emissions from off-road construction equipment and haul trucks. The main source of DPM from the long-term operations of the proposed project will be from combustion of diesel fuel in diesel-powered engines in on-road delivery trucks and other visiting diesel vehicles. Motor vehicle emissions refer to DPM exhaust emissions from the motor vehicle traffic that would travel to and from the project site, as well as within the project site, each day.

Benzene

Out of the toxic compounds emitted from the gasoline stations, benzene, ethylbenzene, and naphthalene have cancer toxicity values. However, benzene is the TAC which drives the risk, accounting for 87 percent of cancer risk from gasoline vapors (SCAQMD 2015). Furthermore, benzene constitutes more than three to four times the weight of gasoline than ethylbenzene and naphthalene, respectively (SCAQMD 2015). Therefore, ethylbenzene and naphthalene were not modeled and were instead considered significant in the case that benzene emissions are significant. Additionally, there are substances emitted from gasoline stations, such as toluene and xylene which possess acute adverse health effects (though not cancer risk). However, it is not until the benzene concentrations are more than two orders of magnitude above 10 in one million that the emissions of toluene and xylene begin to cause adverse health effects (SCAQMD 2007, CAPCOA 1997). Therefore, toluene and xylene emissions were not modeled and were instead considered significant in the case that benzene concentrations are identified at two orders of magnitude above 10 in one million cancer risk.

Emissions sources to be included in the model consist of on-site fuel storage tanks and fuel dispensers. The proposed project contemplates three underground fuel storage tanks and eight fuel dispensers. The specific processes associated with fuel storage tanks and fuel dispensers that emit air toxics include loading, breathing, refueling, and spillage. Detailed calculations of these air toxic emissions are provided in Appendix A.

Cancer Risk

According to the BAAQMD, a project would result in a significant impact if it would individually expose sensitive receptors to TACs resulting in an increased cancer risk greater than 10.0 in 1 million, an increased non-cancer risk of greater than 1.0 on the hazard index (chronic or acute), or an annual average ambient $PM_{2.5}$ increase greater than 0.3 micrograms per cubic meter ($\mu g/m^3$). A significant cumulative impact would occur if the project, in combination with other projects located within a 1,000-foot radius of the project site, would expose sensitive receptors to TACs, resulting in an increased cancer risk greater than 100.0 in one million, an increased non-cancer risk of greater than 10.0 on the hazard index (chronic), or an ambient $PM_{2.5}$ increase greater than 0.8 $\mu g/m^3$ on an annual average basis.

The project site is located within 1,000 feet from existing sensitive receptors that could be exposed to diesel emission exhaust during the construction and operation. The nearest sensitive receptors are existing residences bordering the project site to the west and south. To estimate the potential cancer risk associated with construction of the Project from equipment exhaust (including DPM), a dispersion model was used to translate an emission rate from the source locations to concentrations at the receptor locations of interest (i.e., sensitive receptors at nearby residences and schools). The maximally exposed individual (MEI) was determined to be an existing residence located less than 70 feet east of the project site.

The HRA was conducted in accordance BAAQMD and the OEHHA guidelines. The HRA evaluated potential cancer and non-cancer health risks over the duration of project construction. Results of the analysis of the unmitigated scenario are summarized and compared to the applicable thresholds. Calculations and AERMOD output data used in the construction HRA are included in Appendix A.

As indicated in Table 3.3-7, construction of the project would exceed the applicable BAAQMD thresholds for one of the health impact metrics prior to incorporation of mitigation. Specifically, the cancer risk from construction of the project would exceed the applicable cancer risk significance threshold at the MEI for the infant age zero scenario, and the annual $PM_{2.5}$ concentration would exceed the annual $PM_{2.5}$ concentration threshold for the third trimester and infant age group. Therefore, the proposed project would be required to implement Mitigation Measure AIR-2 to reduce health risk impacts. Mitigation Measure AIR-2 would require the use of cleaner off-road construction equipment that would reduce particulate matter exhaust emissions and cancer risk.

As shown in Table 3.3-8 implementation of Mitigation Measure AIR-2 would reduce the health risks to below BAAQMD thresholds.

Table 3.3-7. Health Risks from Unmitigated Project Construction

Health Impact Metric				Carcinogenic Inhalation Health Risk in One Million	Ambient PM2.5 Increase	Chronic Inhalation Hazard Index
Exposure Age	**Phase of Project**	**Exposure Duration**	**Source**			
Third Trimester	Construction	0.25	DPM	7.32	0.633	0.126
Infant	Construction	0.40	DPM	35.3	0.633	0.126
	Operation	1.60	DPM	0.80	0.004	0.001
			Benzene	1.57	0.077	0.003
Child	Operation	14	DPM	0.93	0.004	0.001
			Benzene	1.83	0.077	0.003
Adult	Operation	14	DPM	0.49	0.004	0.001
			Benzene	0.97	0.077	0.003
Total Cancer Risk				49.3	-	-
Threshold				**10**	**0.3**	**1**
Exceeds Threshold?				**Yes**	**Yes**	**No**

Notes:
Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as $PM_{2.5}$ exhaust) and benzene concentration by the REL of 5 µg/m^3 and 27 µg/m^3, respectively.
Source: Appendix A.

Table 3.3-8. Health Risks from Mitigated Project Construction

Health Impact Metric				Carcinogenic Inhalation Health Risk in One Million	Ambient PM2.5 Increase	Chronic Inhalation Hazard Index
Exposure Age	**Phase of Project**	**Exposure Duration**	**Source**			
Third Trimester	Construction	0.25	DPM	0.40	0.034	0.007
Infant	Construction	0.40	DPM	1.91	0.034	0.007
	Operation	1.60	DPM	0.80	0.004	0.001
			Benzene	1.57	0.077	0.003
Child	Operation	14	DPM	0.93	0.004	0.001

Health Impact Metric				Carcinogenic Inhalation Health Risk in One Million	Ambient PM2.5 Increase	Chronic Inhalation Hazard Index
Exposure Age	Phase of Project	Exposure Duration	Source			
			Benzene	1.83	0.077	0.003
Adult	Operation	14	DPM	0.49	0.004	0.001
			Benzene	0.97	0.077	0.003
Threshold				**10**	**0.3**	**1**
Exceeds Threshold?				**No**	**No**	**No**

Notes:
Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as PM2.5 exhaust) and benzene concentration by the REL of 5 µg/m3 and 27 µg/m3, respectively.
See Mitigation Measure AIR-1.
Source: Appendix A.

The BAAQMD recommends assessing the potential cumulative impacts from sources of TACs within 1,000 feet of a project. A cumulative HRA was performed that examined the cumulative impacts of the Project's construction emissions and sources of TAC emissions within 1,000 feet of the Project. For a project-level analysis, BAAQMD provides several tools for use in screening potential sources of TACs. The BAAQMD-provided tools that were used to assess the potential cumulative impacts from TACs during Project construction at the MEI are described below.

- **Stationary Source Risk and Hazard Screening Tools.** The BAAQMD prepared a Geographic Information System (GIS) tool with the location of permitted sources. For each emissions source, the BAAQMD provides conservative estimates of cancer risk and $PM_{2.5}$ concentrations. Based on information from the GIS tool, there are three BAAQMD-permitted stationary sources within 1,000 feet of the Project site.
- **Health Risks for Local Roadways.** The BAAQMD pre-calculated concentrations and the associated potential cancer risks and $PM_{2.5}$ concentration increases for each county within their jurisdiction for roadways that carry at least 30,000 average daily trips. For certain areas, the BAAQMD also included local roadways that meet BAAQMD's "major roadway" criteria of 10,000 vehicles or 1,000 trucks per day. The latest available screening tool is in the form of a GIS raster file.
- **Freeway Screening Analysis Tool.** The BAAQMD prepared a GIS raster file that contains pre-estimated cancer risk and $PM_{2.5}$ concentration increases for highways within the Bay Area.

- **Rail Screening Tool.** The BAAQMD prepared a GIS raster file that contains estimated cancer risks and $PM_{2.5}$ concentrations from railroad operations at any point within the Air Basin.

Review of the tools provided by the BAAQMD demonstrates that there are no significant roadway or freeway sources of TACs near the project site. There are two stationary sources located within 1,000 feet of the project site (Verizon Wireless [Highway 4 Bypass] at 4701 Vista Grande Drive and Target Store T-1819 at 5769 Lone Tree Way). Both stationary sources were identified by the BAAQMD's Permitted Stationary Sources Risk and Hazards Tool as have no health risks associated with the site and $PM_{2.5}$ concentrations of 0 µg/m3. As a result, there are no additional sources of TACs that may impact the health of the MEIR in conjunction with the proposed project.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures
Mitigation Measure AIR-2 is required.

Level of Significance After Mitigation
Less Than Significant Impact with Mitigation.

Impact AIR-4	**Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?**

Impact Analysis

Construction

Diesel exhaust and ROGs/volatile organic compounds would be emitted during construction of the Project from equipment exhaust, painting, and paving activities, which are objectionable to some; however, construction activities would be minimal, and emissions would disperse rapidly from the Project site and therefore would not create objectionable odors affecting a substantial number of people. As such, construction odor would be a less than significant impact.

Operation

Land uses typically considered associated with odors include wastewater treatment facilities, waste-disposal facilities, or agricultural operations. The Project does not contain land uses typically associated with emitting objectionable odors.

The BAAQMD's 2017 Air Quality Guidelines Table 3-3 provides recommended odor screening distances for a variety of land uses. Projects that would site an odor source or a receptor farther than the applicable screening distance would not likely result in a significant odor impact. The Project site is not located within the screening distances recommended by BAAQMD to any potential odor sources and is not a source of odors itself, and as such, this would be less than significant impact.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

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3.4 BIOLOGICAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. 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 or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (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 native 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?	☐	☐	☐	☒

3.4.1 Environmental Setting

The proposed project site is a square shaped parcel that is currently developed with multiple buildings including a single-family home, multi-car garage, and an old barn. Other developed areas include paved asphalt and gravel/dirt areas within the various vehicles, trailers, and storage containers placed throughout the southwest portion of the project area. The proposed project site is completely surrounded by urban development.

The topography of the project area is relatively flat, with the terrain slightly sloping south to north. The project area occurs at elevations between 137 and 134 feet above mean

sea level. Regionally, the project area has a Mediterranean climate characterized by hot, dry summers and moderate winters, with average temperatures ranging seasonally from 73.7 to 49.4 degrees Fahrenheit. Historical data used to describe the climate was collected at the Antioch Pump Plant 3, California National Oceanic and Atmospheric Administration (NOAA) Coop Station, approximately 1.5 miles north of the project area (NOAA Regional Climate Centers 2021). Precipitation in the project area occurs as rain. Average annual rainfall is 12.75 inches and occurs primarily from October through May. The growing season (i.e., 50 percent probability of air temperature 32ºF or higher) in the survey area is around 304 days and occur between early February and December (NOAA Regional Climate Centers 2021).

3.4.2 Methodology

This section summarizes the methods used to identify and analyze potential impacts on sensitive habitats and effects on special-status plants and animals that may occur on the project site. As described below, biologists began their research with database searches and literature reviews to determine which rare natural communities and special-status species have the potential to occur on the project site. A more detailed description of these methods is provided in the project's Biological Resources Technical Report prepared by Stantec in July 2021 (Appendix B).

Background Research

The analysis presented in this BRTR includes a review of existing information about sensitive biological resources known to occur in the vicinity of the proposed project as well as the reconnaissance-level field survey conducted to determine whether the biological resources are absent, present, and/or are likely to be present.

For the purpose of this evaluation, "special-status" plant species include plants that are: 1) listed as threatened or endangered under the California Endangered Species Act (CESA) and/or Federal Endangered Species Act (FESA); 2) proposed for federal listing as threatened or endangered; 3) State or federal candidate species; 4) designated as rare by the California Department of Fish and Wildlife (CDFW); or 5) California Rare Plant Rank (CRPR) 1A, 1B, 2A or 2B species. Special-status animal species include species that are: 1) listed as threatened or endangered under the CESA and/or FESA; 2) proposed for federal listing as threatened or endangered; 3) State and/or federal candidate species; or 4) identified by the CDFW as species of special concern or fully protected species.

Sensitive natural communities are those communities that are of highly limited distribution, and may or may not contain rare, threatened, or endangered species. The California Natural Diversity Database (CNDDB) ranks natural communities according to their rarity and endangerment in California. Habitats are considered “sensitive” if they are identified on the CDFW List of Vegetation Alliances and Associations as being highly imperiled or classified by CDFW in the CNDDB as natural communities of special concern – Ranks S1 to S3.

The potential for special-status species to occur within the project area, was classified under one of five categories as described below. Only those special-status species with an occurrence potential of “Moderate” or greater are evaluated in detail as those species are most likely to occur.

- **Present:** The species is known to be present or has been recently observed in the project area.
- **High:** The species has been observed and documented within five miles of the project area within the last five years and suitable habitat for the species is present.
- **Moderate:** The proposed project is located within the range of the species, there are documented occurrences within five miles of the project area, and/or suitable habitat for the species exists in the project area.
- **Low:** The proposed project is located within the range of the species and low-quality (e.g., disturbed, agricultural) habitat is present.
- **Absent:** The project area is located outside of the species range and/or potential habitat to support the species is not present in the project area.

Prior to conducting a reconnaissance-level biological field survey, Stantec completed a desktop analysis, which included literature and database review, to identify sensitive biological resources (wildlife species, plant species, and their habitats) that may occur within the proposed project site and region. Information about habitat types and special-status species that could occur in the project area was obtained from the following sources.

- CDFW CNDDB plant and animal records (CDFW 2021a);
- California Native Plant Society online *Inventory of Rare and Endangered Plants* (CNPS 2021);

- Calflora (2021);
- United States Fish and Wildlife Service (USFWS) list of endangered and threatened species that may occur in the project area (USFWS 2021a); and
- USFWS Designated Critical Habitat within the project area (USFWS 2021a).

The project area is within the *Antioch South* U.S. Geological Survey (USGS) 7.5-minute quadrangle. A CNDDB and CNPS database search for special-status species included the USGS 7.5-minute quadrangles within a 5-mile radius of the project site. In this case, the *Antioch North*, *Antioch South*, *Jersey Island*, and *Brentwood* topographic quadrangles were queried. A 5-mile radius quadrangle search was conducted based on habitat types and migration distances for potential special-status species that could occur within the Project area. The USFWS database of endangered species was also utilized to query all federally endangered, threatened, candidate, and proposed animal and plant species, as well as designated critical habitat with known occurrences in the project quadrangle and the adjacent quadrangles. Calflora and CNPS' Online Inventory databases were used to obtain more information on the habitat requirements of rare plants.

Other information sources consulted to determine which special-status species could potentially occur in the project area included:

- USGS California 7.5-minute topographic quadrangles for *Antioch North*, *Antioch South*, *Jersey Island*, and *Brentwood*;
- Aerial photographs of the project area and surrounding vicinity (Google Earth 2021);
- USFWS National Wetlands Inventory (USFWS 2021b);
- *Special Animals List* (CDFW 2021b);
- *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2021c);
- *State and Federally Listed Endangered, Threatened and Rare Plants of California* (CDFW 2021d);
- *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2021e);

- California Wildlife Habitat Relationships System (WHRS) (CDFW 2014); and
- Other pertinent databases and literature, including *The Jepson Manual: Vascular Plants of California*, *Second Edition* (Baldwin et. al. 2012).

Based on this background research, a list of special-status species that have the potential to occur or are known to occur in the project area and vicinity was developed. The list was refined based on a reconnaissance-level biological field survey to determine the potential for those species to occur in the project area.

Reconnaissance Survey

A biological survey for special-status species and sensitive natural communities was conducted by Stantec Biologist Scott Elder on June 25, 2021. The biological survey was performed by walking meandering transects throughout the entire project area to characterize habitats, identify any aquatic resources that may be subject to regulatory agency jurisdiction (e.g., United States Army Corps of Engineers [USACE], Regional Water Quality Control Board [RWQCB] and CDFW), assess potential for special-status species to occur, and to record observed species. To better focus the field survey efforts on those plant and animal special-status species that may occur in the project area, a target list of potentially occurring species was developed during the literature and database review process. Plant taxonomy for the botanical survey was determined using the Jepson Manual (Baldwin et al. 2012).

Vegetation Communities

Vegetation types in the project area were classified based on descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988), as well as the *California Natural Community List* (CDFW 2021f), which is adapted from the technical approach and vegetation alliance classification system described in *A Manual of California Vegetation* (Sawyer et al. 2009). The vegetation communities present in the project area are primarily barren and ruderal with urban development. There are no aquatic vegetation communities within the project area. Descriptions of the vegetation communities within the project area are provided below.

Upland Habitat Type

<u>Barren and Ruderal</u>

Barren and ruderal habitat occur within a majority of the project area. This community has a gravel/dirt substrate with opportunistic non-native and invasive ruderal forb

species growing throughout. These species include prickly Russian thistle (*Salsola tragus*), prickly lettuce (*Lactuca serriola*), common sow thistle (*Sonchus oleraceus*), and foxtail barley (*Hordeum murinum*).

Urban/Developed

This land use type does not describe any specific vegetation type under Sawyer et al. (2009) but encompasses land that has been anthropogenically modified with structures and facilities, including roads and buildings. Ornamental plantings and ruderal vegetation may be present within and/or on the margins of developed areas. There are small sections within the project area that include various landscape tree species and have been maintained by the property owner. These areas are adjacent to the existing buildings on site.

Annual Grassland

Annual grassland habitat occurs within the northeast portion of the project area. This habitat is characterized as a moderate herbaceous layer and a limited overstory canopy. Dominant plant species within the annual grassland habitat includes foxtail barley, alkali mallow (*Malvella leprosa*), and Italian rye grass (*Festuca perennis*). This habitat is highly disturbed with vehicle tire tracks throughout the grassland. A handful of large burrows were observed within the grassland habitat; however, these burrows were full leaves and spider webs and were not actively being used.

Habitat Connectivity

Habitat corridors are segments of land that provide linkages for wildlife movement between different habitats while also providing cover. Corridors also function as avenues along which plants can propagate, genetic interchange can occur, populations can move in response to environmental changes and natural disasters, and populations can be replenished from other areas. Habitat corridors often consist of riparian areas along streams, rivers, or other natural features. Habitat corridors have been recognized by federal agencies, such as the USFWS, and the State as important habitats worthy of conservation. In general, movement corridors consist of areas of undisturbed land cover that connect larger, contiguous habitats. The project site does not act as a corridor for species dispersal or provide migration habitat connectivity to adjacent habitat and is not part of any defined essential connectivity areas as identified in the California Essential Habitat Connectivity Project (Spencer et al. 2010).

Invasive Species

Invasive plants (i.e., noxious weeds) are undesirable, non-native plants that commonly invade disturbed sites. Most species were introduced from Europe and Asia and many are known to negatively affect native wildlife habitat and plant communities. When disturbance results in the creation of habitat openings or in the loss of intact native vegetation, invasive plants may colonize the site and spread, often out-competing native species. Once established, they are very difficult to eradicate.

All pertinent non-native plant species were reviewed to determine their status as invasive plants according to the ratings in the California Invasive Plant Inventory produced by California Invasive Plant Council (Cal-IPC) (Cal-IPC 2021). Cal-IPC categorizes non-native invasive plants into three categories of overall negative ecological impact in California as “high”, “moderate”, and “limited”. No invasive species with a Cal-IPC rating of “high” were observed in the project area.

Sensitive Natural Communities and Aquatic Habitats

Habitats are considered “sensitive” by CDFW if they are identified on the List of Vegetation Alliances and Associations as being highly imperiled or classified by CDFW in the CNDDB as natural communities of special concern – Ranks S1 to S3. No sensitive natural communities were documented in the project area during the reconnaissance-level biological field survey. No other natural communities of concern identified by the USACE, RWQCB, and CDFW, including wetlands and other aquatic habitats, were observed within or adjacent to the project area.

Special-Status Species

Plants

Regionally occurring special-status plant species were identified based on a review of pertinent literature, the USFWS species list, CNDDB, and CNPS database records, and the reconnaissance-level biological field survey results. CNDDB special-status plant species occurrences within five miles of the project area are illustrated in Figure 2 of the Biological Resources Technical Report (Appendix B). For each species, habitat requirements were assessed and compared to the habitats in the project area and immediate vicinity to determine if potential habitat occurs in the project area. For the purposes of this review, all regionally occurring plant species listed under the FESA, CESA and CNPS are included in Table 1 of the Biological Resources Technical Report (Appendix B), regardless of whether the project area provides potential habitat. Based on database records, 37 special-status plants were evaluated for their potential to occur

within the project area. Of these 37 species, 17 were determined to be absent and 20 have a low potential to occur. As described in detail in Table 1 of the Biological Resources Technical Report (Appendix B), none were found to have a high or moderate potential to occur.

Animals

Regionally occurring special-status animal species were identified based on a review of pertinent literature, the USFWS species list, CNDDB database records, a query of the California WHRS (CDFW 2014), and the reconnaissance-level biological field survey results. CNDDB special-status animal species occurrences within five miles of the project area are illustrated in Figure 3 of the Biological Resources Technical Report (Appendix B). For each species, habitat requirements were assessed and compared to the habitats in the project area and immediate vicinity to determine the species' potential to occur in or near the project area. For the purposes of this review, all regionally occurring wildlife species listed under the FESA or CESA are included in Table 2 of the Biological Resources Technical Report (Appendix B), regardless of whether the project area provides potential habitat. The literature and database review identified 36 special-status wildlife species with suitable habitat or known to occur in or near the project area. Based on initial assessment of wildlife habitats conducted during the biological survey, 31 of these species were determined to be absent and 5 have a low potential to occur. None of these species were determined to be present or have a high or moderate potential to occur.

3.4.3 Environmental Impact Analysis

This section discusses potential impacts on biological resources associated with the proposed project and provides mitigation measures where necessary.

Impact BIO-1	**Have a substantial adverse effect, either directly or through habitat modifications on any species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?**

Impact Analysis

Special-Status Plant Species

There is no potential habitat at the project site for special-status plant species with occurrences within a five-mile radius and n special-status species were observed during the reconnaissance-level biological survey conducted on June 25, 2021. The annual

grassland habitat within the project site is highly disturbed with vehicle tire tracks through the grassland. In addition, the site is dominated by non-native and invasive plant species including foxtail barley and Italian rye grass. Based on the lack of suitable habitat and no special-status plant species having a moderate or high potential to occur within the project site, no impacts to special-status plant species are expected to occur.

Special-Status Wildlife Species

Although there are CNDDB occurrence records within 5 miles of the project area for special-status wildlife species, the project area does not provide suitable habitat (e.g., aquatic features, woodland) for potential special-status wildlife species to occur. No special-status animal species have a high or moderate potential to occur within the project area. Five species, including white-tailed kite (*Elanus leucurus*), Swainson's hawk (*Buteo swainsoni*), burrowing owl (*Athene cunicularia*), Loggerhead shrike (*Lanius ludovicianus*), and pallid bat (*Antrozous pallidus*), have a low potential to occur in the project area. Marginal nesting and roosting habitat for these species occurs within the project area, however, the site is highly disturbed and surrounded by urban development with limited foraging habitat in the vicinity. The project area does provide suitable nesting habitat for migratory birds and is discussed in detail below.

Trees within the project area could provide suitable nesting habitat for migratory birds protected under the MBTA or California FGC. In addition, the old barn has a couple of boards missing on two sides, allowing for access inside the barn for potential nesting habitat. During the reconnaissance-level biological survey, whitewash was observed on structural wooden beams within the barn, however, no nesting activity was observed. The project anticipates the removal of all existing trees and the barn from the project site. Removal of these features during the typical nesting season (February 1 through September 1) could have an impact to nesting migratory birds.

If tree removal occurs during the typical nesting season (February 1 through September 1), then the proposed project would implement Mitigation Measures BIO-1 through BIO-3 to avoid impacts to migratory nesting birds. These measures include conducting a preconstruction nesting bird survey during the nesting season to document any nests on the project site and implementation of protective buffers around documented nests during construction to minimize disturbance to nesting birds during construction. With the implementation of Mitigation Measures BIO-1 through BIO-3, impacts to special-status wildlife species would be less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM BIO-1 **Avoid Disturbance of Nesting Birds and Pre-Construction Nesting Bird Surveys.** If project activities occur during the nesting season for native birds (February 15 to August 31), the following measures shall be implemented to avoid or minimize the potential for adverse impacts on nesting migratory birds and raptors:

- Pre-construction nesting bird survey for species protected by the Migratory Bird Treaty Act and California Fish and Game Code shall be conducted by a qualified biologist within a 100-foot radius of proposed construction activities for passerines and a 300-foot radius for raptors no more than 14 days prior to the start of construction activities.

- If active nests are found, a qualified biologist shall determine the size of the buffers based on the nesting species and its sensitivity to disturbance. The size of the buffers may be reduced at the discretion of a qualified biologist, but no construction activities shall be permitted within the buffer if they are demonstrated to be likely to disturb nesting birds. Active nest sites shall be monitored periodically to determine time of fledging.

MM BIO-2 **Pre-construction Swainson's Hawk Surveys.** If project construction-related activities would take place during the nesting season (February through August), pre-construction surveys for nesting Swainson's hawks within 0.5-mile radius of the project shall be conducted within 14 days prior to construction activity. Surveys shall be conducted in a manner that maximizes the potential to observe the adult Swainson's hawks, as well as the nest/chicks second. To meet the California Department of Fish and Game's recommendations for mitigation and protection of Swainson's hawks, surveys shall be conducted for a 0.5-mile radius around all project activities, and if active nesting is identified within the 0.5-mile radius, consultation is required. Methodology for surveys can be found in the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley – Swainson's Hawk Technical Advisory Committee (2000).

MM BIO-3 **Pre-construction Burrowing Owl Surveys.** A burrowing owl pre-construction survey shall take place before any construction activities commence. They shall be conducted whenever burrowing owl habitat or sign is encountered on or adjacent to (within 150 meters) of a project site. If a burrowing owl or sign is present on the Property, three additional protocol level surveys shall be initiated.

Once these surveys have been completed to identify the owl's location, disturbance buffers shall be placed around each active burrow. No disturbance shall occur within 200 meters (approximately 655 feet) of occupied burrows during the breeding season (February 1 through August 31) and/or within 50 meters (approximately 165 feet) of occupied burrows during non-breeding season (September 1 through January 31). Preconstruction surveys shall be completed no more than 14 days prior to initiating ground disturbing activities. Surveys and mitigation shall be conducted and implemented in accordance with protocols established in the CDFW's Staff Report on Burrowing Owl Mitigation (2012).

Level of Significance After Mitigation
Less Than Significant Impact with Mitigation.

Impact BIO-2	**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 U.S. Fish and Wildlife Service?**

Impact Analysis
The project site does not contain any sensitive natural communities as classified by the CDFW. In addition, no aquatic habitats were identified within or adjacent to the project site that could be considered Waters of the United States and subject to the USACE and RWQCB jurisdiction under Sections 404 and 401 of the Clean Water Act (CWA), or subject to CDFW jurisdiction under Section 1600 of the California FGC. Therefore, the proposed project would have no impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact BIO-3	**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?**

Impact Analysis
Result of the desktop research and reconnaissance survey conducted by Stantec for the proposed project did not identify any State or federally protected wetlands or other aquatic habitats within the project site (Appendix B). Therefore, the proposed project would not result in a substantial adverse effect on State or federally protected wetlands and there would be no impacts.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact BIO-4	**Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

Impact Analysis
Habitat corridors are segments of land that provide linkages for wildlife movement between different habitats while also providing cover. Corridors also function as avenues along which plants can propagate, genetic interchange can occur, populations can move in response to environmental changes and natural disasters, and populations can be replenished from other areas. Habitat corridors often consist of riparian areas along streams, rivers, or other natural features. Habitat corridors have been recognized by federal agencies, such as the USFWS, and the State as important habitats worthy of

conservation. In general, movement corridors consist of areas of undisturbed land cover that connect larger, contiguous habitats. The project site does not act as a corridor for species dispersal or provide migration habitat connectivity to adjacent habitat and is not part of any defined essential connectivity areas as identified in the California Essential Habitat Connectivity project (Spencer et al. 2010). Therefore, there would be no impact.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact BIO-5	**Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

Impact Analysis
The proposed project would remove existing trees at the project site prior to construction activities. The proposed project would be required to comply with Chapter 5, Article 12: Tree Preservation and Regulation, of the Antioch Municipal Code which requires the Applicant to obtain a permit and approval from the City to remove trees (City of Antioch 2020). As such, the proposed project would not conflict with any local policies or ordinances such as a tree preservation policy and the impacts would be less than significant.

Level of Significance Before Mitigation
Less than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less than Significant Impact.

Impact BIO-6 Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan?

Impact Analysis

The City of Antioch is located within the inventory area of the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP). Although the City is located within the inventory area of the East Contra Costa HCP/NCCP, the City is not a signatory of the plan and thus, the proposed project cannot utilize the East Contra Costa County HCP/NCCP. The City is in the process of developing their own HCP/NCCP. 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. Therefore, there would be no impacts.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

3.5 CULTURAL RESOURCES

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Cause a substantial adverse change in the significance of a historical resource as identified in 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?	☐	☒	☐	☐

3.5.1 Environmental Setting

The Project site is located in a highly developed area of Antioch on Lone Tree Way at Vista Grande Drive. Lone Tree Way is a major arterial street to the north of the project side that provides regional access throughout southeast Antioch. It is six lanes wide with a center median and extends in an east-west direction. Vista Grande Drive is a secondary street located to the east of the project site. It is two lanes wide with a center median and traffic travels in a north-south direction. The topography of the project site and immediate vicinity is relatively flat. Surrounding land uses include commercial development such as restaurants, retail shops, and offices as well as residential development such as single-family and multi-family residences. Adjacent buildings are generally low scale, ranging from one to two stories.

The area of Antioch where the project site is located was devoted to agriculture throughout the late 19th century and much of the 20th century. In the 1990s and 2000s, the surrounding land was subdivided into tracts and the majority of the existing residential and commercial development constructed. The date of construction for the buildings on the project site is noted by the Contra Costa County Assessor's Office as 1926. The six buildings on the project site are not currently listed under national State, or local landmark or historic district programs and are not included as significant in any historic resource surveys of the area. The buildings located on site do not meet the criteria for listing in the National Register of Historic Places (NRHP) or California Register of Historic Places (CRHR) as a historic district nor do the individual buildings and structure appear eligible for listing (Appendix C). Additionally, the project site exhibits a low sensitivity for the presence of surface or subsurface cultural resources.

3.5.2 Methodology

To determine the presence or absence of cultural resources within the project site and vicinity, Stantec prepared a Cultural Resources Technical Report on August 27, 2021. The cultural resources assessment was conducted to satisfy the requirements of CEQA and follows CEQA Appendix G Guidelines. The Stantec 2021 Cultural Resources Technical Report is provided as Appendix C.

Records Search and Field Survey

To identify historical and archaeological resources in the project area and assess any potential impacts the proposed project may have on identified resources, Stantec performed the following tasks:

- Conducted a field inspection of the project site and vicinity, during which Stantec determined the scope of the study as well as assessed the general condition and physical integrity of the project site and six existing buildings. Digital photographs of the project site and building exteriors were taken during the field inspection.

- Identified a Study Area to account for potential impacts on historical resources in the vicinity. See Section 4.0 of the Cultural Resources Technical Report for more information (Appendix C).

- Reviewed existing information to determine if there are any listed or previously surveyed historical or archaeological resources within the Study Area. The following sources were consulted:

    - Requested a records search from the Northwest Information Center (NWIC) in Rohnert Park, California on June 30, 2021. The purpose of this search was to determine whether or not the Study Area contained any resources that were currently listed under national, State, or local landmark or historic district programs and whether or not it contained resources that have been previously identified or evaluated as potential historical resources. This involved a review of the California Historic Resources Inventory System (CHRIS), which includes data on properties listed and determined eligible for listing in the NRHP, listed and determined eligible for listing in the CRHR, California Registered Historical Landmarks, Points of Historical Interest, as well as properties that have been evaluated in historic resource surveys and other planning activities.

- Consulted the California Built Environment Resource Directory (BERD), which is maintained by the California Office of Historic Preservation (OHP), to determine if the project area or immediate vicinity contains any resources listed and determined eligible for listing in the National Register, listed and determined eligible for listing in the California Register, or that had been evaluated in historic resource surveys and other planning activities.

The results of the above research can be found in Section 5.0, Environmental Setting of the Cultural Resources Technical Report (Appendix C).

- Conducted research into the history of the project site and the surrounding area. Sources consulted include City of Antioch building permit records, newspaper archives, census data, and public records available through Ancestry.com, Sanborn Fire Insurance maps available through the Los Angeles Public Library, as well as historic aerial photographs available through the University of California, Santa Barbara. Access to materials beyond those listed above was restricted due to the ongoing COVID-19 health emergency.

- Reviewed and analyzed ordinances, statutes, regulations, bulletins, and technical materials relating to national, State, and local historic preservation designations, and assessment processes and programs to evaluate the significance and integrity of the six buildings on the project site as potential historical resources.

- Conducted an archaeological survey of the of the project site that met professional standards. The field survey was conducted by walking parallel, east-west transects of approximately ten to twenty meters. All areas of recent disturbance, including rodent burrows, were closely examined. Boot scrapes were employed to determine approximate gravel depth where there was 0% visibility.

The records search and desktop archaeological review did not identify any prehistoric or historical archaeological resources. The project site generally exhibits a low sensitivity for the presence of surface or subsurface cultural resources.

Native American Consultation

On June 30, 2021, Stantec sent an email with a project description and a map depicting the project area to the Native American Heritage Commission (NAHC) requesting a CEQA Tribal Consultation List (AB 52) and a review of the Sacred Lands File (SLF) for

Native American cultural resources that might be affected by the proposed project. The NAHC responded on July 23, 2021, stating that the results of the SLF were negative.

The NAHC provided a list of 19 Native American individuals and organizations to contact for additional information about sacred sites or Tribal Cultural Resources (TCR) in the project vicinity:

- Irene Zwierlein (Chairperson, Amah Mutsun Tribal Band of Mission San Juan Bautista)
- Lloyd Mathiesen (Chairperson, Chicken Ranch Rancheria of Me-Wuk Indians)
- Corrina Gould (Chairperson, The Confederated Villages of Lisjan)
- Donald Duncan (Chairperson, Guidiville Indian Rancheria)
- Ann Marie Sayers (Chairperson, Indian Canyon Mutsun Band of Costanoan)
- Randy Yonamura (Ione Band of Miwok Indians)
- Rosemary Cambra (Chairperson, Muwekma Ohlone Indian Tribe of the SF Bay Area)
- Charlene Nijmeh (Chairperson, Muwekma Ohlone Indian Tribe of the SF Bay Area)
- Monica Arellano (Vice Chairwoman, Muwekma Ohlone Indian Tribe of the SF Bay Area)
- Cosme Valdez (Chairperson, Nashville Enterprise Miwok-Maidu-Nishinam Tribe)
- Katherine Erolinda Perez (Chairperson, North Valley Yokuts Tribe)
- Timothy Perez (MLD Contact, North Valley Yokuts Tribe)
- Andrew Galvan (The Ohlone Indian Tribe)
- Neil Peyron (Chairperson, Tule River Indian Tribe)
- Antonio Ruiz Jr. (Cultural Resources Officer, Wilton Rancheria)
- Jesus Tarango (Chairperson, Wilton Rancheria)

- Steven Hutchason (Tribal Heritage Preservation Officer, Wilton Rancheria)
- Dahlton Brown (Director of Administration, Wilton Rancheria)
- Kenneth Woodrow (Chairperson, Wuksache Indian Tribe/Eshom Valley Band)

The City, as Lead Agency, opted to send certified notification letters to each of the individuals and organizations identified by the NAHC on July 29, 2021. The letters contained a description of the proposed project and project location, a map of the project area, an invitation to consult on the project and contact information and asked for responses within 30 days. Additionally, emails were distributed with contact information and digital copies of the notifications to the individuals and organization identified by the NAHC on July 30, 2021. Follow up phone calls were made to each contact on August 13, 19 and 26, 2021.

In response to a follow-up telephone call placed on August 13, 2021, Meyo Marrufo, the Environmental Director of the Guidiville Indian Rancheria, stated that the proposed project was of no environmental or cultural resource concern for the tribe, but to please notify if any cultural resources were identified in the course of the proposed project.

3.5.3 Environmental Impact Analysis

This section addresses potential impacts to cultural resources, both historical and archaeological, that could result from the proposed project. Tribal cultural resources, as that term is defined in Public Resources Code Section 21074, are addressed in Section 3.18, Tribal Cultural Resources, of this report. As updated in 2016, CEQA separates the consideration of paleontological resources from cultural resources (PRC Section 21083.09). Paleontological resources are addressed in Section 3.7, Geology and Soils, of this ISMND.

Impact CUL-1 Cause a substantial adverse change in the significance of a historical resource as identified in Section 15064.5?

Impact Analysis

A Cultural Resources Technical Report was prepared by Stantec in August 2021 that analyzes whether the proposed project would impact historical resources as defined by CEQA. The following analysis is based on information provided in this report, which is included in Appendix C.

The proposed project would demolish the existing six buildings on the project site, which include a residence, two barns, two sheds, and a tankhouse. According to the Contra Costa County Assessor, the buildings were constructed in 1926 as part of a farm property. Research revealed that the property was likely originally built for owner Frederick H. Heidorn, Sr., a farmer whose family settled in east Contra Costa County in the 1870s.

As the buildings are over 50 years of age, Stantec architectural historians evaluated the property for the National Register of Historic Places and California Register of Historical Resources. The City of Antioch does not have a local landmark designation program or maintain a local historic register. Stantec concluded that the buildings on the project site do not appear to be individually eligible for the NRHP or CRHR nor are they contributors to a potential historic district due to a lack of significance and integrity. Therefore, the six buildings on the project site are not historical resources as defined by CEQA.

Stantec established a study area (Study Area) to account for potential impacts on historical resources in the vicinity. The Study Area includes the project site and parcels within a 100-foot radius. Stantec also reviewed existing information to determine if there are any listed or previously surveyed historical resources within the Study Area. No NRHP or CRHR eligible or listed resources are located within the Study Area.

The threshold for determining significant impacts on historical resources in the State CEQA Guidelines is whether the proposed project would cause a substantial adverse change, which is defined as demolition, destruction, relocation, or alteration of the resource or its immediate vicinity such that the historical resource is materially impaired. As the existing buildings on the project site that would be removed do not meet the definition of a historical resource according to CEQA as they are not eligible for listing as a resource in NRHP or CRHR, the proposed project would have no direct impacts on historical resources. As noted above, there are no previously identified historical resources within the Study Area. Therefore, the proposed project would have no indirect impact on identified historical resources in the vicinity. No mitigation is required or recommended.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact CUL-2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Impact Analysis

An archival record search and literature review and Native American consultation were performed as part of the cultural resources inventory for the project. No archaeological resources were identified within the project area. The project site is already developed as a former agricultural property. The proposed project proposes the demolition of existing structures and the development a new gas station that would include a convenience store and attached car wash, canopy with eight fuel dispensers, two underground storage tanks, as well as related site improvements and landscaping. The proposed project is therefore not anticipated to have an impact on any known or potential archaeological resources.

However, subsurface construction activities associated with the proposed project could potentially damage or destroy previously undiscovered unique archaeological resources. Consistent with the City's General Plan, a mitigation measure is presented below to reduce potential impacts to cultural resources in the unlikely event said resources are discovered or disturbed during grading or construction activities associated with the implementation of the proposed new gas station project. Therefore, Mitigation Measure CUL-1 is proposed requiring implementation of standard inadvertent discovery procedures to reduce potential impacts to previously undiscovered subsurface unique archaeological resources. With the implementation of Mitigation Measure CUL-1, potential impacts would be reduced to a less than significant level.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM CUL-1 **Cultural Materials Discovered During Construction.** If any cultural resource is encountered during ground disturbance or subsurface construction activities (e.g., trenching, grading), all construction activities within a 50-foot radius of the identified potential resource shall cease until a qualified archaeologist who meets the Secretary of the Interior's Standards and Guidelines for Professional Qualifications in archaeology

and/or history evaluates the resource for its potential significance and determines whether the resource requires further study. If the qualified archaeologist determines that the cultural resource does not appear to be eligible for inclusion on the CRHR, it will be appropriately documented on Department of Parks and Recreation (DPR) 523 series forms and project activity may resume. If the qualified archaeologist determines that the cultural resource appears eligible for inclusion on the CRHR, the archaeologist shall make recommendations to the City of Antioch on the measures to be implemented to protect the discovered resources. The measures may include avoidance, preservation in place, data recovery excavation, or other appropriate measures outlined in PRC Section 21083.2. Any previously undiscovered resources found during construction within the project area should be recorded on appropriate DPR forms and evaluated for significance in terms of CEQA criteria. The applicant shall be responsible for the costs of retaining a qualified archaeologist and the recording of resources on DPR forms.

No further grading shall occur within a 50-foot radius of the discovery until the City of Antioch approves the measures to protect these resources. Any archaeological artifacts recovered because of mitigation shall be donated to a qualified scientific institution approved by the City where they would be afforded long-term preservation to allow future scientific study.

Level of Significance After Mitigation
Less Than Significant Impact with Mitigation.

Impact CUL-3 Disturb any human remains, including those interred outside of dedicated cemeteries?

Impact Analysis
There are no known human remains within the project area, and no indications that the project location has been used for burial purposes in the past. Therefore, it is unlikely that human remains would be encountered during construction. However, ground disturbance and subsurface construction activities associated with the proposed project could potentially disturb previously undiscovered human burial sites. The implementation of Mitigation Measure CUL-2 would reduce impacts to a less than significant level by ensuring compliance with Section 7050.5 of the California Health and Safety Code and PRC 5097.98.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM CUL-2 **Human Burials Encountered During Construction.** If ground-disturbing activities uncover previously unknown human remains, Section 7050.5 of the California Health and Safety Code applies, and the following procedures shall be followed:

There shall be no further excavation or disturbance of the area where the human remains were found or within 50 feet of the find until the Contra Costa County Coroner and the appropriate City representative are contacted. Duly authorized representatives of the Coroner and the City shall be permitted onto the project site and shall take all actions consistent with Health and Safety Code Section 7050.5 and Government Code Sections 27460, et seq. Excavation or disturbance of the area where the human remains were found or within 50 feet of the find shall not be permitted to re-commence until the Coroner determines that the remains are not subject to the provisions of law concerning investigation of the circumstances, manner, and cause of any death. If the Coroner determines the remains are Native American, the Coroner shall contact the 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, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98. If the MLD does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from further disturbance. If the landowner does not accept the MLD’s recommendations, the owner or the MLD may request mediation by NAHC.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

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3.6 ENERGY

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

3.6.1 Environmental Setting

Pacific Gas and Electric Company provides electricity and natural gas service to the City. Upon buildout of the project site, electricity to the project site would be provided by PG&E. All electricity infrastructure would be located underground and would tie-in to existing infrastructure.

In February 2018, PG&E announced that it had reached California's 2020 renewable energy goal 3 years ahead of schedule, and now delivers nearly 80 percent of its electricity from GHG-free resources. Approximately 33 percent of PG&E's electricity came from renewable resources including solar, wind, geothermal, biomass and small hydroelectric sources in 2017. Additionally, approximately 78.8 percent of PG&E's total electric power mix is from GHG-free sources including nuclear, large hydro and renewable sources of energy (PG&E 2018).

3.6.2 Methodology

The energy requirements for the proposed project were determined using the construction and operational estimates generated from the Air Quality Analysis (refer to Appendix A). The calculation worksheets for diesel fuel consumption rates for off-road construction equipment and on-road vehicles are provided in Appendix D. Short-term construction energy consumption is discussed below.

Short-Term Construction

Off-Road Equipment

The proposed project is anticipated to be constructed June 2022 through January 2023. Table 3.6-1 provides estimates of the project's construction fuel consumption from off-road construction equipment. As shown in Table 3.6-1, construction activities

associated with the proposed project would be estimated to consume 4,843.72 gallons of diesel fuel. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in other parts of the State. Therefore, it is expected that construction fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.

Table 3.6-1. Construction Off-Road Fuel Consumption

Project Component	Phase	Fuel Consumption (gallons)
5200 Lone Tree Way United Pacific Gas Station Project	Demolition	521.24
	Site Preparation	51.99
	Grading	120.45
	Building Construction	3,821.10
	Paving	273.18
	Architectural Coating	55.77
Total		**4,843.72**

Source: Energy Consumption Summary (Appendix D)

On-Road Vehicles

On-road vehicles for construction workers, vendors, and haulers would require fuel for travel to and from the site during construction. Table 3.6-2 provides an estimate of the total on-road vehicle fuel usage during construction. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in other parts of the State. Therefore, it is expected that construction fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.

Table 3.6-2. Construction On-Road Fuel Consumption

Project Component	Total Annual Fuel Consumption (gallons)
5200 Lone Tree Way United Pacific Gas Station Project Construction	60,710

Source: Energy Consumption Summary (Appendix D)

Long-Term Operations

Transportation Energy Demand

Table 3.6-3 provides an estimate of the daily and annual fuel consumed by vehicles traveling to and from the proposed project. These estimates were derived using the same assumptions used in the operational air quality analysis for the proposed project. As shown below, daily vehicular fuel consumption is estimated to be 228.8 gallons of both gasoline and diesel fuel. Annual consumption is estimated at 83,503 gallons.

In terms of land use planning decisions, the proposed project would constitute development within an established community and would not be opening a new geographical area for development such that it would draw mostly new trips or substantially lengthen existing trips. The proposed project would be well positioned to accommodate existing population. For these reasons, it would be expected that vehicular fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than for any other similar land use activities in the region.

Table 3.6-3. Long-Term Operational Vehicle Fuel Consumption

Vehicle Type	Percent of Vehicle Trips[1]	Daily Vehicle Miles Traveled	Annual Vehicle Miles Traveled	Average Fuel Economy (miles/ gallon)[2]	Total Daily Fuel Consumption (gallons)	Total Annual Fuel Consumption (gallons)
Passenger Cars (LDA)	55.8%	2,949.4	1,076,534	30.3	97.4	35,539.9
Light Trucks and Medium Duty Vehicles (LDT1, LDT2, MDV)	36.6%	1,936.7	706,894.2	22.6	85.8	31,314.1
Light-Heavy to Heavy-Heavy Diesel Trucks (LHD1, LHD2, MHDT, HHDT)	4.4%	231.6	84,543.1	9.4	24.7	9,020.2
Motorcycles (MCY)	0.6%	29.6	10,813.8	41.0	0.7	263.5
Other[3] (OBUS, UBUS, SBUS, MH)	2.6%	137.5	50,186.2	6.8	20.2	7,365.6
Total	**100%**	**5,284.9**	**1,928,975.1**	**-**	**228.8**	**83,503.2**

Notes:
[1]Percent of Vehicle Trips and VMT provided by California Emissions Estimator Model.
[2]Average fuel economy was calculated using EMFAC 2021 Emissions Inventory for Contra Costa County and reflects fuel economy of overall fleet, not just new vehicles.
[3]"Other" definitions are OBUS = other buses except school buses and urban buses; UBUS = Urban transit buses; SBUS = School bus; MH = Mobile Home
Source: Energy Consumption Summary (Appendix D)

Building Energy Demand

As shown in Tables Table 3.6-4 and Table 3.6-5, the proposed project is estimated to demand 45,061 kilowatt-hours (KWhr) of electricity and 37,071 kilo British thermal units (KBTU) of natural gas, respectively, on an annual basis.

Table 3.6-4. Long-Term Electricity Usage

Land Use	Size (sf)	Title 24 Electricity Energy Intensity (KWhr/ size/ year)	Nontitle 24 Electricity Energy Intensity (KWhr/ size/ year)	Lighting Energy Intensity (KWhr/ size/ year)	Total Electricity Energy Demand (KWhr/ size/ year)	Total Electricity Demand (KWhr/ year)
Automobile Care Center	1,130	1.32	3.7	3.08	8.1	9,153
Convenience Market with Gas Pumps	3,200	2	2.68	5.25	10.39	33,248
Parking Lot	7,600	0	0	0.35	0.35	2,660
Total						**45,061**

Notes:
sf = square feet; KWhr= kilowatt hour
Source: Energy Consumption Summary (Appendix D)

Table 3.6-5. Long-Term Natural Gas Usage

Land Use	Size (sf)	Title 24 Natural Gas Energy Intensity (KBTU/size/year)	Nontitle 24 Natural Gas Energy Intensity (KBTU/size/ year)	Total Natural Gas Energy Demand (KBTU/size/ year)	Total Natural Gas Demand (KBTU/year)
Automobile Care Center	1,130	19.51	6.67	26.18	29,583.40
Convenience Market with Gas Pumps	3,200	2.34	0	2.34	7,488.00
Total					**37,071**

Notes:
sf = square feet; KBTU= kilo British thermal units
Source: Energy Consumption Summary (Appendix D)

3.6.3 Environmental Impact Analysis

This section discusses potential energy impacts associated with the proposed project and provides mitigation measures where necessary.

Impact EN-1	**Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?**

Impact Analysis
This impact addresses the energy consumption from both the short-term construction and long-term operations are discussed separately below.

Construction Energy Demand

As summarized in Table 3.6-1 and Table 3.6-2, the proposed project would require 4,843.72 gallons of diesel fuel for construction off-road equipment and 60,845 gallons of gasoline and diesel for on-road vehicles during construction. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in other parts of the State. Therefore, it is expected that construction fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region, and as such, impacts would be less than significant.

Long-Term Energy Demand

Building Energy Demand

Buildings and infrastructure constructed pursuant to the proposed project would comply with the versions of CCR Titles 20 and 24, including CALGreen, that are applicable at the time that building permits are issued. The proposed project is estimated to demand 45,061 KWhr of electricity per year and 37,071 KBTU of natural gas per year. This would represent an increase in demand for electricity and natural gas.

It would be expected that building energy consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than for any other similar buildings in the region. Current State regulatory requirements for new building construction contained in the 2019 CALGreen and Title 24 standards would increase energy efficiency and reduce energy demand in comparison to existing commercial structures, and therefore would reduce actual environmental effects associated with

energy use from the proposed project. Additionally, the CALGreen and Title 24 standards have increased efficiency standards through each update.

Therefore, while the proposed project would result in increased electricity and natural gas demand, the electricity and natural gas would be consumed more efficiently and would be typical of a similar gas station. Compliance with future building code standards would result in increased energy efficiency.

Based on the above information, the proposed project would not result in the inefficient or wasteful consumption of electricity or natural gas, and impacts would be less than significant.

Transportation Energy Demands

The daily vehicular fuel consumption is estimated to be 228.8 gallons of both gasoline and diesel fuel. Annual consumption is estimated at 83,503 gallons. The proposed project would provide services for existing development within an established community and would not be opening a new geographical area for development such that it would draw mostly new trips or substantially lengthen existing trips. The proposed project would be well positioned to accommodate existing population and reduce vehicle miles traveled (VMT). For these reasons, it would be expected that vehicular fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than for any other similar land use activities in the region, and impacts would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact EN-2	**Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?**

Impact Analysis
The City has adopted the Community Climate Action Plan (CAP) and the Municipal CAP. The Community CAP includes strategies focused on green building, renewable

energy, transportation and land use, and education and behavior change. The Municipal CAP has been developed to address GHG emissions resulting from municipal operations and infrastructure and includes energy efficiency and renewable energy measure and policies. The proposed project would not conflict with the energy objectives nor the strategies in its CAPs. The proposed project would be well positioned to accommodate existing population and reduce VMT. The proposed project would comply with the versions of CCR Titles 20 and 24, including CALGreen, that are applicable at the time that building permits are issued and with all applicable City measures.

For the above reasons, the proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency, and impacts would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

3.7 GEOLOGY AND SOILS

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☒	☐	☐

3.7.1 Environmental Setting

Regional Setting

The City of Antioch is in Contra Costa County and is characterized as a geologically young region. The City is defined by two general topographic areas: Lowland Area and Upland Area. The Lowland area includes the estuarine and flatland soils near the San Joaquin River and the low-lying areas in the western and eastern portions of the City,

and the Upland Area includes the hillside soils in the southern portion of the City. The Lowland Area is underlain by alluvium and consists of unconsolidated floodplain deposits with sand, silt, gravel, and clay. Soils in the Lowland Area include well drained Rincon clay loam with moderate shrink-swell potential and Delhi Sand with low shrink-swell potential. The Upland Area consists primarily of tilted sedimentary rocks, sandstone, siltstone, and surficial deposits (City of Antioch 2003b). Native soils in the Upland Area consist of clay, clay loam, loam, and loamy sand. The shrink-swell potential of these soils ranges from low to high depending on the soil type (City of Antioch 2003b).

Eastern Contra Costa County and the Bay Area are in a seismically active region. Major earthquakes have occurred near Antioch in the past and can be expected to occur in the near future (City of Antioch 2003b). The California Geological Survey defines an active fault as one that has had surface displacement in the last 11,000 years or has experienced earthquakes in recorded history. Although there are no active faults in the City, there are several major faults located within a few miles including, the Hayward Fault, Calaveras Fault, Concord-Green Valley Fault, and Marsh Creek-Greenville Fault (City of Antioch 2003b). The San Andreas Fault is located approximately 45 miles west of the City. The intensity of ground shaking that would occur in Antioch because of an earthquake in the Bay Area depends on the size, distance, and response of the geologic materials in the area (City of Antioch 2003b). Strong ground shaking that occurs during earthquakes can induce other geologic hazards such as liquefaction, landslides, subsidence, lateral spreading, or collapse. The potential for these geologic hazards ranges from low to very high and depends on soil conditions, groundwater levels, and slope stability.

The 1972 Alquist-Priolo Earthquake Fault Zoning Act requires the California Geological Survey to establish regulatory Earthquake Fault Zones around the surface ruptures of active faults to reduce the hazard of surface fault rupture to structures built for human occupancy. There are no Alquist-Priolo Earthquake Fault Zones in the City (City of Antioch 2003b). However, the City is located within a seismically active region, and earthquakes have the potential to cause ground shaking of significant magnitude.

Project Site Setting

The existing site is occupied by a single-story residential structure, a single-story barn structure, a single-story three car garage structure, two seatrain storage containers, two small sheds, and a domestic water tower structure. The rest of the project site consists of land utilized for vehicle and equipment storage for a paving company (Salem

Engineering 2019). A search of the USDA Soil Map found that the project site soils is composed of Capay clay and Rincon clay loam. Capay clay consists of moderately well drained soils on stream terraces and alluvial fans. Rincon clay loam is characterized as being well drained soils on terraces and alluvial fans (USDA 2021). According to Figure 4.5.4 in the EIR prepared for the General Plan, the project site is in an area with moderate susceptibility for liquefaction and USGS classifies the project site as having moderate susceptibility for liquefaction (City of Antioch 2003b, USGS 2021a). The project site is mapped in an area that is mapped as very stable and is not located within a landslide hazard zone (City of Antioch 2003b).

3.7.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the General Plan, General Plan EIR, USGS earthquake seismic hazard maps, USGS land subsidence in California Map, and the University of California Museum of Paleontology (UCMP) database for mammal fossils. The following impact discussions consider the effects of the proposed project related to geology and soils in the City.

Paleontological Resources

According to the General Plan EIR, numerous fossils have been collected from within the City. A fossil locality search at the Cultural Access Services identified marine fossils collected from almost all the sedimentary formations located in Antioch. Literature review also indicated that all the formations north of Mt. Diablo contain fossils. There are at least eight fossil localities within and immediately adjacent to the City's Planning Area and another five are within a 1-mile radius of the City's Planning Area. Fossils in the City's Planning Area identified by the California Museum of Paleontology, UC Berkeley include mammoths, primitive horses, bison, rats, beaver-type creatures, and sloths (City of Antioch 2003b).

3.7.3 Environmental Impact Analysis

This section discusses potential impacts related to geology and soils associated with the proposed project and provides mitigation measures where necessary.

Impact GEO-1 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?

Impact Analysis

i. Fault Rupture

There are no Alquist-Priolo Earthquake Fault Zones in the City. The nearest Alquist-Priolo Earthquake Fault Zones are the Concord-Green Valley Fault, located approximately 13.5 miles southwest of the project site, and the Greenville Fault, located approximately 9.5 miles south of the project site (DOC 2021). Due to the lack of Alquist-Priolo fault zones in the project site, the risk of surface rupture near the project site is low and the potential for damage to structures at the project site due to rupture of a known earthquake fault is low. Thus, the proposed project would not exacerbate existing conditions by bringing people or structures into areas potentially susceptible to substantial effects, including fault rupture, that could result in substantial damage to proposed structures or infrastructure, or expose people to substantial risk of injury. Impacts associated with surface rupture from a known earthquake fault would be less than significant.

ii. Ground Shaking

The project site is in a seismically active region and earthquake-related ground shaking is expected to occur during the design life of the proposed project. According to the USGS Fault Activity Map of California and the USGS National Seismic Hazard Maps—Source Parameters indicates the nearest major active fault is the Greenville Fault, located approximately 9.5 miles south of the project site (DOC 2021). In addition, other faults in the San Francisco Bay Area may cause strong seismic ground shaking at the

project site. The proposed project would be constructed in conformance with the latest edition of the California Building Code, which includes engineering standards appropriate to withstand anticipated ground accelerations at the project site. Conformance with the earthquake design parameters of the California Building Code would be subject to City review as part of the building site plan review and building permit review process. Furthermore, the proposed project would be required to comply with the General Plan Policy 11.3.2-a, which requires geologic and soils reports to be prepared for proposed development sites and incorporate the findings and recommendations of the studies into project development requirements and a site-specific assessment will be prepared to ascertain potential ground shaking impacts on new development, and General Plan Policy 11.3.2-k, which requires specialized soils reports (City of Antioch 2003a). The recommendations and findings identified in the site-specific geotechnical analysis would be incorporated into the proposed project as part of Mitigation Measure GEO-1. Therefore, impacts related to ground shaking at the project site would be less than significant with implementation of Mitigation Measure GEO-1.

iii. Ground Failure, including Liquefaction

According to Figure 4.5.4 in the EIR prepared for the General Plan, the project site is in an area with moderate susceptibility for liquefaction and USGS classifies the project site as having moderate susceptibility for liquefaction (City of Antioch 2003b, USGS 2021a). Buildout of the proposed project and adjacent off-site areas would potentially place buildings and structures on areas susceptible to liquefaction. Therefore, the project could potentially expose people and structures to substantial adverse effects associated with ground shaking, ground failure, and liquefaction. Ground failure due to liquefaction or lateral spreading could compromise the structural stability of the buildings if they are not designed to accommodate liquefaction or lateral spreading.

As described above, the project design would be required to conform to the latest edition of the California Building Code, City Municipal Code (Section 9-4.513), and General Plan Policies 11.3.2-a, 11.3.2-k, which requires site-specific soil reports to be prepared for all new developments in the City. The project design would also be required to comply with General Plan Policy 11.3.2.l, which requires the project to implement adequate and appropriate measures to reduce potential liquefaction hazards where development is proposed within an identified or potential liquefaction hazard area (City of Antioch 2017; 2003a). The recommendations indicated in the site-specific soil report would be incorporated into the project design as part of Mitigation Measure GEO-1. Additionally, the proposed project would implement the recommendations indicated in a design-level geotechnical engineering report and measures to address to mitigate, at

a minimum, slope stability, liquefiable soils, and ground shaking as part of Mitigation Measure GEO-2. Therefore, impacts related to liquefaction would be less than significant with Mitigation Measures GEO-1 and GEO-2 incorporated.

iv. Landslides

The project site and the surrounding areas are relatively flat and the project site is located in an area that is mapped as very stable (City of Antioch 2003b). Therefore, the potential for a landslide to occur is low. There would be a less than significant impact related to landslides.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures

MM GEO-1 **Implement Geotechnical Design Recommendations.** Prior to issuance of grading permits, the applicant shall incorporate all design specifications and recommendations contained within the site specific geotechnical analysis report into relevant project plans and specifications. These specifications pertain to but are not limited to expansive soils, building foundations, foundation drainage, and backfill of excavations. The project site plans shall be submitted to the City and reviewed as part of the building permit review process.

MM GEO-2 **Implement Potential Liquefaction Hazard Recommendations.** Prior to the issue of building permits, the project applicant shall submit to the City of Antioch Building Division, for review and approval, a design-level geotechnical engineering report produced by a California Registered Civil Engineer or Geotechnical Engineer. The design-level report shall include measures to address construction requirements to mitigate, at a minimum, slope stability, liquefiable soils, and ground shaking. Recommendations of adequate and appropriate measures will be implemented, including, but not limited to designing foundations in a manner that limits the effects of liquefaction; the placement of an engineered fill with low liquefaction potential; and the alternative siting of structures in areas with a lower liquefaction risk.

Level of Significance After Mitigation
Less Than Significant Impact with Mitigation.

Impact GEO-2 Result in substantial soil erosion or the loss of topsoil?

Impact Analysis

Construction activities associated with the proposed project would require demolition, grading, utility connections, construction of the new streets, development of a gas station, convenience store, and car wash, and landscaping on the 2 acre project site. Construction of the proposed project would involve approximately 640 CY of onsite material to be cut and regraded. These activities could expose unprotected soils to stormwater runoff, causing erosion and loss of topsoil. Projects that disturb 1 acre or more of soils during construction are required to comply with the National Pollutant Discharge Elimination System (NPDES) permitting program and implement a Stormwater Pollution Prevention Plan (SWPPP) that identifies best management practices to control the discharge of sediment and other pollutants during construction. As described in Section 3.10, Hydrology and Water Quality, the proposed project would implement a SWPPP and associated BMPs as part of Mitigation Measure HYD-1 to reduce erosion impacts. Therefore, soil erosion impacts associated with construction impacts would be less than significant with implementation of Mitigation Measure HYD-1.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure HYD-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact GEO-3 Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?

Impact Analysis

The project site and surrounding area contains generally flat relief and is in an area where slopes are considered very stable (City of Antioch 2003b). The project site is not designated in an area where historic or current groundwater pumping, oil extraction, or mining operations have occurred (City of Antioch 2003b). Furthermore, the project site is not adjacent to a stream bank, levee, or other open face that would be susceptible to

lateral spreading. The USGS Areas of Land Subsidence in California map does not identify the project site as areas of recorded subsidence (USGS 2021b).

The proposed project would be required to comply with the latest edition of the California Building Code, City Municipal Code (Section 9-4.513), General Plan Policies 11.3.2-a and 11.3.2-k, which requires site-specific soil reports to be prepared for proposed development sites in the City and requires that findings and recommendations of the studies be incorporated into project development requirements. Additionally, General Plan Policy 11.3.2.l requires the project to implement adequate, and appropriate measures to reduce potential liquefaction hazards where development is proposed within an identified or potential liquefaction hazard area (City of Antioch 2017; 2003b). The recommendations indicated in the site-specific soil report would be incorporated into the project design as part of Mitigation Measure GEO-1. The City would review the project design plans during the building permit approval process to confirm these recommendations are incorporated into the proposed project. Additionally, the project will implement the recommendations indicated in a design-level geotechnical engineering report and measures to address to mitigate, at a minimum, slope stability, liquefiable soils, and ground shaking as part of Mitigation Measure GEO-2. As such, impacts related to unstable soils would be less than significant with Mitigation Measures GEO-1 and GEO-2 incorporated.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures
Mitigation Measures GEO-1 and GEO-2 are required.

Level of Significance After Mitigation
Less Than Significant Impact with Mitigation.

Impact GEO-4	**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?**

Impact Analysis
Surface soils found in the vicinity of the project site are classified as Capay clay and Rincon clay loam. Capay clay is characterized as moderately well to somewhat poorly drained, negligible to high runoff, and slow to very slow permeability (USDA 2018). Rincon clay loam is characterized as well drained, slow to rapid runoff, and slow permeability (USDA 2017).

The proposed project would be required to comply with the latest edition of the California Building Code, City Municipal Code (Section 9-4.513), and General Plan Policies 11.3.2-a and 11.3.2-k, which requires site-specific soil reports to be prepared for all new developments in the City (City of Antioch 2003a). The recommendations indicated in the site-specific soil report would be incorporated into the project design as part of Mitigation Measure GEO-1. Therefore, impacts related to expansive soil would be less than significant with Mitigation Measure GEO-1 incorporated.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures
Mitigation Measure GEO-1 is required.

Level of Significance After Mitigation
Less Than Significant Impact with Mitigation.

Impact GEO-5 Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Impact Analysis
The proposed project would connect directly to the City's municipal sewer system and would not require the construction of septic tanks or any other alternative wastewater disposal system. Therefore, no impact would occur.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact GEO-6 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact Analysis
According to the General Plan EIR, numerous fossils have been collected from within

the City. There are at least eight fossil localities within and immediately adjacent to the City's Planning Area and another five are within a 1-mile radius of the City's Planning Area. Fossils in the City's Planning Area identified by the California Museum of Paleontology, UC Berkeley include mammoths, primitive horses, bison, rats, beaver-type creatures, and sloths (City of Antioch 2003b). Due to the disturbed nature of the project site, it is unlikely that undiscovered paleontological resources would be present. However, the proposed project would include ground disturbance during construction which could potentially directly or indirectly destroy an unknown unique paleontological or unique geologic feature. If unknown unique paleontological resources are discovered onsite during construction, all activities would be stopped within a 50-foot radius of the identified resource until a qualified paleontologist evaluates the finding as required by Mitigation Measure GEO-3. Therefore, impacts to paleontological or unique geologic features would be less than significant with implementation of Mitigation Measure GEO-3.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures

MM GEO-3 Procedures for Paleontological Resources Discovered During Construction. If any paleontological resources are encountered during ground-disturbing or subsurface construction activities (e.g., trenching, grading), all construction activities within a 50-foot radius of the identified resource shall cease and the City shall immediately be notified. The applicant shall retain a qualified paleontologist (as approved by the City) to evaluate the find and recommend appropriate treatment of the inadvertently discovered paleontological resource. The appropriate treatment of an inadvertently discovered paleontological resource shall be implemented to ensure that impacts to the resource are avoided.

Level of Significance After Mitigation
Less Than Significant Impact with Mitigation.

3.8 GREENHOUSE GASES

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

3.8.1 Environmental Setting

The issue of combating climate change and reducing GHG emissions has been the subject of State legislation (AB 32 and Senate Bill 375). The Governor's Office of Planning and Research (OPR) has adopted changes to CEQA Guidelines and the environmental checklist which is used for Initial Studies such as this one. The changes to the checklist, which were approved in 2010, are incorporated above in the two questions related to a project's GHG impact.

Greenhouse Gases

Greenhouse gases and climate change are cumulative global issues. The CARB and EPA regulate GHG emissions within the State of California and the U.S., respectively. While the CARB has the primary regulatory responsibility within California for GHG emissions, local agencies can also adopt policies for GHG emission reduction.

Many chemical compounds in the Earth's atmosphere act as GHGs as they absorb and emit radiation within the thermal infrared range. When radiation from the sun reaches the earth's surface, some of it is reflected into the atmosphere as infrared radiation (heat). Greenhouse gases absorb this infrared radiation and trap the heat in the atmosphere. Over time, the amount of energy from the sun to the earth's surface should be approximately equal to the amount of energy radiated back into space, leaving the temperature of the earth's surface roughly constant. Many gases exhibit these "greenhouse" properties. Some of them occur in nature (water vapor, carbon dioxide [CO_2], methane [CH_4], and oxides of nitrogen [NOx]), while others are exclusively human made (like gases used for aerosols).

The principal climate change gases resulting from human activity that enter and accumulate in the atmosphere are listed below:

Carbon Dioxide

CO_2 enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and chemical reactions (e.g., the manufacture of cement). Carbon dioxide is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

Methane

CH_4 is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and agricultural practices and the decay of organic waste in municipal solid waste landfills.

Nitrous Oxide

N_2O is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

Fluorinated Gases

Hydrofluorocarbons, perfluorinated chemicals, and sulfur hexafluoride are synthetic, powerful climate-change gases that are emitted from a variety of industrial processes. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in smaller quantities, but because they are potent climate-change gases, they are sometimes referred to as high global warming potential gases.

Emissions Inventories and Trends

According to the CARB's recent GHG inventory for the State, released 2019, California produced 424 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) in 2017 (CARB 2019). The major source of GHGs in California is transportation, contributing approximately 40.1 percent of the State's total GHG emissions in 2017.

California uses the annual Statewide GHG emission inventory to track progress toward meeting Statewide GHG targets. In 2018, emissions from routine GHG emitting activities Statewide were 425 $MMTCO_2e$, 0.8 MMTCO2e higher than 2017 levels. This puts total emissions at 6 $MMTCO_2e$ below the 2020 target of 431 million metric tons (CARB 2020). California Statewide GHG emissions dropped below the 2020 GHG limit in 2016 and have remained below the 2020 GHG limit since then.

Potential Environmental Impacts

For California, climate change in the form of warming has the potential to incur and exacerbate environmental impacts, including but not limited to changes to precipitation and runoff patterns, increased agricultural demand for water, inundation of low-lying coastal areas by sea-level rise, and increased incidents and severity of wildfire events (Moser et al. 2009). Cooling of the climate may have the opposite effects. Although certain environmental effects are widely accepted to be a potential hazard to certain locations, such as rising sea level for low-lying coastal areas, it is currently infeasible to predict all environmental effects of climate change on any one location.

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial and manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and City, and virtually every individual on Earth. A project's GHG emissions are at a micro-scale relative to global emissions but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact.

Regulatory Requirements

California has adopted Statewide legislation addressing various aspects of climate change and GHG emissions mitigation. Much of this legislation establishes a broad framework for the State's long-term GHG reduction and climate change adaptation program. The governor has also issued several executive orders related to the State's evolving climate change policy. Of particular importance are AB 32 and Senate Bill (SB) 32, which outline the State's GHG reduction goals of achieving 1990 emissions levels by 2020 and a 40 percent reduction below 1990 emissions levels by 2030.

In the absence of federal regulations, control of GHGs is generally regulated at the State level and is typically approached by setting emission reduction targets for existing sources of GHGs, setting policies to promote renewable energy and increase energy efficiency, and developing Statewide action plans.

In 2009, the City approved Resolution 2009/57 adopting GHG reduction targets to reduce overall City-wide carbon emissions by 25 percent of the 1990 levels by 2020 and 80 percent by 2050. The reduction targets adopted by the City are consistent with the Statewide GHG reduction targets established by AB 32. On May 24, 2011, the City Council approved the Community and Municipal CAPs. The plan included potential programs and actions the City could implement to reach the reduction targets

established by Resolution 2009/57. The City of Antioch Climate Action and Resilience Plan was adopted on May 12, 2020. The City's Plans include City-wide goals and strategies, but not a project-specific threshold for determining the significance of GHG emissions.

3.8.2 Methodology

Thresholds

BAAQMD's current CEQA Air Quality Guidelines currently recommends two project-specific thresholds and one plan-level threshold. Since the proposed project does not involve the preparation of a General Plan or Specific Plan, only the project-level thresholds are discussed further. The two project-level thresholds are a bright-line threshold of 1,100 MTCO2e and a GHG efficiency threshold of 4.6 MTCO2e per service population. The bright-line numeric threshold of 1,100 MTCO2e per year is a numeric emissions level below which a project's contribution to global climate change would be less than "cumulatively considerable." For projects that are above this bright-line cut-off level, emissions from these projects would still be less than cumulatively significant if the project as a whole would result in an efficiency of 4.6 $MTCO_2e$ per service population or better for mixed-use projects. Both thresholds were developed based off the 1990 State inventory and reductions identified to meet AB 32 targets for the year 2020. The GHG efficiency threshold was derived from looking at the land use inventory sector and Statewide population and employment projections for AB 32 targets. Service population is defined as the number of residents and employees. Since the proposed project does not include residential uses, this GHG efficiency threshold would not be appropriate. Therefore, the project only considers the bright-line threshold.

Post-2020

Given the recent legislative attention and case law regarding post-2020 goals and the scientific evidence that additional GHG reductions are needed through 2050 to stabilize CO_2 concentrations, the Association of Environmental Professionals' Climate Change Committee (2016) recommended in its Beyond 2020: The Challenges of Greenhouse Gas Reduction Planning by Local Governments in California white paper that CEQA analyses for most land use development projects can continue to rely on current thresholds for the immediate future, but that long-term projects should consider "post-2020 emissions consistent with 'substantial progress' along a post-2020 reduction trajectory toward meeting the 2050 target." The Beyond 2020 white paper further recommends that the "significance determination… should be based on consistency with 'substantial progress' along a post-2020 trajectory."

Project-Specific GHG Thresholds

As discussed above, for quantified emissions, the BAAQMD Guidelines recommend a GHG threshold of 1,100 metric tons or 4.6 metric tons per capita. These thresholds were developed based on meeting the 2020 GHG targets set in the scoping plan that addressed AB 32. In the event that the operation of a project would occur beyond 2020, a threshold that addresses a future target is appropriate.

Although BAAQMD has not published a quantified threshold for 2030 yet, this assessment uses a "Substantial Progress" bright-line threshold of 660 $MTCO_2e$ per year based on the GHG reduction goals of EO B-30-15. The 2030 bright-line threshold is a 40 percent reduction of the 2020 1,100 $MTCO_2e$ per year threshold. For 2023, the first year of operations, the project would need to be below 968 $MTCO_2e$ to be on the right track for substantial progress and have a less than significant impact.

Methodology

Construction and operational emissions were estimated using CalEEMod version 2016.3.2 (Appendix A).

3.8.3 Environmental Impact Analysis

This section discusses potential GHG impacts associated with the proposed project and provides mitigation measures where necessary.

Impact GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact Analysis

The proposed project may contribute to climate change impacts through its contribution of GHGs. The proposed project would generate a variety of GHGs during construction, including several defined by AB 32, such as CO_2, CH_4, and nitrous oxide (N_2O) from the exhaust of equipment, construction hauling trips, and worker commuter trips.

Constructions Emission Inventory

Construction emissions would be generated from the exhaust of equipment and the exhaust of construction equipment and material delivery trips and worker commuter trips. Detailed construction assumptions are provided in Appendix A. The BAAQMD does not presently provide a construction-related GHG generation threshold but

recommends that construction-generated GHGs be quantified and disclosed. $MTCO_2e$ emissions during construction of the project are presented in Table 3.8-1.

Table 3.8-1. Construction Greenhouse Gas Emissions

Construction (2022-2023)	$MTCO_2e$
Project Construction (2022)	126
Project Construction (2023)	12
Total Construction $MTCO_2e$	**138**
Emissions Amortized Over 30 Years[1]	**5**

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalent
[1] Construction GHG emissions are amortized over the 30-year lifetime of the project.
Source: Criteria Pollutants and Greenhouse Gas Emissions Estimation Summary (Appendix A)

During the construction of the proposed project, approximately 138 $MTCO_2e$ would be emitted. Neither the City nor the BAAQMD have an adopted threshold of significance for construction related GHG emissions. Because impacts from construction activities occur over a relatively short-term period, they contribute a relatively small portion of the overall lifetime project GHG emissions. In addition, GHG emission reduction measures for construction equipment are relatively limited. Therefore, a standard practice is to amortize construction emissions over the anticipated lifetime of a project, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies. In the absence of a construction emission threshold and in order to evaluate construction related GHG emissions against a threshold, the total emissions generated during construction were amortized based on the life of the development (30 years) and added to the operational emissions to determine the total emissions from the project, as shown below.

Operational Emission Inventory

Operational or long-term emissions occur over the life of the project. The operational emissions for the proposed project are shown in Table 3.8-2. Sources for operational emissions include the following:

- Motor Vehicles: These emissions refer to GHG emissions contained in the exhaust from the cars and trucks that would travel to and from the project site.

- Natural Gas: These emissions refer to the GHG emissions that occur when natural gas is burned on the project site. Natural gas uses include heating water, space heating, dryers, stoves, or other uses.
- Indirect Electricity: These emissions refer to those generated by offsite power plants to supply electricity required for the project.
- Water Transport: These emissions refer to those generated by the electricity required to transport and treat the water to be used on the project site.
- Waste: These emissions refer to the GHG emissions produced by decomposing waste generated by the project. These include waste removed from car interiors during the cleaning process; waste generated in the restrooms; and waste generated from the operations of the facility.

The CalEEMod default assumptions were used for each of these sources of emissions except where applicant usage estimates exceeded the CalEEMod default value. Detailed modeling results and more information regarding assumptions used to estimate emissions are provided in Appendix A. The operational emissions are shown in Table 3.8-2.

Table 3.8-2. Operational Greenhouse Gas Emissions at Project Buildout

Source Category	2023 $MTCO_2e$	2030 $MTCO_2e$
Area	0	0
Energy Consumption	6	6
Mobile	718	611
Solid Waste Generation	7	7
Water Usage	2	2
Amortized Construction Emissions[1]	5	5
Total	*738*	*631*
Bright-Line Threshold 2023[2]	**968**	**-**
Bright-Line Threshold 2030[2]	**-**	**660**
Significant Impact?	**No**	**No**

Notes:
[1] Construction GHG emissions are amortized over the 30-year lifetime of the project.
[2] Value was calculated using the standard equation for linear interpolation between the data points for 2020 and 2030. An appropriate value was determined for the year 2023 based on interpolation of known data.
$MTCO_2e$ = metric tons of carbon dioxide equivalent; BAAQMD = Bay Area Air Quality Management District
Source: CalEEMod (Appendix A)

During operation of the proposed project, approximately 748 $MTCO_2e$ would be emitted in 2023 and 633 $MTCO_2e$ would be emitted in 2030. Estimated operational emissions would not exceed the bright-line significance thresholds; therefore, impacts would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact Analysis
The City has adopted two separate CAPs, the first being the Community CAP and the second, the Municipal CAP. The Community CAP is focused on implementing strategies to reduce GHG emissions through green building design, renewable energy, transit-oriented development, and education. The Municipal CAP has been developed to address GHG emissions resulting from municipal operations and infrastructure. The Community CAP includes a goal of reducing County GHG emissions by 25 percent below 2005 levels by 2020 and 80 percent below 2005 by 2050 but has no mandatory provisions that would apply to the proposed project. The Climate Action and Resilience Plan was adopted by City Council on May 12, 2020, with the goal to provide tools for the City and community to build community resilience to climate challenges (City of Antioch 2020b). The Climate Action and Resilience Plan outlines proposed actions that aim to benefit the community in the following broad categories: adaptation to climate related changes, mitigation of GHG emissions, and community development for building strong communities that can withstand the climate challenge. Although implementation of the proposed actions outlined in the Climate Action and Resilience Plan would reduce the community's reliance on carbon-based energy sources, the plan has no mandatory provisions that would apply to the proposed project.

The State of California has adopted regulations that apply to the proposed project that would help the City achieve its reduction goal. The proposed project would be subject to Title 24 energy efficiency standards. Energy efficient buildings require less electricity;

therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The proposed project would comply with CALGreen, which includes requirements to increase recycling, reduce waste, reduce water use, increase bicycle use, and other measures that would reduce GHG emissions. Motor vehicle emissions associated with the proposed project would be reduced through compliance with State regulations on fuel efficiency and fuel carbon content. The regulations include the Pavley fuel efficiency standards that require manufacturers to meet increasing stringent fuel mileage rates for vehicles sold in California and the Low Carbon Fuel Standard that requires reductions in the average carbon content of motor vehicle fuels. Emissions related to electricity consumption by the proposed project would be reduced as the electric utility complies with the Renewables Portfolio Standard, which requires utilities to increase its mix of renewable energy sources to 50 percent by 2030. In 2018, SB 100 was signed into law, which again increases the Renewables Portfolio Standard to 60 percent by 2030 and requires all the State's electricity to come from carbon-free resources by 2045 (California Public Utilities Commission 2021). The proposed project would not conflict with the City's Community CAP or regulations adopted by the State of California to reduce GHG emissions; therefore, impacts would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

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3.9 HAZARDS AND HAZARDOUS MATERIALS

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 in 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?	☐	☐	☒	☐

3.9.1 Environmental Setting

Hazardous materials, as defined by CCR, are substances with certain physical properties that could pose a substantial present or future hazard to human health or the environment when improperly handled, disposed of, or otherwise managed. Hazardous materials are grouped into the following four categories, based on their properties:

- Toxic: Causes human health effects
- Ignitable: Has the ability to burn

- Corrosive: Causes severe burns or damage to materials
- Reactive: Causes explosions or generates toxic gases

Hazardous waste is any hazardous material that is discarded, abandoned, or slated to be recycled. The criteria that define a material as hazardous also define a waste as hazardous. If improperly handled, hazardous materials and hazardous waste can result in public health hazards if released into the soil or groundwater or through airborne releases in vapors, fumes, or dust.

California Government Code Section 65962.5 requires the California EPA to compile, maintain, and update specified lists of hazardous material release sites. The required lists of hazardous material release sites are commonly referred to as the "Cortese List," which are contained on internet websites, including the online EnviroStor database from the Department of Toxic Substances Control (DTSC) and the online GeoTracker database from the State Water Resources Control Board (SWRCB). These two databases include hazardous material release sites along with other categories of sites or facilities specific to each agency's jurisdiction. A search of EnviroStor and GeoTracker databases in June 2021 revealed the project site is not listed as a hazardous material release site (DTSC 2021, SWRCB 2021).

A Phase I Environmental Site Assessment was completed for the proposed project by SALEM Engineering Group on November 26, 2019. This assessment revealed that the project site was historically used for agricultural purposes. However, the assessment determined that based upon the length of time since the project site was last used for agricultural purposes and the agricultural use as an orchard, it is not anticipated that elevated concentrations of environmentally persistent pesticides would be found in near-surface soils of the project site and does not present a hazard.

There are no public or private airports within two miles of the City limits, and there are no lands in the City that are within an airport land use plan (City of Antioch 2003b). The nearest public airports to the project site are the Byron Airport and the Buchanan Field Airport, located approximately 12 miles southeast and 16.5 miles west of the project site, respectively. According to the California Department of Forestry and Fire Protection, the City is not located in a State responsibility high fire hazard severity zone (CALFIRE 2007b).

3.9.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the General Plan, General Plan EIR, and online regulatory compliance

databases and a Phase I Environmental Site Assessment prepared by SALEM Engineering Group in November 2019.

3.9.3 Environmental Impact Analysis

This section discusses potential impacts related to hazards and hazardous materials associated with the proposed project and provides mitigation measures where necessary.

Impact HAZ-1	**Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**
AND	
Impact HAZ-2	**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?**

Impact Analysis

Construction

Construction of the proposed project would involve the minor routine transport and handling of hazardous substances such as diesel fuels, lubricants, solvents, asphalt, paints, building materials, finishing materials, pesticides, and fertilizers. The project contractor would be required to comply with all applicable federal, State, and local laws related to the transport, use, or disposal of hazardous materials, as overseen by the California Environmental Protection Act and DTSC. During construction, the proposed project would be required to prepare a Stormwater Pollution Prevention Plan for construction in accordance with the NPDES Construction General Permit. The SWPPP and applicable BMPs would be implemented as part of Mitigation Measure HYD-1 to reduce potential impacts from pollutants entering the City's water system to a less than significant level.

Additionally, the Phase I Environmental Site Assessment (ESA) determined that structures located on the project site were constructed between late 1930s and early 1940s and therefore, could contain asbestos-containing building materials and lead based paint. Before the demolition of the structures prior to construction, the proposed project would be required under Mitigation Measure HAZ-2, to conduct an asbestos and

lead based paint survey to ensure to determine presence of substances and the proper removal and disposal if substances are found.

Operation

The proposed project includes a gas station which includes underground storage tanks for fuel. Gasoline storage and dispensing facilities contain potentially hazardous materials including liquid fuels as well as gas vapors. Additionally, other potentially hazardous materials including propane fuel, lubricants, oils, and petroleum-based products will likely be available at the convenience store. At operation, the proposed project would routinely handle, store, and dispense potentially hazardous materials. The design and operation of the proposed gas station would be required to comply with local, State, and federal regulations that are applicable to fueling facilities and be required to meet certain standards for design, operation, maintenance and safety.

Three underground storage tanks (20,000 gallon UNL, 10,000 gallon PRE, and 10,000 gallon DSL) would contain a combined total of 40,000 gallons of fuel storage onsite. The transfer and storage of gasoline will result in emission of volatile organic compounds, also referred to as reactive organic gases. Such compounds are emitted through the loading, breathing and dispensing of fuels.

The State requires that fueling station incorporate proper control equipment to minimize vapor emitted from the facility such as enhanced vapor recovery systems. The fuel dispensing valves will control and minimize vapor emissions in accordance with BAAQMD regulations for the operation of gas stations. Additionally, the facility will be constructed in accordance with State fire, building and health codes that require measures such as automatic shutoffs, signage, collision bollards, and onsite spill containment for the underground storage tanks. The proposed project would be required to comply with all applicable federal, State and local regulations in order to operate, including but not limited to Section 2540.7 – Gasoline Dispensing and Service Stations, of the California Occupational Safety and Health regulations; and Chapter 38 – Liquified Petroleum Gases, of the California Fire Code. Additionally, the proposed project would be subject to Title 40 of the CFR, which requires sites that handle any individual hazardous materials or mixture in excess of following quantities: 55 gallons (liquid); 500 pounds (solid); or 2000 cubic feet (gases) to prepare a Hazardous Materials Business Plan (HMBP). The HMBP would be implemented as Mitigation Measure HAZ-1 and would include a contingency plan that describes the facility's response procedures in the event of an accidental release of hazardous materials. The

HMBP would be submitted to Contra Costa Health Services, which is the Certified Unified Agency for Contra Costa County.

Transportation of hazardous materials will be accomplished in accordance with regulations established by the federal Department of Transportation and the California Department of Transportation (Caltrans). The delivery of gasoline would also be required to follow the designated hazardous material carrier route to promote safe transport of hazardous materials through the City as required by the General Plan (City of Antioch 2003a).

Therefore, with the incorporation of design and operations features, compliance with regulations, and the implementation of Mitigation Measures HYD-1 and HYD-2 and Mitigation Measure HYD-1, the proposed project would have a less than significant impact.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures

MM HAZ-1 **Prepare and Implement a Hazardous Materials Business Plan**. The applicant shall prepare a HMBP in accordance with CFR Title 40. The HMBP shall include inventory of any individual hazardous material or mixture in excess of any of the following quantities: 55 gallons (liquid); 500 pounds (solid); or 200 cubic feet (gases). The HMBP would include measures for safe storage, transportation, use, and handling of hazardous materials. The HMBP shall also include a contingency plan that described the facility's response procedures in the event of a hazardous materials release. The HMBP shall be submitted to Contra Costa Health Services prior to start of operation.

MM HAZ-2 **Removal of Asbestos and Lead-Based Paint.** Prior to demolition of any onsite structures, the applicant shall retain a certified hazardous waste contractor to identify the presence of asbestos containing building materials and lead-based paint in existing structures. If such substances are found to be present, the contractor shall properly remove and dispose of them in accordance with federal and State law. All removal activities shall be completed prior to commencement of demolition activities. Following completion of removal activities, the applicant shall submit

documentation to the City of Antioch verifying that all hazardous materials have been properly removed and disposed.

Mitigation Measure HYD-1 is also required. Refer to Section 3.10, Hydrology and Water Quality, for complete details pertaining to this mitigation measures.

Level of Significance After Mitigation
Less Than Significant Impact with Mitigation.

Impact HAZ-3 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Impact Analysis
The project site is not located within 0.25 mile of an existing or proposed school. The nearest school is the Carmen Dragon Elementary School, approximately 0.38 miles northeast of the project site. Adherence to existing federal, State, and local regulations will ensure that all potentially hazardous materials onsite are properly labeled, transported, and stored. Established policies and programs set forth by regulatory agencies provide that the present of potential hazardous materials occur in the safest possible manner by reducing the opportunity for accidental release of spills and ensuring that a response is in place. Such policies include corrosion and overfill protection, as well as leak detecting for underground storage tanks. The proposed project is required to adhere to local, State, and federal regulations regarding the storage and sale of gasoline. The HMBP will be prepared and implemented that addresses spill prevention and response in the event of an accidental release.

Since there are no schools located within one-quarter miles of the project site, the proposed project would not emit hazardous emissions or waste within one-quarter mile of an existing or proposed school and there would be no impacts.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact HAZ-4	**Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

Impact Analysis
The project site is not included on a list of hazardous materials sites pursuant to Government Code Section 65962.5 (DTSC 2021, SWRCB 2021). The Phase I Environmental Site Assessment determined that though the project site was historically used for agricultural purposes, due to the length of time since the project site was last used for agricultural purposes and the agricultural use being an orchard, the potential for elevated concentrations of environmentally persistent pesticides to exist in near-surface soils of the project site, which would require regulatory action, is low and does not create a potential hazard. Therefore, the proposed project would not create a significant hazard to the public or the environment and no impact would occur.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact HAZ-5	**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 for people residing or working in the project area?**

Impact Analysis
The project site is not located within 2 miles of a public airport. The nearest public airports to the project site are the Byron Airport and the Buchanan Field Airport, located approximately 10.95 miles southeast and 16.5 miles west of the project site, respectively. A private airstrip along Sunnys Way is approximately 5.94 miles west of the project site. As such, the project site does not fall within an airport land use plan and would not result in a safety hazard for people residing or working in the project site. No impact would occur.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact HAZ-6 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Impact Analysis
The proposed project would be required to comply with the Contra Costa County Emergency Operations Plan (Contra Costa County 2015). Although the Contra Costa County Emergency Response Plan does not identify specific emergency evacuation routes, compliance would ensure efficient response to emergency incident with the County and the City. Site plans include ingress and egress access driveways with the minimum width necessary to accommodate emergency vehicles and provide connectivity to the existing circulation and street system. During the construction phase, temporary and/or partial street closures may be needed. However, access to the project site and surrounding areas would be minted in accordance with a Traffic Control Plan (TCP). The TCP would identify all detours and appropriate traffic controls and would ensure adequate circulation and emergency access are provided during the construction phase.

Therefore, the proposed project would not impair or interfere with the implementation of an emergency response plan or evacuation plan and impacts would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact HAZ-7	**Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

Impact Analysis

According to California Department of Forestry and Fire Protection (CALFIRE), the project site is not within or located adjacent to a wildland fire hazard area and is classified as non-burnable by United States Forest Service (USFS) (CALFIRE 2007b, USFS 2020). The project site is located in an urban area and any dry, potentially-flammable, vegetation currently on-site would be removed with development of the proposed project. As such, the proposed project is not expected to be exposed to risks associated with wildland fires. All utilities needed for the new development would be located underground and also includes installation of fire hydrants on the project site to mitigate fire hazards. As such, the proposed project is not expected to be exposed to risks associated with wildland fires, and impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

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3.10 HYDROLOGY AND WATER QUALITY

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of 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?	☐	☒	☐	☐

3.10.1 Environmental Setting

Climate and Precipitation

Regionally, the project site has a Mediterranean climate characterized by hot, dry summers and moderate winters, with average annual temperatures ranging from 46.6 to 75°F. Historical data used to describe the climate was collected at the Antioch Pumping Plant #3 Station, located directly south of the project site. Precipitation in the study area occurs as rain. Average annual rainfall is 11.2 inches and occurs primarily from October

through April. The growing season (i.e., 50 percent probability of air temperature 32ºF or higher) in the study area is around 304 days and occurs between mid-February and early December (Western Regional Climate Center 2021).

Watershed and Regional Drainage

A watershed is the geographic area draining into a river system, ocean, or other body of water through a single outlet and includes the receiving waters. The proposed project site is located in the San Joaquin Delta watershed (USGS 2020). In general, the creeks flow from the hills southwest of Antioch to the north and ultimately drain into the Delta, located north of the project site. The existing drainage system in Antioch is comprised primarily of channelized creeks fed by groundwater, surface runoff, and underground storm drains.

Groundwater

The City is located within the East Contra Costa Subbasin (ECC Subbasin), which is part of the larger San Joaquin Valley Groundwater Basin. The ECC Subbasin is drained by the San Joaquin River and Marsh Creek. The San Joaquin River flows northward into the Sacramento and San Joaquin Delta, which ultimately discharges into the San Francisco Bay. The City does not pump groundwater for municipal water supplies (City of Antioch 2003b). The State has designated the ECC Subbasin as a medium-priority basin per the Sustainable Groundwater Management Act. Therefore, preparation of a Groundwater Sustainability Plan (GSP) is required by January 31, 2022. According to the East Costa County Integrated Regional Water Management (IRWM), in May 2017, the City and seven other local agencies that overlay the Basin entered into a memorandum of understanding in May 2017 to collaborate and develop a single GSP for the East Contra Costa Basin and each member agency, including the City, became a GSA to be the local agency to manage the Basin within their respective areas. The Final East Contra Costa Subbasin GSP was released in October 2021 (East Contra Costa IRWM 2021).

Water Quality

Water quality refers to the chemical, biological, and physical characteristics of water. The water quality within a watershed is influenced by surrounding land uses, geographic features, rainfall intensity, vehicle traffic, and percentage of impervious surfaces. During the seasonal dry period between May to September, pollutants such as vehicle exhaust, oil and gasoline spills, and atmospheric fallout accumulate within the watershed. During the seasonal wet period between October to April, precipitation can displace these

pollutants into stormwater runoff and increase pollutant concentrations at the beginning of the season.

Flooding

Flood hazard zones are identified on official Flood Insurance Rate Maps issued by the Federal Emergency Management Agency (FEMA). The project site is designated as Zone X and is within a minimal flood hazard zone (FEMA 2021).

Seiches, Dam Inundation, and Tsunamis

Seiches are standing waves oscillating in a landlocked body of water, typically caused by strong winds or seismic ground shaking. Tsunamis are tidal waves created by undersea fault movement. These waves are fast moving, create large swells of water, and upon reaching the coast can sweep inland with a large amount of force. Portions of the City located adjacent to Suisun Bay are susceptible to potential tsunami or seiche inundation. However, projected wave height and tsunami run-up is expected to be small in the interior portions of the San Francisco Bay. Some coastal inundation and damage could occur if a tsunami or seiche coincided with very high tides or an extreme storm.

A dam can pose a potential risk of failure particularly during seismic events or ground shaking, which can threaten the area below the dam with inundation. The City is not in the line of any flooding from dam or reservoir inundation (DWR 2015).

3.10.2 Methodology

The evaluation of potential hydrologic and water quality impacts was based on a review of City documents, including the General Plan and 2015 Urban Water Management Plan (UWMP). Mapping tools provided by FEMA were also reviewed. The information obtained from these sources are summarized to establish existing conditions and to identify potential environmental effects. In determining the level of significance, the analysis assumes that the proposed project would comply with relevant federal, State, and local ordinances and regulations.

3.10.3 Environmental Impact Analysis

This section discusses potential impacts related to hydrology and water quality associated with the proposed project and provides mitigation measures where necessary.

Impact HYD-1 Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Impact Analysis

Construction activities would include site clearing, grading, utility connections, building construction, frontage improvements (e.g., sidewalk and driveway construction), and landscaping onsite. Construction activities would involve grading of the entire project site and the permanent disturbance of the site. These activities have the potential to generate stormwater runoff and to discharge pollutants, such as fuel, solvents, oil, paints, and trash, into the City's storm drain system. The proposed project would comply with the NPDES General Construction Permit. The NPDES General Construction Permit includes the preparation of a SWPPP and incorporation of BMPs to control sedimentation, erosion, and hazardous materials from contacting stormwater, with the intent of keeping all products of erosion from moving offsite into receiving waters. The SWPPP and applicable BMPs have been incorporated into Mitigation Measure HYD-1 to reduce potential water quality impacts to a less than significant level.

The City has adopted the Contra Costa County's C.3 Stormwater Standards, which require new development and redevelopment projects that create or alter 10,000 or more square feet of impervious area to contain and treat all stormwater runoff from the project site. Given that the proposed project would create approximately 31,594 sf of impervious area and would have a total of 53,342 sf of impervious, the proposed project would be subject to the requirements of the SWRCB and the RWQCB, including the C.3 Standards, which are included in the City's NPDES General Permit. This increase in impervious surface at the project site would alter the type and level of pollutants in stormwater runoff from the project site. Stormwater runoff from building rooftops, parking lot areas, sidewalks, access roads, and landscaped areas would potentially contain oils, grease, fuels, byproducts of combustion, pesticides, fertilizers, and herbicides. Compliance with the C.3 Standard requirements would ensure that impacts to water quality standards or waste discharge requirements would not occur during operation of the proposed project.

The entirety of any car wash associated water will be routed through the project's reclaim tanks to be recycled for the associated system. The tank system is approximately 90 percent efficient, meaning approximately 10 percent of car wash associated water will not be recycled, and when the system is overwhelmed, will be conveyed through the sanitary sewer system.

Two bioretention ponds, totaling approximately 3,938 feet, are proposed in the landscape buffers provided along the northern and eastern border of the project site. Runoff from impervious areas on the site, including roofs and paved areas, would be routed to the proposed bioretention facilities. The facilities would be designed and constructed in accordance with the Stormwater C.3 Guidebook and would incorporate BMPs to prevent, control, and reduce the volume of pollutants in stormwater runoff. As such, operation of the proposed project would have a less than significant impact with mitigation related to water quality degradation.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures

MM HYD-1 **Prepare and Implement a SWPPP.** Prior to the issuance of any construction-related permits, the applicant shall prepare and submit a Notice of Intent (NOI) to the SWRCB and prepare a SWPPP in compliance with the NPDES General Construction Permit. The SWPPP shall include a detailed, site-specific listing of the potential sources of stormwater pollution; pollution prevention measures (erosion and sediment control measures and measures to control non-stormwater discharges and hazardous spills); description of the type and location of erosion and sediment control BMPs to be implemented at the project site; and a BMP monitoring and maintenance schedule to determine the amount of pollutants leaving the project site. A copy of the SWPPP must be current and remain onsite. Water quality BMPs identified in the SWPPP could include but are not limited to the following:

- Surface water runoff shall be controlled by directing flowing water away from critical areas and by reducing runoff velocity. Diversion structures, such as terraces, dikes, and ditches, shall collect and direct runoff water around vulnerable areas to prepared drainage outlets.

- Surface roughening, berms, check dams, hay bales, or similar devices shall be used to reduce runoff velocity and erosion.

- Sediment shall be contained when conditions are too extreme for treatment by surface protection. Temporary sediment traps, filter fabric fences, inlet protectors, vegetative filters and buffers, or settling basins shall be used to detain runoff water long enough for sediment particles

to settle out. Construction materials, including topsoil and chemicals, shall be stored, covered, and isolated to prevent runoff losses and contamination of groundwater.

- Topsoil removed during construction shall be carefully stored and treated as an important resource. Berms shall be placed around topsoil stockpiles to prevent runoff during storm events.
- Fuel and vehicle maintenance areas shall be established away from all drainage courses, and these areas shall be designed to control runoff.
- Temporary erosion control measures, such as silt fences, staked straw bales, and temporary revegetation, shall be employed for disturbed areas. No disturbed surfaces will be left without erosion control measures in place during the winter and spring months.
- A spill prevention and countermeasure plan shall be developed to identify proper storage, collection, and disposal measures for potential pollutants (such as fuel, fertilizers, pesticides, etc.) used onsite. The plan will also require the proper storage, handling, use, and disposal of petroleum products.
- Construction activities shall be scheduled to reduce land disturbance during peak runoff periods and to the immediate area required for construction. Soil conservation practices shall be completed during the fall or late winter to reduce erosion during spring runoff. Existing vegetation will be retained where possible. To the extent feasible, grading activities shall be limited to the immediate area required for construction.

Level of Significance After Mitigation
Less Than Significant Impact with Mitigation.

Impact HYD-2 Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Impact Analysis

The City currently does not rely on groundwater for water supplies. Therefore, any water demand associated with the proposed project would not result in a depletion of groundwater in the proposed project site.

The proposed project would create 31,594 sf of impervious area and would have a total of 53,342 sf of impervious at the project site, which would potentially impact groundwater because areas currently available for the infiltration of rainfall would be reduced. The proposed project would incorporate 41,993 sf of pervious surface at the project site consisting of landscaping and bioretention areas. Therefore, the proposed project would not substantially interfere with local groundwater recharge. In addition, the drainage system improvements would be designed and constructed in accordance with the City's Standard Specifications and General Plan. Impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact HYD-3 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 offsite;

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

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;

iv) Impede or redirect flood flows

Impact Analysis

i. Result in substantial erosion or siltation on- or offsite

Construction of the proposed project would include ground-disturbing work that would involve grading of the entire project site, and the permanent disturbance of the 2 acre site. As a result, construction activities could result in erosion-related impacts. The proposed project would implement Mitigation Measure HYD-1, including preparation of a SWPPP in accordance with the NPDES General Construction Permit. The SWPPP would include BMPs, which would be implemented during construction activities to reduce the potential of erosion.

The proposed project would create 31,594 sf of impervious area and would have a total of 53,342 sf of impervious area, which would potentially impact groundwater because areas currently available for the infiltration of rainfall would be reduced. The proposed project would incorporate 41,933 sf of pervious surface at the project site consisting of landscaping and bioretention areas along the project boundaries. These features would collect impervious surface runoff prior to entering the piped storm drain system and would provide treatment, retention, and/or detention at the project site to reduce the volume of stormwater runoff and erosion impacts. With implementation of Mitigation Measure HYD-1, the impact would be less than significant.

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite

The proposed project would increase the amount of impervious area of the project site and as a result, would increase the amount of surface runoff from the project site. To

control stormwater runoff, the proposed project includes constructing new catch basin and drain pipes throughout the site and diverting stormwater runoff collected from the catch basins and drain pipes into the 3,938 sf of bioretention areas that would be created along the northern and eastern edges of the project site. Stormwater at the project site would be diverted to the landscaped areas and bioretention areas, which would control the volume of stormwater at the project site to reduce the potential for flooding. Therefore, the proposed project would not result in on- or offsite flooding, and the impact would be less than significant.

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

As described above, construction activities would have the potential to generate stormwater runoff and to discharge pollutants, such as fuel, solvents, oil, paints, and trash, into the City's storm drain system. In addition, the increase in impervious surface resulting from project implementation would alter the type and level of pollutants in stormwater runoff from the project site. During construction activities, the proposed project would conform to the requirements of the NPDES General Construction Permit, which involves the preparation and implementation of a SWPPP. The SWPPP would specify BMPs to incorporate during construction to prevent, control, and reduce polluted runoff from entering the City's storm drain system and waterways. Implementation of these BMPs would be part of Mitigation Measure HYD-1.

In addition, stormwater generated at the project site would be directed and treated in the landscaped areas and the bioretention areas prior to entering the piped storm drain system. With implementation of such a plan, the facilities would continue to properly manage runoff long after completion of construction activities. The impacts would be less than significant with Mitigation Measure HYD-1 incorporated.

iv. Impede or redirect flood flows

The project site is designated as Zone X and is in a minimal flood hazard zone. Zone X is defined as areas outside of the 500-year flood area (FEMA 2021). The project is not located within a dam inundation zone; therefore, the proposed project would not impede or redirect flood flows, and there would be no impact.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures
Mitigation Measure HYD-1 is required.

Level of Significance After Mitigation
Less Than Significant Impact with Mitigation.

Impact HYD-4 In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Impact Analysis
The project site would not be susceptible to seiche, tsunami, or mudflow. Seiches affect locations adjacent to larger water bodies such as lakes or reservoirs; the project site is not located near any such water body. The project site is located more than 50 miles from the Pacific Ocean and miles from Suisun Bay, substantially reducing the potential for impacts from tsunamis. As noted above, the project site is not located within a flood hazard zone. As a result, there would be no impact.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact HYD-5 Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Impact Analysis
The State Department of Water Resources identified the ECC Subbasin as a medium-priority basin. The City formed a Groundwater Sustainability Agency in May 2017 to manage groundwater resources beneath and within City limits and entered into an agreement with other local agencies to prepare a GSP by January 31, 2022 (East Contra Costa IRWM 2021). The Final East Contra Costa Subbasin GSP was released in October 2021. Since the proposed project would be constructed and operated in accordance with all City regulations and standards, the proposed project would be in compliance with the City's sustainable groundwater management plan. Therefore, the proposed project would not conflict with or obstruct implementation of a sustainable groundwater management plan.

As discussed above, the proposed project does not plan to draw groundwater from the site and would not substantially deplete groundwater supplies. The proposed project is required to comply with the policies and objectives of the Water Quality Control Plan for the Central Valley RWQCB. As required by Mitigation Measure HYD-1, the proposed project would obtain coverage under the NPDES General Construction Permit and Industrial General Permit. Compliance with these regulations would require the proposed project to prepare a construction SWPPP and post-operation SWPPP that includes BMPs that meet the requirements of the Central Valley RWQCB's Water Quality Control Plan. The implementation of Mitigation Measure HYD-1 would reduce potential impacts to water quality to a less than significant level and ensure that the proposed project would not conflict with or obstruct implementation of the Water Quality Control Plan for the Central Valley RWQCB.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures
Mitigation Measure HYD-1 is required.

Level of Significance After Mitigation
Less Than Significant Impact with Mitigation.

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3.11 LAND USE AND PLANNING

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

3.11.1 Environmental Setting

The proposed project is located in the City of Antioch on the southwest corner of the intersection between Lone Tree Way and Vista Grande Drive. The project site consists of a single parcel identified as APN 056-270-059 and is approximately 2 acres. Land use across Lone Tree Way, north of the project site, consists of office and commercial uses. Land use across Vista Grande Drive, to the east of the site, consists of multi-family residential apartments. The project site is bordered by one- to two-story single family residential homes to the south and west. State Route 4 is located approximately 0.6 miles east of the project site.

The City's General Plan designates the project site as Office, and the City's Zoning Ordinance designates the project site as P-D: Planned Development District. The proposed project includes a General Plan Amendment and Planned Development Rezone to develop the property for commercial uses.

3.11.2 Methodology

The evaluation of potential land use impacts was based on a review of applicable land use documents, including the General Plan, and the Antioch Code of Ordinance. This analysis examined the consistency of the proposed project with applicable General Plan policies.

3.11.3 Environmental Impact Analysis

This section discusses potential impacts related to land use and planning associated with the proposed project and provides mitigation measures where necessary.

Impact LU-1 Physically divide an established community?

Impact Analysis

The project proposes the re-development of a parcel within City limits that currently contains multiple buildings and is bordered by existing residential developments and roadways. Construction of the proposed project, which includes a gas station, car wash, and a convenience store, would not introduce new physical features that would remove mobility and access within an established community. Likewise, the proposed project does not propose the removal of an existing road or pathway that could reduce or remove access between a community and outlying areas. Therefore, the proposed project would not physically divide an established community, and no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact LU-2 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?

Impact Analysis

The City's General Plan designates the project site as Office, and the City's Zoning Ordinance designates the project site as P-D: Planned Development District. The proposed project includes a General Plan Amendment and Planned Development Rezone to develop the project site for commercial uses.

The project is proposing to amend the General Plan Land Use Designation from Office to Convenience Commercial. The Convenience Commercial designation is used to include small-scale retail and service uses on small commercial lots and typically include uses such as convenience markets, limited personal services, service station, and commercial services (City of Antioch 2003a). The proposed project would construct a gas station, car wash, and convenience store which would be inconsistent with the current General Plan land use designation. However, with the amendment, the proposed project would be consistent with the proposed designation and the project

would be consistent with the City of General Plan and impacts related to General Plan consistency would be less than significant.

The proposed project would also require a rezone to a new Planned Development District. The Planned Development District does not have set standards and regulations for structures as they are to be determined by the City Council through the planned development process. Each P-D District established will have specific development standards set for that particular district such as minimum lot sizes, setback and open space requirements, architectural and landscaping guidelines, and maximum building heights and lot coverages. These standards are determined by the City Council through planned development process (City of Antioch 2020).

The applicant proposes to amend the zoning code to a new P-D District. The rezoning of the site would establish and outline specific development standards relating to building setbacks and coverages, minimum lot sizes, landscaping and architectural guidelines, and other design requirements for the components of the P-D District. P-D Districts containing only commercial and/or industrial uses are not required to undergo preliminary development plan review and may begin the review process at the final development plan stage. The applicant of the P-D District establishment request is required to develop a listing of the development standards proposed for the new P-D District (e.g., setbacks, lot sizes, building heights) (City of Antioch 2020). The proposed project would implement all proposed development standards and guidelines. Therefore, the proposed project would be consistent with the City of Antioch Zoning Code and impacts related to Zoning Code consistency would be less than significant.

In summary, the proposed project would not conflict with the applicable land use plans, policies, or regulations of the City of General Plan or the Zoning Code adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, impacts on land use policies and plans would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

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3.12 MINERAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the State?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

3.12.1 Environmental Setting

The California Geologic Survey classifies lands into Aggregate and Mineral Resource Zones (MRZ) based on guidelines adopted by the California State Mining and Geology Board, as mandated by the Surface Mining and Reclamation Act of 1977. These MRZs identify whether known or inferred significant mineral resources are present in an area. Local governments are required to incorporate identified MRZs delineated by the State into their general plan.

According to the Contra Costa County General Plan, mineral resources are not currently located near the City (Contra Costa County 2005). Additionally, the General Plan EIR does not identify any areas identified as available for new development by the General Plan to contain any known mineral resources that would be of value to the region and residents of the State (City of Antioch 2003b).

3.12.2 Methodology

The following analysis is based on a review of the General Plan EIR and the DOC's Division of Mine Reclamation mineral lands classification maps.

3.12.3 Environmental Impact Analysis

This section discusses potential impacts on mineral resources associated with the proposed project and provides mitigation measures where necessary.

Impact MIN-1	**Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the State?**

Impact Analysis
The DOC's Mineral Lands Classification map of Aggregate Resources classifies the project site as an MRZ-1 zone (DOC 1982). Areas classified as MRZ-1 are areas where adequate information indicted that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence. Additionally, the Contra Costa County General Plan as well as the City's General Plan EIR do not identify any mineral resources of value on or near the project site. No mineral extraction activities exist on or near the site, and mineral extraction is not included as part of the proposed project. Furthermore, the project's Planned Development zoning will not allow mineral extraction. The proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State, and no impact would occur.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact MIN-2	**Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?**

Impact Analysis
The DOC Division of Mine Reclamation identifies the project site as an MRZ-1 zone. MRZ-1 zone classification are given to area where adequate information indicates that no significant mineral deposits exist. There are no locally important mineral resource recovery sites delineated on the City's General Plan and the Contra Costa County General Plan does not identify any valuable mineral resource areas in the City. Therefore, the proposed project would not result in the loss of availability of a locally important mineral resource recovery site, and no impact would occur.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

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3.13 NOISE

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b)	Generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c)	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?	☐	☐	☒	☐

3.13.1 Environmental Setting

Noise Fundamentals and Terminology

Noise is generally defined as unwanted sound that annoys or disturbs people and potentially causes an adverse psychological or physiological effect on human health. Because noise is an environmental pollutant that can interfere with human activities, evaluation of noise is necessary when considering the environmental impacts of a proposed project.

Sound is mechanical energy (vibration) transmitted by pressure waves over a medium such as air or water. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an existing sound level.

Although the decibel (dB) scale, a logarithmic scale, is used to quantify sound intensity, it does not accurately describe how sound intensity is perceived by human hearing. The perceived loudness of sound is dependent upon many factors, including sound pressure level and frequency content. The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a process called A-weighting, written as dB(A) and referred to as A-weighted decibels. There is a strong correlation between A-weighted

sound levels and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. Table 3.13-1 summarizes typical A-weighted sound levels for different common noise sources.

Table 3.13-1. Typical A-Weighted Sound Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	-110-	Rock band
Jet flyover at 1,000 Feet		
	-100-	
Gas lawnmower at 3 Feet		
	-90-	
Diesel truck at 50 Feet at 50 MPH		Food blender at 3 Feet
	-80-	Garbage Disposal at 3 Feet
Noisy urban area, daytime		
Gas lawnmower, 100 Feet	-70-	Vacuum Cleaner at 10 Feet
Commercial area		Normal Speech at 3 Feet
Heavy traffic at 300 Feet	-60-	
		Large business office
Quiet urban daytime	-50-	Dishwasher in next room
Quiet urban nighttime	-40-	Theater, large conference room (Background)
Quiet suburban nighttime		
	-30-	
Quiet rural nighttime		Library
	-20-	Bedroom at night, concert hall (Background)
	-10-	
		Broadcast/recording studio
	-0-	

Source: Caltrans, Technical Noise Supplement Traffic Noise Analysis Protocol, September 2013

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level (Leq), the minimum and maximum sound levels (Lmin and Lmax, respectively), percentile-exceeded sound levels (such as L10, L20), the day-night sound level (Ldn), and the community noise equivalent level (CNEL). Ldn and CNEL values often differ by less than 1 dB. As a matter of practice, Ldn and CNEL values are considered to be equivalent and are

treated as such in this assessment. Table 3.13-2 defines sound measurements and other terminology used in this report.

Table 3.13-2. Definition of Sound Measurements

Sound Measurements	Definition
Decibel (dB)	A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.
A-Weighted Decibel (dB(A))	An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
Maximum Sound Level (Lmax)	The maximum sound level measured during the measurement period.
Minimum Sound Level (Lmin)	The minimum sound level measured during the measurement period.
Equivalent Sound Level (Leq)	The equivalent steady State sound level that in a stated period of time would contain the same acoustical energy.
Percentile-Exceeded Sound Level (Lxx)	The sound level exceeded xx % of a specific time period. L10 is the sound level exceeded 10% of the time. L90 is the sound level exceeded 90% of the time. L90 is often considered to be representative of the background noise level in a given area.
Day-Night Level (Ldn)	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 during the period from 10:00 p.m. to 7:00 a.m.
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 during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
Peak Particle Velocity (PPV)	A measurement of ground vibration defined as the maximum speed (measured in inches per second) at which a particle in the ground is moving relative to its inactive State. PPV is usually expressed in inches/second.
Frequency: Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.

Sound Measurements	Definition

Source: Federal Highway Administration Construction Noise Handbook (FHWA 2006)

With respect to how humans perceive and react to changes in noise levels, a 1 dB(A) increase is imperceptible, a 3 dB(A) increase is barely perceptible, a 5 dB(A) increase is clearly noticeable, and a 10 dB(A) increase is subjectively perceived as approximately twice as loud. These subjective reactions to changes in noise levels were developed on the basis of test subjects' reactions to changes in the levels of steady-State pure tones or broadband noise and to changes in levels of a given noise source. These statistical indicators are thought to be most applicable to noise levels in the range of 50 to 70 dB(A), as this is the usual range of voice and interior noise levels. Numbers of agencies and municipalities have developed or adopted noise level standards, consistent with these and other similar studies to help prevent annoyance and to protect against the degradation of the existing noise environment.

For a point source such as a stationary compressor or construction equipment, sound attenuates based on geometry at a rate of 6 dB per doubling of distance. For a line source such as free-flowing traffic on a freeway, sound attenuates at a rate of 3 dB per doubling of distance. Atmospheric conditions including wind, temperature gradients, and humidity can change how sound propagates over distance and can affect the level of sound received at a given location. The degree to which the ground surface absorbs acoustical energy also affects sound propagation. Sound that travels over an acoustically absorptive surface, such as grass, attenuates at a slightly greater rate than sound that travels over a hard surface, such as pavement. The increased attenuation is typically in the range of 1–2 dB per doubling of distance. Barriers, such as buildings and topography that block the line of sight between a source and receiver, also increase the attenuation of sound over distance.

Decibel Addition

Because dBs are logarithmic units, sound pressure levels cannot be added or subtracted through ordinary arithmetic. On the dB scale, a doubling of sound energy corresponds to a 3 dB increase. In other words, when two identical sources are each producing sound of the same loudness, their combined sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one source produces a sound pressure level of 70 dB(A), two identical sources would combine to produce 73 dB(A). The cumulative sound level of any number of sources can be determined using dB addition.

Vibration Standards

Vibration is like noise such that noise involves a source, a transmission path, and a receiver. While related to noise, vibration differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to vibration depends on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system that is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration in terms of peak particle velocity (PPV) in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of PPV.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.13-3 notes the general threshold at which human annoyance could occur is 0.1 PPV for continuous/frequent sources. Table 3.13-4 indicates the threshold for damage to typical residential and commercial structures ranges from 0.3 to 0.5 PPV for continuous/frequent sources.

Table 3.13-3. Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum Peak Particle Velocity (inches/second)	
	Transient Sources	Continuous/Frequent Sources
Barely perceptible	0.035	0.012
Distinctly perceptible	0.24	0.035
Strongly perceptible	0.90	0.10
Severe	2.0	0.40

Notes: Transient sources create a single isolated vibration event, such as blasting or drop balls.
Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seal equipment, vibratory pile drivers, and vibratory compaction equipment.
Source: Caltrans Transportation and Construction Vibration Guidance Manual (Caltrans 2020)

Table 3.13-4. Guideline Vibration Damage Potential Criteria

Structure and Condition	Maximum Peak Particle Velocity (inches/second)	
	Transient Sources	Continuous/Frequent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.30	0.12
Historic and some old buildings	0.50	0.20
Older residential structure	0.70	0.30
New residential structures	1.2	0.50
Modern industrial/commercial buildings	2.0	0.50

Notes: Transient sources again create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seal equipment, vibratory pile drivers, and vibratory compaction equipment.
Source: Caltrans Transportation and Construction Vibration Guidance Manual (Caltrans 2020)

The operation of heavy construction equipment, particularly pile driving and other impact devices, such as pavement breakers, create seismic waves that radiate along the surface of the ground and downward into the earth. These surface waves can be felt as ground vibration. Vibration from the operation of this equipment can result in effects ranging from annoyance of people to damage of structures. Varying geology and distance will result in different vibration levels containing different frequencies and displacements. In all cases, vibration amplitudes will decrease with increasing distance. Perceptible groundborne vibration is generally limited to areas within a few hundred feet of construction activities.

Table 7-4 “Vibration Source Levels for Construction Equipment” in the 2018 Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual lists vibration source levels for the construction equipment most likely to generate high levels of ground vibration (FTA 2018). The equipment listed in the FTA table includes impact and sonic pile drivers, clam shovel drops, hydromills, vibratory rollers, hoe rams, large and small bulldozers, caisson drilling, loaded trucks, and jackhammers. Table 3.13-5 below summarizes typical reference vibration levels generated by select construction equipment proposed for this project.

Table 3.13-5. Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity at 25 Feet
Vibratory roller	0.210
Large bulldozer	0.089
Loaded trucks	0.076
Small bulldozer	0.003

Source: Federal Transit Administration Transit Noise and Vibration Impact Assessment Manual (FTA 2018)

Vibration amplitude attenuates over distance and is a complex function of how energy is imparted into the ground and the soil conditions through which the vibration is traveling. The following equation can be used to estimate the vibration level at a given distance for typical soil conditions (FTA 2018). “PPVref” is the reference PPV from Table 3.13-5 and “Distance” is the distance between the source and the receptor:

PPV = PPVref x (25/Distance)^1.5

Noise Regulatory Framework

Federal, State, and local agencies regulate different aspects of environmental noise. Generally, the federal government sets standards for transportation-related noise sources closely linked to interState commerce. These include aircraft, locomotives, and trucks. No federal noise standards are directly applicable to this project. The State government sets standards for transportation noise sources such as automobiles, light trucks, and motorcycles. Noise sources associated with industrial, commercial, and construction activities are generally subject to local control through noise ordinances and general plan policies. Local general plans identify general principles intended to guide and influence development plans.

State Regulations

California Green Building Standards (CalGreen)

The California Green Building Standards Code (CalGreen) establishes interior noise insulation standards for non-residential occupied buildings. The CalGreen code also applies to occupied non-guestroom spaces within a hotel, such as meeting rooms, offices, etc. CalGreen Section 5.507 “Environmental Comfort”, States the following:

5.507.4.1 Exterior noise transmission. Wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall meet a composite STC rating of at least 50 or a composite OITC rating of no less than 40, with exterior windows of a minimum STC of 40 or OITC of 30 in the following locations:

1. *Within the 65 CNEL noise contour of an airport*

Exceptions:

1. *Ldn or CNEL for military airports shall be determined by the facility Air Installation Compatible Land Use Zone (AICUZ) plan.*

2. *Ldn or CNEL for other airports and heliports for which a land use plan that has not been developed shall be determined by the local general plan noise element.*

3. *Within the 65 CNEL or Ldn noise contour of a freeway or expressway, railroad, industrial source or fxed-guideway notice source as determined by the Noise Element of the General Plan.*

5.507.4.1.1 Noise exposure where noise contours are not readily available. Buildings exposed to a noise level of 65 dB Leq-1-hr during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30).

5.507.4.2 Performance method. For buildings located as defined in Section 5.507.4.1 or 5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level (Leq -1Hr) of 50 dBA in occupied areas during any hours of operations.

5.507.4.2.1 Site features. Exterior features such as sound walls or earth berms may be utilized as appropriate to the building, addition, or alteration project to mitigate sound migration to the interior.

5.507.4.2.2 Documentation of compliance. An acoustical analysis documenting complying interior sound levels shall be prepared by personnel approved by the architect or engineer of record.

5.507.4.3 Interior sound transmission. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40.

Local Regulations

City of Antioch General Plan

The General Plan sets forth noise and land use compatibility standards to guide development, as well as noise goals and policies to protect citizens from the harmful and annoying effects of excessive noise. The following noise objectives and policies are applicable to the proposed project.

Objective 11.6.1 Noise Objective. Achieve and maintain exterior noise levels appropriate to planned land uses throughout Antioch as described below:

- Residential
  - Single-Family: 60 dBA CNEL within rear yards
  - Multifamily: 60 dBA CNEL within exterior open space
- Schools
  - Classrooms: 65 dBA CNEL
  - Play and Sports Areas: 70 dBA CNEL
- Hospitals, Libraries: 60 dBA CNEL
- Commercial/Industrial: 70 dBA CNEL at the front setback

11.6.2 Noise Policies

a. Implementation of the noise objective contained in Section 11.6.1 and the policies contained in 11.6.2 of the Environmental Hazards Element shall be based on noise data contained in Section 4.9 of the General Plan EIR, unless a noise analysis conducted pursuant to the City's development and environmental review process provides more up-to-date and accurate noise predictions, as determined by the City.

b. Maintain a pattern of land uses that separates noise sensitive land uses from major noise sources to the extent possible, and guide noise-tolerant land uses into the noisier portions of the Planning Area.

c. Minimize motor vehicle noise in residential areas through proper route location and sensitive roadway design.

- Provide planned industrial areas with truck access routes separated from residential areas to the maximum feasible extent.

- Where needed, provide traffic calming devices to slow traffic speech within residential neighborhoods.

d. Where new development (including construction and improvement of roadways) is proposed in areas exceeding the noise levels identified in the General Plan Noise Objective, or where the development of proposed uses could result in a significant increase in noise, require a detailed noise attenuation study to be prepared by a qualified acoustical engineer to determine appropriate mitigation and ways to incorporate such mitigation into project design and implementation.

e. When new development incorporating a potentially significant noise generator is proposed, require noise analyses to be prepared by a qualified acoustical engineer. Require the implementation of appropriate noise mitigation when the proposed project will cause new exceedances of General Plan noise objectives, or an audible (3.0 dB(A)) increase in noise in areas where General Plan noise objectives are already exceeded as the result of existing development.

f. In reviewing noise impacts, utilize site design and architectural design features to the extent feasible to mitigate impacts on residential neighborhoods and other uses that are sensitive to noise. In addition to sound barriers, design techniques to mitigate noise impacts may include, but are not limited to:

    - Increased building setbacks to increase the distance between the noise source and sensitive receptor.

    - Orient buildings which are compatible with higher noise levels adjacent to noise generators or in clusters to shield more noise sensitive areas and uses.

    - Place noise tolerant use, such as parking areas, and noise tolerant structures, such as garages, between the noise source and sensitive receptor.

- Cluster office, commercial, or multifamily residential structures to reduce noise levels within interior open space areas.

- Provide double glazed and double paned windows on the side of the structure facing a major noise source, and place entries away from the noise source to the extent possible.

g. Where feasible, require the use of noise barriers (walls, berms, or a combination thereof) to reduce significant noise impacts.

    - Noise barriers must have sufficient mass to reduce noise transmission and high enough to shield the receptor from the noise source.

    - To be effective, the barrier needs to be constructed without cracks or openings.

    - The barrier must interrupt the line of sight between the noise sources and the noise receptor.

    - The effects of noise “flanking” the noise barrier should be minimized by bending the end of the barrier back from the noise source.

    - Require appropriate landscaping treatment to be provided in conjunction with noise barriers to mitigate their potential aesthetic impacts.

h. Continue enforcement of California Noise Insulation Standards (Title 25, Section 1092, California Administrative Code).

i. Ensure that construction activities are regulated as to hours of operation in order to avoid or mitigate noise impacts on adjacent noise-sensitive land uses.

j. Require proposed development adjacent to occupied noise sensitive land uses to implement a construction-related noise mitigation plan. This plan would depict the location of construction equipment storage and maintenance area, and document methods to be employed to minimize noise impacts on adjacent noise sensitive land uses.

k. Require that all construction equipment utilize noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

m. Prior to the issuance of any grading plans, the City shall condition approval of subdivisions and non-residential development adjacent to any developed/occupied noise-sensitive land uses by requiring applicants to submit a construction-related noise mitigation plan to the City for review and approval. The plan should depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of the project through the use of such methods as:

- The construction contractor shall use temporary noise-attenuation fences, where feasible, to reduce construction noise impacts on adjacent noise sensitive land uses.
- During all project site excavation and grading on-site, the construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards. The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.
- The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.
- The construction contractor shall limit all construction-related activities that would result in high noise levels to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Saturday. No construction shall be allowed on Sundays and public holidays.

n. The construction-related noise mitigation plan required shall also specify that haul truck deliveries be subject to the same hours

specified for construction equipment. Additionally, the plan shall denote any construction traffic haul routes where heavy trucks would exceed 100 daily trips (counting those both to and from the construction site). To the extent feasible, the plan shall denote haul routes that do not pass sensitive land uses or residential dwellings. Lastly, the construction-related noise mitigation plan shall incorporate any other restrictions imposed by the City.

(City of Antioch 2003a)

City of Antioch Code of Ordinances

Article 19 “Noise Attenuation Requirements”, Section 9-5.1901 “Noise Attenuation Requirements” provides the following noise attenuation requirements for proposed development.

A. Stationary noise sources. Uses adjacent to outdoor living areas (e.g., backyards for single-family homes and patios for multifamily units) and parks shall not cause an increase in background ambient noise which will exceed 60 CNEL.

B. Mobile noise sources.

    1) Arterial and street traffic shall not cause an increase in background ambient noise which will exceed 60 CNEL.

D. Noise attenuation. The City may require noise attenuation measures be incorporated into a project to obtain compliance with this section. Measures outlined in the noise policies of the General Plan should be utilized to mitigate noise to the maximum feasible extent.

Section 5-17.04 “Heavy Construction Equipment Noise” States it shall be unlawful for any person to operate heavy construction equipment during the hours specified below:

1) On weekdays prior to 7:00 a.m. and after 6:00 p.m.

2) On weekdays within 300 feet of occupied dwelling space, prior to 8:00 a.m. and after 5:00 p.m.

3) On weekends and holidays, prior to 9:00 a.m. and after 5:00 p.m., irrespective of the distance from the occupied dwelling.

“Heavy Construction Equipment” is defined as equipment used in grading and earth moving, including diesel engine equipped machines used for that purpose, except

pickup trucks of one ton or less. “Operate” includes the starting, warming-up, and idling of heavy construction equipment engines or motors.

Section 5-17.05 “Construction Activity Noise” States it shall be unlawful for any person to be involved in construction activity during the hours specified below:

1) On weekdays prior to 7:00 a.m. and after 6:00 p.m.
2) On weekdays within 300 feet of occupied dwellings, prior to 8:00 a.m. and after 5:00 p.m.
3) On weekends and holidays, prior to 9:00 a.m. and after 5:00 p.m., irrespective of the distance from the occupied dwellings.

“Construction Activity” means the process or manner of constructing, building, refurbishing, remodeling or demolishing a structure, delivering supplies thereto and includes, but is not limited to, hammering, sawing, drilling, and other construction activities when the noise or sound therefrom can be heard beyond the perimeter of the parcel where such work is being performed. The term “Construction Activity” also includes the testing of any audible device such as a burglar or fire alarm or loudspeaker. “Construction Activity” does not include floor covering installation or painting when done with non-powered equipment.

(City of Antioch 2015b)

Identification of Sensitive Receptors and Existing Ambient Noise Levels

Sensitive Receptors

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are considered to be more sensitive to noise intrusion than commercial or industrial activities. Ambient noise levels can also affect the perceived desirability or livability of a development.

The project site is in southeast Antioch and is currently occupied by a single-story residential structure, a single-story barn structure, a single-story three car garage structure, two seatrain storage containers, two small sheds, and a domestic water tower structure. The rest of the project site consists of land utilized for vehicle and equipment storage for a paving company. The area surrounding the project site consists of commercial, office and residential uses.

The project site is on the southwest corner of Lone Tree Way and Vista Grande Drive. Land use across Lone Tree Way, north of the project site, consists of office and

commercial uses. Land use across Vista Grande Drive, to the east of the site, consists of multi-family residential apartments. The project site is bordered by one- to two-story single family residential homes to the south and west. State Route 4 is located approximately 0.6 miles east of the project site.

The closest noise-sensitive receptors to the project site are the single-family residential homes along Plumwood Way and Hollowglen Court. According to the April 19, 2021 Preliminary Not for Construction drawing set, the south edge of the project site will be as close as 16 feet from the residential home at 5002 Hollowglen Court.

Ambient Noise Levels

The existing noise environment in a project area is characterized by the area's general level of development because the level of development and ambient noise levels tend to be closely correlated. Areas that are not urbanized are typically relatively quiet, while areas that are more urbanized are noisier as a result of roadway traffic, industrial activities, and other human activities.

The City as a whole is exposed to noise generated by traffic on major freeways, such as SR-4, and to a lesser extent along major arterial roads, such as Lone Tree Way. The ambient noise levels at and around the 5200 Lone Tree Way gas station project were estimated using the published noise contours in Tables 4.9.C "Existing Traffic Noise" and 4.9.E "Projected Maximum Noise Contours at Build Out" in the Draft General Plan Update Environmental Impact Report for the City of Antioch. Table 4.9.C notes the following noise contour lines for Lone Tree Way south of James Donlon Boulevard:

- 70 dB(A) CNEL – 71 feet from the roadway centerline
- 65 dB(A) CNEL – 142 feet from the roadway centerline
- 60 dB(A) CNEL – 301 feet from the roadway centerline

Table 4.9.E lists the following future noise contours for arterial roadways:

- 70 dB(A) CNEL – 86 feet from the roadway centerline
- 65 dB(A) CNEL – 242 feet from the roadway centerline
- 60 dB(A) CNEL – 583 feet from the roadway centerline
- 55 dB(A) CNEL – 1,318 feet from the roadway centerline

The gas station project site is located 51 feet to 347 feet from the centerline of Lone Tree Way. Using Table 4.9.E in the draft EIR, ambient noise levels are estimated between 68 dB(A) to 71 dB(A). The residential home closest to Lone Tree Way is 114 feet from the roadway centerline. Estimated ambient noise levels from Lone Tree Way could be up to 69 dB(A) at the home. The single-family home at 5002 Hollowglen Court is about 362 feet from the centerline of Lone Tree Way. Estimated ambient noise levels at this home are around 63 dB(A).

Therefore, ambient noise levels at the project site should be at the 70 dB(A) CNEL level recommended for commercial/industrial sites in paragraph 11.6.1 “Noise Objective” in the City of Antioch General Plan. The ambient noise level at the existing residential homes may already be above the recommended 60 dB(A) CNEL level listed in the general plan.

3.13.2 Methodology

In accordance with the requirements of CEQA, the noise analysis evaluates the project’s noise sources to determine the impact of the proposed project on the existing ambient noise environment. As noted above, noise contours listed in Table 4.9.E “Projected Maximum Noise Contours at Build Out” in the Draft General Plan Update Environmental Impact Report for the City of Antioch were used to provide baseline noise conditions at nearby sensitive receptors and within the project site vicinity. For the purpose of this analysis, potential sensitive receptors were determined by reviewing current aerial photography.

Impacts from future project-related traffic were estimated using the impact analysis contained within the traffic report, prepared by Stantec.

Noise from the project’s mechanical systems would operate regularly and are therefore required to comply with the policies and restrictions listed in the General Plan and Code of Ordinances.

The Federal Highway Administration Roadway Construction Noise Model (RCNM) was used to estimate the impact from short-term construction activities. The RCNM is used as the Federal Highway Administration’s national standard for predicting noise generated from construction. The RCNM analysis includes the calculation of noise levels at a defined distance for a variety of construction equipment. The spreadsheet inputs include acoustical use factors and distance to receptors and calculates the expected Lmax and Leq values at a selected receptor.

The Noise Report prepared by Stantec staff is provided as Appendix E to this ISMND.

EPA Guidelines

The EPA has established guidelines (EPA 1973) for assessing the impact of an increase in noise levels. These guidelines have been used as industry standard for several years to determine the potential impact of noise increases on communities. Most people will tolerate a small increase in background noise (up to about 5 dB(A)) without complaint, especially if the increase is gradual over a period of years (such as from gradually increasing traffic volumes). Increases greater than 5 dB(A) may cause complaints and interference with sleep. Increases above 10 dB(A) (heard as a doubling of judged loudness) are likely to cause complaints and should be considered a serious increase. Table 3.13-6 defines each of the traditional impact descriptions, their quantitative range, and the qualitative human response to changes in noise levels.

Table 3.13-6. U.S. Environmental Protection Agency (EPA) Impact Guidelines

Increase over Existing or Baseline Sound Levels	Impact Per EPA Region Guidelines	Qualitative Human Perception of Difference in Sound Levels
0 decibels (dB) to 5 dB	Minimum Impact	Imperceivable or Slight Difference
6 dB to 10 dB	Significant Impact	Significant Noticeable Difference – Complaints Possible
Over 10 dB	Serious Impact	Loudness Changes by a Factor of Two or Greater. Clearly Audible Difference – Complaints Likely

3.13.3 Environmental Impact Analysis

This section discusses potential impacts related to noise associated with the proposed project and provides mitigation measures where necessary.

Impact NOI-1	**Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**

Impact Analysis

Exterior Traffic Noise Level Impacts

The level of traffic noise experienced at a location depends primarily on traffic speed (tire noise increases with speed) and the proportion of truck traffic on the road. Trucks generate engine, exhaust, and wind noise in addition to tire noise.

Changes in traffic volumes can also have an impact on overall noise levels. For example, it takes 25 percent more traffic volume to produce an increase of only 1 dB(A) in the ambient noise level. For roads already heavy with traffic volume, an increase in traffic numbers could even reduce noise because the heavier volumes could slow down the average speed of the vehicles. A doubling of traffic volume results in a 3 dB(A) increase in noise levels.

In Section 3.17 Transportation, it is stated that the proposed project does not conflict with the General Plan Circulation Element, any program plan, ordinance, or policy addressing the circulation system. The proposed project does not propose to amend or adjust roadway classifications, the roadway network, transit routes, or bicycle network as identified in the General Plan. Since the project does not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, the impact of noise produced from the traffic associated with the proposed project is also anticipated to be less than significant.

Interior Traffic Noise Level Impacts

CalGreen States if an occupied non-guestroom space is exposed to a noise level of 65 dB(A) Leq 1-hr during any hour of operation, the exterior façade design is required to incorporate features to reduce noise inside the spaces to a maximum of 50 dBA Leq 1-hr. Given the convenience store on the project site would be exposed to noise levels up to 71 dB(A) CNEL/Ldn, a 1-hour noise level of 65 dB(A) Leq or greater is possible, and the project would be required to comply with the CalGreen requirements.

The April 19, 2021, Preliminary Not for Construction drawing set shows a hard-surfaced floor, exposed metal deck ceiling, and about 562 sf of exterior glazing in the front wall of the convenience store. Using these assumptions, windows with a minimum Outside-

Inside Transmission Class (OITC) rating of OITC 20 would be required to help achieve the code-dictated maximum 50 dB(A) 1-hour Leq noise level. A typical 1 inch thick insulating glass unit constructed of ¼ inch glass – ½ inch airspace – ¼ inch glass has an expected rating of OITC 26. Therefore, standard construction should be acceptable for the convenience store to achieve the CalGreen code requirements and traffic noise levels would have a less than significant impact.

Proposed Project Fixed-Source Noise

The roof plan contained in the April 19, 2021, Preliminary Not for Construction drawing set shows two rooftop units, one exhaust fan, and three condensing units on top of the convenience store.

There is also a car wash tunnel located on the east side of the convenience store. Vehicles will enter the car wash tunnel from the south and exit to the north. Typical car wash tunnels will have blowers at the end to dry cars as the exit the tunnel. The single-family residential homes along Plumwood Way should be well-shielded from the car wash tunnel by the convenience store and by an existing block wall at the property line of the project site. The multi-family residential units across Vista Grande Drive will experience shielding of noise from the car wash from the east wall of the car wash tunnel itself. The single-family residential homes around Hollowglen Court will be separated from the car wash tunnel by the existing block wall only.

Both the rooftop equipment and the car wash operation will generate noise that will radiate to the neighboring properties. The noise from this equipment would be obliged to comply with the requirements in Policy 11.6.2.e in the General Plan and the maximum noise level limits listed in Section 9-5.1901, Paragraph A in the City of Antioch Code of Ordinances.

When the actual on-site equipment is selected, including the car wash blowers, a noise analysis will be prepared by a qualified acoustical engineer and the equipment will be designed to incorporate measures as needed, such as shielding, barriers, and/or attenuators to reduce noise levels that may affect nearby properties. Noise levels from the project's fixed-source equipment will either be designed to achieve 60 dB(A) Ldn at the outdoor living areas of the existing residential receptors or will not cause an audible (3.0 dB(A)) increase in noise in areas where General Plan noise objectives are already exceeded as the result of existing development.

With the requirements listed in Policy 11.6.2.e in the General Plan and Section 9-5.1901, Paragraph A (Mitigation Measure NOI-1), the impact of fixed-source noise to the neighboring properties would be less than significant.

Proposed Operational Noise

When the project is completed, noise will be generated from the operation of the new gas station, including parking lot activity, noise from gas pump kiosks, and potential background music. Noise from patrons visiting the convenience store would consist of driving to the store and parking lot activity. Noise from parking lot activity includes elements, such as car doors closing and conversation. These activities will be very short in duration and much quieter than the existing traffic experienced on the local roads. For example, from Table 3.13-2 above, normal conversation at 3 feet is 65 dB(A). The closest noise-sensitive receptors are about 85 feet away from the convenience store. Using distance attenuation of 6 dB per doubling of distance, normal conversation at the gas station would only be 36 dB(A) at the closest residential receptors and would be well below the noise level generated from current street traffic. Therefore, operation of the proposed project would have a less than significant impact on neighboring properties.

Trash Enclosure

The April 19, 2021, Preliminary Not for Construction drawing set shows a trash enclosure located on the west side of the parking lot, approximately 106 feet from the closest residential receptors along Plumwood Way. The trash enclosure will be completely closed by concrete walls on the north, south, and west sides of the dumpsters to shield them from the neighboring residential homes.

Activity from garbage truck traffic and trash pickup would remain the same as currently experienced with the residential and commercial uses already around the project site and noise from trash pickup should have a less than significant impact.

Short-term Construction Noise Impacts

Two types of short-term noise impacts could occur during construction. The first type of short-term noise impact is traffic noise from construction crew vehicular commutes on the access roads leading to and from the project site. As stated in Section 3.17 Transportation, construction of the proposed project would generate traffic through the transport of workers, equipment, and materials to and from the project site. It is currently anticipated that project construction would take approximately 8 months to complete,

starting in June 2022 and ending in January 2023. Construction equipment and materials would be stored onsite. Construction activities are anticipated to be mostly confined to the project site, but the construction of a turn lane into the project site may require lane closures along Lone Tree Way. Project construction and grading activities would be consistent with the Antioch Municipal Code Section 5-17.05 and would occur on weekdays from 7:00 a.m. - 6:00 p.m., on weekdays within 300 feet of occupied dwellings, 8:00 a.m. - 5:00 p.m., and on weekends and holidays 9:00 a.m. - 5:00 p.m., irrespective of the distance from the occupied dwellings (City of Antioch 2020b). Since construction traffic would be temporary and would be spread across the duration of construction, this impact would be less than significant.

The second type of short-term noise impact is related to noise generated during construction. Construction activities would include demolition, site preparation, grading, building construction, paving, and architectural coating. Each construction stage has its own mix of equipment, and consequently, its own noise characteristics. The various construction operations would change the character of the noise generated at the project site and therefore, the noise level as construction progresses. The loudest stages of construction include the demolition, site preparation, and grading stages, as the noisiest construction equipment is typically earthmoving and grading equipment.

The construction of the 5200 Lone Tree Way United Pacific Gas Station Project would be conducted in six stages and each stage will use different construction equipment. The main types of noise-producing equipment for each construction stage are shown in Table 3.13-7.

Table 3.13-7. Construction Stage Equipment

Construction Stage	Construction Equipment	
Demolition	• Concrete Saw • Rubber-Tired Dozer • Tractor	• Front-End Loader • Backhoe • Haul Trucks (2)
Site Preparation	• Grader • Rubber-Tired Dozer	• Tractor
Grading	• Grader • Rubber-Tired Dozer • Tractor	• Front-End Loader • Haul Trucks (3)
Building Construction	• Crane • Generator • Welders (3)	• Forklift • Tractor

Construction Stage	Construction Equipment
Paving	• Cement Mixer • Paver • Paving Equipment • Roller • Tractor
Architectural Coating	• Air Compressor

Table 3.13-8 lists the types of construction equipment and the maximum and average operational noise level as measured at 16 feet, 36 feet, and 85 feet from the operating equipment. The 16 feet distance represents the approximate closest distance between the south edge of the project site and the closest noise-sensitive receptor at 5002 Hollowglen Court. The 16 feet distance would be applicable during the Demolition, Site Preparation, and Grading stages of construction. The 36 feet distance is the estimated closest distance between the paving work and the residence at 5002 Hollowglen Court. The 85 feet distance is the approximate closest distance between the closest residential receptor and the building construction and architectural coating work.

Table 3.13-8. Summary of Construction Equipment Source Levels

Construction Equipment Source at the Project Site	Distance to Nearest Sensitive Receptor	Sound Level at Receptor		
		Lmax, dB(A)	Acoustical Use Factor (%)	Leq, dB(A)
Backhoe	16 feet	87.5	40	83.5
	36 feet	80.4		76.4
	85 feet	73.0		69.0
Crane	16 feet	90.4	16	82.5
	36 feet	83.4		75.4
	85 feet	75.0		68.0
Compressor (air)	16 feet	87.6	40	83.6
	36 feet	80.5		76.5
	85 feet	73.1		69.1
Concrete Mixer	16 feet	88.7	40	84.7
	36 feet	81.7		77.7
	85 feet	74.2		70.2
Concrete Saw	16 feet	99.5	20	92.5
	36 feet	92.4		85.4

Construction Equipment Source at the Project Site	Distance to Nearest Sensitive Receptor	Sound Level at Receptor		
		Lmax, dB(A)	Acoustical Use Factor (%)	Leq, dB(A)
	85 feet	85.0		78.0
Dozer	16 feet	91.6	40	87.6
	36 feet	84.5		80.5
	85 feet	77.1		73.1
Forklift (Gradall)	16 feet	93.3	40	89.3
	36 feet	86.3		82.3
	85 feet	78.8		74.8
Front End Loader	16 feet	89.0	40	85.0
	36 feet	82.0		78.0
	85 feet	74.5		70.5
Generator	16 feet	90.5	50	87.5
	36 feet	83.5		80.5
	85 feet	76.0		73.0
Grader	16 feet	94.9	40	90.9
	36 feet	87.9		83.9
	85 feet	80.4		76.4
Haul Truck	16 feet	86.4	40	82.4
	36 feet	79.4		75.4
	85 feet	71.9		67.9
Paver and Paving Equipment	16 feet	87.1	50	84.1
	36 feet	80.1		77.1
	85 feet	72.6		69.6
Roller	16 feet	89.9	20	82.9
	36 feet	82.9		75.9
	85 feet	75.4		68.4
Tractor	16 feet	93.9	40	89.9
	36 feet	86.9		82.9
	85 feet	79.4		75.4
Welder	16 feet	83.9	40	79.9

Construction Equipment Source at the Project Site	Distance to Nearest Sensitive Receptor	Sound Level at Receptor		
		Lmax, dB(A)	Acoustical Use Factor (%)	Leq, dB(A)
	36 feet	76.9		72.9
	85 feet	69.4		65.4

Source: Federal Highway Administration Road Construction Noise Model v1.1 2018

A worst-case condition for construction activity would assume all noise-generating equipment were operating at the same time and at the same distance from the closest noise-sensitive receptor. Using this assumption, the RCNM program calculated the following combined Leq and Lmax noise levels from each stage of construction as shown in Table 3.13-9.

Table 3.13-9. Calculated Noise Level from Each Construction Stage

Construction Phase	Distance to Closest Noise Sensitive Receptor (feet)	Calculated Maximum Sound Level in A-Weighted Decibels	Calculated Equivalent Sound Level in A-Weighted Decibels
Demolition	16 feet	101.8	96.3
Site Preparation	16 feet	98.4	94.5
Grading	16 feet	99.6	95.6
Building Construction	85 feet	84.3	80.1
Paving	36 feet	90.2	85.9
Architectural Coating	85 feet	73.1	69.1

Although noise levels from construction could exceed the 60-65 dB(A) land use compatibility level for residential properties as defined by the General Plan (Antioch 2003a), increases in noise levels from construction activity would be temporary. All construction activities at the site would also follow the time and noise reduction measure requirements listed in Policies 11.6.2.i, j, k, m, and n in the General Plan and Sections 5-17.04 and 5-17.05 in the City of Antioch Code of Ordinances (Antioch 2015b).

In conclusion, construction noise would be short-term and intermittent. Furthermore, the implementation of the mitigation measures and hours restrictions as dictated by the City (Mitigation Measure NOI-2) would reduce construction noise to the closest noise-sensitive receptors to the extent feasible. Therefore, with implementation of Mitigation

Measures NOI-1 and NOI-2, impacts from construction noise would be less than significant.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures

MM NOI-1 **Project Fixed-Source Noise.** The noise from all mechanical equipment associated with the project, including the car wash blowers, shall comply with the requirements in Policy 11.6.2.e in the City of Antioch General Plan and the maximum noise level limits listed in Section 9-5.1901, Paragraph A in the City of Antioch Code of Ordinances. Policy 11.6.2.e in the City of Antioch General Plan States the following: "When new development incorporating a potentially significant noise generator is proposed, require noise analyses to be prepared by a qualified acoustical engineer. Require the implementation of appropriate noise mitigation when the proposed project will cause new exceedances of General Plan noise objectives, or an audible (3.0 dB(A)) increase in noise in areas where General Plan noise objectives are already exceeded as the result of existing development."

Section 9-5.1901, Paragraph A in the City of Antioch Code of Ordinances States "Uses adjacent to outdoor living areas (e.g., backyards for single-family homes and patios for multifamily units) and parks shall not cause an increase in background ambient noise which will exceed 60 CNEL."

MM NOI-2 **Construction Activity.** All construction activity shall follow the time and noise reduction measure requirements listed in Policies 11.6.2.i, j, k, m, and n in the City of Antioch General Plan and Sections 5-17.04 and 5-17.05 in the City of Antioch Code of Ordinances as follows:

i. Ensure that construction activities are regulated as to hours of operation in order to avoid or mitigate noise impacts on adjacent noise-sensitive land uses.

j. Require proposed development adjacent to occupied noise sensitive land uses to implement a construction-related noise mitigation plan. This plan would depict the location of construction equipment storage

and maintenance area, and document methods to be employed to minimize noise impacts on adjacent noise sensitive land uses.

k. Require that all construction equipment utilize noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

m. Prior to the issuance of any grading plans, the City shall condition approval of subdivisions and non-residential development adjacent to any developed/occupied noise-sensitive land uses by requiring applicants to submit a construction-related noise mitigation plan to the City for review and approval. The plan should depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of the project through the use of such methods as:

- The construction contractor shall use temporary noise-attenuation fences, where feasible, to reduce construction noise impacts on adjacent noise sensitive land uses.

- During all project site excavation and grading on-site, the construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards. The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.

- The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

- The construction contractor shall limit all construction-related activities that would result in high noise levels to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Saturday. No construction shall be allowed on Sundays and public holidays.

n. The construction-related noise mitigation plan required shall also specify that haul truck deliveries be subject to the same hours

specified for construction equipment. Additionally, the plan shall denote any construction traffic haul routes where heavy trucks would exceed 100 daily trips (counting those both to and from the construction site). To the extent feasible, the plan shall denote haul routes that do not pass sensitive land uses or residential dwellings. Lastly, the construction-related noise mitigation plan shall incorporate any other restrictions imposed by the City.

Section 5-17.04 “Heavy Construction Equipment Noise” and Section 5-17.05 “Construction Activity Noise” States it shall be unlawful for any person to operate heavy construction equipment or be involved in construction activity during the hours specified below:

1) On weekdays prior to 7:00 a.m. and after 6:00 p.m.

2) On weekdays within 300 feet of occupied dwelling space, prior to 8:00 a.m. and after 5:00 p.m.

3) On weekends and holidays, prior to 9:00 a.m. and after 5:00 p.m., irrespective of the distance from the occupied dwelling.

Level of Significance After Mitigation
Less Than Significant Impact with Mitigation.

Impact NOI-2	**Generation of excessive groundborne vibration or groundborne noise levels?**

Impact Analysis
During construction of the proposed project, equipment such as trucks and bulldozers may be used as close as 16 feet from the nearest sensitive receptor at 5002 Hollowglen Court. Rollers may be used as close as 36 feet from the nearest residential property. Equipment used during project construction could generate vibration levels between 0.0124 and 0.1738 PPV as shown below in Table 3.13-10. Although vibration levels from construction could exceed the threshold at which human annoyance could occur, construction activities would be temporary and would be limited to the hours restrictions set in the City of Antioch General Plan and Municipal Code.

All estimated construction vibration levels are expected to be below the limit for building damage as defined by Table 3.13-4.

Table 3.13-10. Calculated Vibration Levels for Construction Equipment

Type of Equipment	Calculated Peak Particle Velocity at Closest Noise-Sensitive Receptor	Threshold at which Human Annoyance Could Occur	Potential for Proposed Project to Exceed Threshold
Large Bulldozer	0.1738	0.10	Yes
Loaded Trucks	0.1484	0.10	Yes
Small Bulldozer	0.1215	0.10	Yes
Vibratory Roller	0.0124	0.10	None

Source: Federal Transit Administration Transit Noise and Vibration Impact Assessment Manual (FTA 2018)

Construction activities would again be temporary in nature and would likely occur during normal daytime working hours. The Federal Transit Administration offers construction vibration mitigation measures listed in Section 7.2, Construction Vibration Assessment, in the Transit Noise and Vibration Impact Assessment Manual document (FTA Report No. 0123 September 2018). The applicable measures in the FTA document are included in Mitigation Measure NOI-3.

Implementation of Mitigation Measure NOI-3 would follow the recommendations provided by the FTA; therefore, impacts would be less than significant.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures

MM NOI-3 Construction Vibration. Follow the FTA construction mitigation measures listed in Section 7.2, Construction Vibration Assessment, in the Transit Noise and Vibration Impact Assessment Manual document (FTA Report No. 0123 September 2018).

Design Considerations and Project Layout

- Route heavily loaded trucks away from residential streets. Select streets with the fewest homes if no alternatives are available.
- Operate earth-moving equipment on the construction lot as far away from vibration-sensitive sites as possible.

Sequence of Operations

- Phase demolition, earth-moving, and ground-impacting operations so as not to occur in the same time period. Unlike noise, the total vibration level produced could be substantially less when each vibration source operates separately.

- Avoid nighttime activities. Sensitivity to vibration increases during the nighttime hours in residential neighborhoods.

Alternate Construction Methods

- Avoid vibratory rollers and packers near sensitive areas.

Vibration Mitigation Plan

- Describe and commit to a mitigation plan that will be developed and implemented during the engineering and construction phase when the information available during the project development phase will not be sufficient to define specific construction vibration mitigation measures. The objective of the plan should be to minimize construction vibration damage using all reasonable and feasible means available. The plan should include the following components:

    - A procedure for establishing threshold and limiting vibration values for potentially affected structures, based on an assessment of each structure's ability to withstand the loads and displacements due to construction vibrations.

    - A commitment to develop a vibration monitoring plan during the engineering phase and to implement a compliance monitoring program during construction.

Level of Significance After Mitigation
Less Than Significant Impact with Mitigation.

Impact NOI-3	**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?**

Impact Analysis

The proposed project is not located within the vicinity of a private airstrip or an airport land use plan. The closest airport to the project site is the Byron Airport 10.95 miles to the southeast. A private airstrip along Sunnys Way is approximately 5.94 miles west of the project site. A helipad is located at the Kaiser Permanente Antioch Hospital 1.18 miles southwest of the project site. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels, and impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

3.14 POPULATION AND HOUSING

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b)	Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.14.1 Environmental Setting

Antioch is the second largest City in Contra Costa County. According to the U.S. Census, the City had a population of 102,372 in 2010 (California Department of Finance 2020a). Since 2010, the City's population has increased by 9.64 percent to 112,236 people in 2020 (California Department of Finance 2020b). By the year 2025, it is expected the City's population will increase to approximately 120,300 (City of Antioch 2015). Antioch's economy functions as a small part of the Bay Area economy and comprises 1.1 percent of the Bay Area labor force (City of Antioch 2003b). One of the objectives of the General Plan is to create a larger employment base within the City by 2030 and includes policies to provide for a mix of employment generating uses and ample employment opportunities for City residents (City of Antioch 2003a). In 2010, the Association of Bay Area Governments (ABAG) estimated there were approximately 19,090 jobs in the City of Antioch (City of Antioch 2015). It is projected the total number of jobs in the City would increase to 25,530 by 2040 (City of Antioch 2015).

3.14.2 Methodology

The following evaluation of potential population, housing, and employment impacts associated with the proposed project was based on data obtained from the U.S. Census, the California Department of Finance, and applicable planning documents from the City. The following impact discussions consider the impacts of the proposed project related to employment, population, and housing in the City.

3.14.3 Environmental Impact Analysis

This section discusses potential impacts related to population and housing associated with the proposed project and provides mitigation measures where necessary.

Impact POP-1	**Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

Impact Analysis
The proposed project includes the construction of a gas station, car wash, and a convenience store and does not include any residential components or services that would induce population growth. While the proposed project would generate a demand for employees, the additional workers would not result in a substantial increase in population. Therefore, the proposed project would not directly or indirectly induce substantial unplanned population growth and there would be no impacts.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact POP-2	**Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?**

Impact Analysis
One single-family residence is located on the project site. The proposed project would not displace a substantial number of people or existing housing that would require the construction of replacement housing elsewhere. Therefore, no impacts would occur due to the displacement of housing or people.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

3.15 PUBLIC SERVICES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

3.15.1 Environmental Setting

Fire Protection

Contra Costa County Fire Protection District (CCCFPD) provides fire suppression and emergency medical services (EMS) to nearly a million people across its 304-square mile district area, and through mutual aid, in and around the 19 cities and unincorporated communities of Contra Costa County California (Contra Costa County 2021). The CCCFPD is an “all-hazards” organization providing fire suppression, paramedic EMS, technical rescue, water rescue, and fire prevention/investigation services. The 2003 General Plan Update EIR States, that the CCCFPD operates 25 fire stations and responds to approximately 45,000 incidents annually (City of Antioch 2003b). Four of the fire stations are located within the City.

In 2018, CCCFPD responded to 60,000 fire, rescue, and medical emergency calls (CCCFPD 2018). Minimum response times are established by the county, which requires that 90 percent of all calls be responded to in an average of between 10 and 11 minutes and 45 seconds. Additionally, the City’s General Plan has a response time goal of 80 percent for all City emergencies within 5 minutes (City of Antioch 2003b). In 2018, CCFPD’s average response time was 4 minutes and 38 seconds. CCCFPD is meeting the County and City General Plan requirements by responding to 95 to 97 percent of calls (CCCFPD 2018).

Police Protection

The Antioch Police Department (APD) provides police services for the City. The department has a sworn staff of 104 officers and 33 nonsworn employees, which includes Dispatchers, Community Services Officers, and Administrative Support staff (City of Antioch 2021a). In 2018, Antioch police saw a total of 199,073 overall calls by volume, of which 59,811 were emergency 9-1-1 calls, and 88,123 were calls for service (East County Today 2019). The average response time for Priority 1 calls was 8 minutes and 54 seconds and the average response times for non-emergency calls were approximately 60 minutes (East County Today 2019).

Schools

The City is served by the Antioch Unified School District (AUSD), which provides kindergarten through high school education in the City. The project site is served by Diablo Vista Elementary School, Dallas Ranch Middle School, and Deer Valley High School (AUSD 2021). In the 2019-2020 school year, the Diablo Vista Elementary School had an enrollment of approximately 492 students; Dallas Ranch Middle School had an enrollment of 937 students; and, Deer Valley High School had an enrollment of 1,886 students (California Department of Education 2021).

Parks

The City owns and administers 31 parks, varying in size and amenities from 2 acres to 99 acres. Over 400 acres of parks, open space areas, and marinas are located within the City, 200 acres of which are developed. The remaining 200 acres consist of acreage waiting development or are managed exclusively as open space (City of Antioch 2003b). The nearest park to the project site is Heidorn Park, which is located 0.1 miles south of the project site.

3.15.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the Public Facilities and Services Element of the General Plan, Parks and Recreation Element of the General Plan, the General Plan EIR, the Antioch Municipal Code, and Section 2.0, Project Description, of this ISMND.

3.15.3 Environmental Impact Analysis

This section discusses potential impacts on public services associated with the proposed project and provides mitigation measures where necessary.

Impact PUB-1	**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:**
	Fire protection?
	Police protection?
	Schools?
	Parks?
	Other public facilities?

Impact Analysis

Fire Protection

The proposed project which includes a gas station, convenience store, and car wash would not necessitate a significant increase in demand for fire protection services. Upon completion of the proposed development, the CCCFPD would provide fire protection services to the project site. As required by the CCCFPD's Fire Ordinance Section 105.6.31 of Ordinance No. 2019-37, the proposed project would be required to obtain an operational permit for motor fuel dispensing facilities.

The proposed project would be required to pay the applicable fire protection fees in accordance with Title 3 Section 7 of the City's Municipal Code (City of Antioch 2020). In addition, the proposed buildings would be constructed in accordance with the fire protection requirements of the most recent California Fire Code. Conformance with the California Fire Code would reduce risks associated with fire hazards. The proposed driveways would be 25 to 30 feet wide to allow emergency vehicles to access the project site. The CCCFPD and the City's Building Inspection Services Division would review the project building plans to ensure compliance with all code requirements. Therefore, the impact to fire protection services would be less than significant.

Police Protection

Law enforcement services for the project site are provided by the APD. Implementation of the project would not necessitate a significant increase in demand for police protection services. The project applicant would be required to pay Development Impact Fees for police facilities per Section 9-3.50 of the City Municipal Code. The proposed project will not require the construction of new or physically altered police protection facilities. Therefore, the impact to police protection services would be less than significant.

Schools

The proposed project does not include residential components and would not increase the demand for school facilities and services. The proposed project would be required to pay a development fee to AUSD. The AUSD collects development fees for new commercial/industrial development projects on a per square foot basis. Therefore, with the payment of fees, there would be no impacts to school facilities and services.

Parks

The proposed project would not add new residents as the project does not include any residential components. The developer of the proposed project would be required to pay a Development Impact Fee established under Municipal Code Section 9-3.50. The fees collected would be used by the City to fund public facilities such as parks and recreation facilities which would mitigate the impacts on existing parks and recreational facilities caused by new developments. Therefore, with the payment of fees, there would be no impacts to parks and recreational facilities.

Other Public Facilities

The proposed project would not result in an increase in the demand for library facilities and community centers. In accordance with the City's Municipal Code, Development Impact Fees would be required to offset any additional service needs. With payment of fees, there would be no impacts.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

3.16 RECREATION

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
c)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

3.16.1 Environmental Setting

The City owns and administers 31 parks, varying in size and amenities from 2 acres to 99 acres. Over 400 acres of parks, open space areas, and marinas are located within the City, 200 acres of which are developed. The remaining 200 acres consist of acreage waiting development or are managed exclusively as open space (City of Antioch 2003a). The nearest park to the project site is Heidorn Park is located approximately 0.1 miles from the project site, directly south of the residential neighborhood that borders the southern end of the project site.

3.16.2 Methodology

The following analysis is based on a review of the General Plan, General Plan EIR and the Antioch Code of Ordinance.

3.16.3 Environmental Impact Analysis

This section discusses potential impacts to recreation associated with the proposed project and provides mitigation measures where necessary.

Impact REC-1 Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Impact Analysis

The proposed project includes the development of a gas station, convenience store and a car wash and would not include residential components. The proposed project would

not increase the population and therefore, would not increase the use of existing neighborhood or regional park and there would be no impact.

Additionally, the developer of the proposed project would be required to pay a Development Impact Fee established under Section 9-3.50 of the Code of Ordinance which would be used by the City to fund public facilities such as parks and recreation facilities which would mitigate the impacts on existing parks and recreational facilities caused by new developments. The proposed project would comply with all City ordinances set forth and there would be no impact to parks and recreational facilities.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact REC-2	**Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?**

Impact Analysis
The proposed project does not include any recreational facilities and would not require the construction or expansion of recreational facilities. Therefore, there would be no impact.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

3.17 TRANSPORTATION

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b)	Would the project 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?	☐	☐	☒	☐

3.17.1 Environmental Setting

Roadway System

Freeways

Regional access in the project vicinity is provided by State Route 4, which is a part of the State highway network. State Route 4 primarily has two travel lanes in each direction and routes from Interstate 80 in the San Francisco Bay Area to the west to SR 89 in the Sierra Nevada in the east. A full interchange with Lone Tree Way is provided approximately 0.6 miles east of the project site.

Arterials

The local street and roadway system within the City is composed of a hierarchy of streets with varying functions. Arterial roads range from two-lane arterials to six-lane arterials that link residential and commercial districts with the freeway network and provide intercity connections. The proposed project is served primarily by Lone Tree Way, an arterial roadway that consists of three travel lanes in each direction and a raised median. Lone Tree Way also provides direct access to SR-4, approximately 0.6 miles east of the project site.

Collectors and Local Streets

Local streets are intended to serve adjacent and nearby residential and commercial neighborhoods or business areas only. Vista Grande Drive serves as a local street directly adjacent to the project site.

Bicycle Facilities

Existing bicycle facilities in the area consist of Class II lanes and Class III routes. In the General Plan, Class II lanes are defined as striped bicycle lanes on roadways, and Class III are defined as signed bicycle routes sharing the roadway (City of Antioch 2003a). Currently there are Class II lanes present on Vista Grande Drive on both sides of the roadway, which connect to the wider bicycle network via Class III facilities on Lone Tree Way.

Bus System

Tri Delta Transit operates bus transit services in the region to connect to local hubs and BART railway stations. The closest transit stop to the project site is located approximately 100 feet east of the site on Lone Tree Way adjacent to the Vista Grande Drive intersection. It provides access to three routes; Route 380 (weekdays only) which connects from Pittsburg BART to Antioch BART, and Routes 384 (weekdays only) and 385 (weekdays only) which connect from Antioch BART to Brentwood Park & Ride (Tri Delta Transit 2021). Tri Delta Transit buses are all equipped with bicycle racks, which would allow commuters to ride from the proposed project to the transit stop and take the bus the remainder of the journey as an alternative to riding a bicycle the full distance to the BART station.

RTP/SCS and General Plan Consistency

The Final Plan Bay Area 2050 is the long-range Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) for the nine-county San Francisco Bay Area. The RTP/SCS is prepared by the Metropolitan Transportation Commission (MTC) and the ABAG to guide the development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities.

In accordance with State and federal law, the RTP/SCS is to be updated at least every four years to reflect changes to funding opportunities and respond to growth. The preparation of the Final Bay Area 2050 RTP/SCS included an extensive public outreach program where members of the public and member agencies were engaged to provide input to the RTP/SCS. In addition, an environmental impact report was prepared and

certified and the comment period allowed for members of the public and member agencies to review and comment on the RTP/SCS assumptions. The City is within the ABAG planning area and the City's General Plan assumptions have been considered and included in the RTP/SCS. Therefore, since the proposed project is consistent with the City's General Plan goals and policies, the proposed project is considered consistent with the RTP/SCS. The General Plan Circulation Element includes policies relating to roadway and intersection level of service (LOS), which are not relevant to CEQA analysis due to the Statewide change to VMT as the primary impact criteria for transportation. Therefore, LOS is not addressed in this study but is evaluated separately as part of the project's traffic study. The City's General Plan policies relating to circulation and transportation per the Circulation Element are as follows:

Objective 7.3.1 Provide adequate roadway capacity to meet the roadway performance standards set forth in the Growth Management Element.

Policy 7.3.2.a Facilitate meeting the roadway performance standards set forth in the Growth Management Element and improving traffic flow on arterial roadways.

- Work with the UP and BNSF railroads to construct grade separations along the tracks at Somersville Road, Hillcrest Avenue, "A" Street, the proposed Viera Road extension, and the proposed Phillips Lane extension.
- Promote the design of roadways to optimize safe traffic flow within established roadway configurations by minimizing driveways and intersections, uncontrolled access to adjacent parcels, on-street parking, and frequent stops to the extent consistent with the character of adjacent land uses.
- Provide adequate capacity at intersections to accommodate future traffic volumes by installing intersection traffic improvements and traffic control devices, as needed, as development occurs.
- Facilitate the synchronization of traffic signals.
- Where needed, provide acceleration and deceleration lanes for commercial access drives.

- Provide for reciprocal access and parking agreements between adjacent land uses, thereby facilitating off-street vehicular movement between adjacent commercial and other nonresidential uses.

- Encourage regional goods movement to remain on area freeways and other appropriate routes.

Policy 7.3.2.b Design and reconfigure collector and local roadways to improve circulation within and connections to residential and commercial areas.

- Implement appropriate measures to mitigate speeding and other traffic impacts in residential areas.

- Implement roadway patterns that limit through traffic on local residential streets.

Policy 7.3.2.c Require the design of new developments to focus through traffic onto arterial streets.

Policy 7.3.2.d Where feasible, design arterial roadways, including routes of regional significance, to provide better service than the minimum standards set forth in Measure C and the Growth Management Element. Thus, where feasible, the City will strive to maintain a "High D" level of service (v/c [volume-to-capacity ratio] = 0.85 to 0.89) within regional commercial areas and at intersections within 1,000 feet of a freeway interchange. The City will also strive where feasible to maintain low-range "D" (v/c = 0.80 to 0.84) in all other areas of the City, including freeway interchanges.

Policy 7.3.2.e Establish Assessment Districts in areas that will require major roadway infrastructure improvements that will benefit only that area of the City, and thereby facilitate the up-front construction of needed roadways.

Policy 7.3.2.f Design street intersections to ensure the safe passage of through traffic and accommodate anticipated turning movements. Implement intersection improvements consistent

with the following lane geometrics, unless traffic analyses indicate the need for additional turn lanes.

Policy 7.3.2.g Require traffic impact studies for all new developments that propose to increase the approved density or intensity of development or are projected to generate 50 peak hour trips or more at any intersection of Circulation Element roadways. The purpose of these studies is to demonstrate that:

- The existing roadway system, along with roads to be improved by the proposed project, can meet the performance standards set forth in Sections 3.4.1 and 3.4.2 of the Growth Management Element; and
- Required findings of consistency with the provisions of the Growth Management Element can be made.

Policy 7.3.2.k Where single-family residences have no feasible alternative but to front on collector or arterial roadways, require, wherever possible, that circular driveways or onsite turnarounds be provided to eliminate the need for residents to back onto the street.

Policy 7.3.2.l Locate driveways on corner parcels as far away from the intersection as is possible.

Policy 7.3.2.m Avoid locating driveways within passenger waiting areas of bus stops or within bus bays. Locate driveways so that drivers will be able to see around bus stop improvements.

Policy 7.3.2.n Use raised medians as a method for achieving one or more of the following objectives: access control, separation of opposing traffic flows, left turn storage, aesthetic improvement, and/or pedestrian refuge.

Policy 7.3.2.o Where medians are constructed, provide openings at the maximum feasible intervals, typically no less than 1/8 mile.

Policy 7.3.2.v Private streets, where permitted, shall provide for adequate circulation and emergency vehicle access. Private streets that will accommodate more than 50 vehicles per hour in the peak

hour or that are designed for on-street parking shall be designed to public street standards. The design of other private streets shall be subject to the review and approval of the City Engineer. Private streets shall be improved to public street standards prior to acceptance of dedications to the City.

Policy 7.3.2.x Require new development to construct all on-site roadways, including Circulation Element routes, and provide a fair share contribution for needed off-site improvements needed to maintain the roadway performance standards set forth in the Growth Management Element. Contributions for off-site improvements may be in the form of fees and/or physical improvements, as determined by the City Engineer. Costs associated with mitigating off-site traffic impacts should be allocated on the basis of trip generation and should have provisions for lower rates for income-restricted lower income housing projects needed to meet the quantified objectives of the General Plan Housing Element.

Objective 7.4.1 Maintenance of a safe, convenient, and continuous network of pedestrian sidewalks, pathways, and bicycle facilities serving both experienced and casual bicyclists to facilitate bicycling and walking as alternatives to the automobile.

Policy 7.4.2.a Design new residential neighborhoods to provide safe pedestrian and bicycle access to schools, parks and neighborhood commercial facilities.

Policy 7.4.2.b Design intersections for the safe passage of pedestrians and bicycles through the intersection.

Policy 7.4.2.c Provide street lighting that is attractive, functional, and appropriate to the character and scale of the neighborhood or area, and that contributes to vehicular, pedestrian, and bicycle safety.

Policy 7.4.2.d Maintain roadway designs that maintain mobility and accessibility for bicyclists and pedestrians.

Policy 7.4.2.e Integrate multi-use paths into creek corridors, railroad rights-of-way, utility corridors, and park facilities.

Policy 7.4.2.f Provide, as appropriate, bicycle lanes (Class II) or parallel bicycle/pedestrian paths (Class I) along all arterial streets and high-volume collector streets, as well as along major access routes to schools and parks.

Policy 7.4.2.j Permit the sharing or parallel development of pedestrian walkways with bicycle paths, where this can be safely accomplished, in order to maximize the use of public rights-of-way.

Policy 7.4.2.l Require the construction of attractive walkways in new residential, commercial, office, and industrial developments, including provision of shading for pedestrian paths.

Policy 7.4.2.m Maximize visibility and access for pedestrians and encourage the removal of barriers for safe and convenient movement of pedestrians.

Policy 7.4.2.n Ensure that the site design of new developments provides for pedestrian access to existing and future transit routes and transit centers.

Policy 7.4.2.o Pave walks and pedestrian pathways with a hard, all-weather surface that is easy to walk on. Walks and curbs should accommodate pedestrians with disabilities. Walks within open space areas should have specially paved surfaces that blend with the surrounding environment.

Policy 7.4.2.p In general, design walks to provide a direct route for short to medium distance pedestrian trips, and to facilitate the movement of large numbers of pedestrians. Meandering sidewalks are appropriate in areas where the natural topography or low-density land uses lend themselves to informal landscapes.

Objective 7.5.1 Maintenance of rail and bus transit, providing both local and regional service that is available throughout the week, and

operates on par with automobile travel during peak commute hours.

Policy 7.5.2.g Preserve options for future transit use when designing roadway and highway improvements.

Policy 7.5.2.i Include Tri-Delta Transit in the review of new development projects and require new development to provide transit improvements in proportion to traffic demands created by the project. Transit improvements may include direct and paved access to transit stops, provision of bus turnout areas and bus shelters, and roadway geometric designs to accommodate bus traffic.

Objective 3.4.3 Maintain acceptable traffic levels of service on City roadways through implementation of Transportation Systems Management, Growth Management, and the City's Capital Improvement Program, and ensure that individual development projects provide appropriate mitigation for their impacts.

Policy 3.4.4.a Place ultimate responsibility for mitigating the impacts of future growth and development, including construction of new and widened roadways with individual development projects. The City's Capital Improvements Program will be used primarily to address the impacts of existing development, and to facilitate adopted economic development programs.

Policy 3.4.4.b Continue to develop and implement action plans for routes of regional significance (see Circulation Element requirements).

Policy 3.4.4.c Ensure that development projects pay applicable regional traffic mitigation fees and provide appropriate participation in relation to improvements for routes of regional significance (see also Circulation Element Policy 5.3.1f).

Policy 3.4.4.d Consider level of service standards along basic routes to be met if 20-year projections based on the City's accepted traffic model indicate that conditions at the intersections that will be impacted by the project will be equivalent to or better than those specified in the standard, or that the proposed project has been required

to pay its fair share of the improvement costs needed to bring operations at impacted intersections into conformance with the applicable performance standard.

Project Construction

The proposed project would result in temporary construction activity with no ongoing operational changes to traffic generation or traffic patterns due to construction. Project construction is discussed in Section 2.2, Project Construction.

3.17.2 Methodology

In accordance with the updated CEQA guidelines that incorporate the requirements of SB 743, this analysis is prepared using VMT as the primary performance metric to measure project impacts. Generally, SB 743 moves away from using delay-based LOS as the metric for identifying a project's significant impact to instead use VMT.

SB 743 required the Governor's Office of Planning and Research to establish recommendations for identifying and mitigating transportation impacts within CEQA, as outlined in the Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR 2018). The document is referred to in this memorandum as OPR's Technical Advisory. OPR's Technical Advisory recommends methodologies for quantifying VMT, significance thresholds for identifying a transportation impact, and screening criteria to quickly identify if a project can be presumed to have a less than significant impact without conducting a full VMT analysis. Lead agencies are to adopt local guidelines appropriate for their jurisdiction. At this time, the City has not formally adopted VMT guidelines. Therefore, this VMT analysis has been prepared in accordance with OPR's Technical Advisory guidance.

Prior to undertaking a detailed VMT analysis, OPR's Technical Advisory recommends that lead agencies conduct a screening process. If a project satisfies one or more of the screening criteria, the project could be presumed to have a less-than-significant impact. OPR's Technical Advisory suggests that lead agencies may screen out VMT impacts using project size, maps depicting areas of low VMT, transit availability and provision of affordable housing screening criteria as shown in Table 3.17-1.

Table 3.17-1. Project Screening Criteria and Threshold

Category	Criteria/Screening	Threshold	Does Project Meet Criteria?
Transit Priority Area (TPA) Screening	Projects within ½ mile of a major transit stop or a stop located along a high-quality transit corridor generally reduce VMT and therefore can be screened out from completing a full VMT analysis.	If the Project is within ½ mile of a major or high-quality transit stop/corridor, the Project is assumed to have a less than significant impact. The project should generally also meet the following criteria: • FAR >= 0.75 • Not provide more parking than required by County • Be consistent with the regional SCS • Not replace existing affordable units with a smaller number of moderate to high-income units	No
Low VMT Area Screening	Projects within a low-VMT generating area of the city may be presumed to have a less than significant impact when land use is consistent with existing in the area and would not significantly alter travel patterns in the area, can be screened out from completing a full VMT analysis.	Project is within a low-VMT area and is similar in land use and trip generation to existing development in the area.	No
Project Type Screening	Retail projects (and other listed land uses) that are locally serving can be screened out from completing a full VMT analysis, as can projects generating less than 110 daily vehicle trips.	A local-serving Project or Project generates less than 110 daily vehicle trips.	Yes

As discussed in further detail, below, since the project is locally serving and meets the project type screening criteria described above, a VMT analysis is not required.

3.17.3 Environmental Impact Analysis

This section discusses potential impacts related to transportation associated with the proposed project and provides mitigation measures where necessary.

Impact TRANS-1 Conflict with program plan, ordinance or policy addressing the circulation system, including transit roadway, bicycle and pedestrian facilities?

Impact Analysis

The proposed project does not conflict with the General Plan Circulation Element, any program plan, ordinance, or policy addressing the circulation system. The project does not propose to amend or adjust roadway classifications, the roadway network, transit routes, or bicycle network as identified in the General Plan.

Site access improvements will not cause any conflicts with other improvements planned for the area. As a result, the proposed project would not create hazards or barriers for pedestrians, bicyclists, or local transit service.

Construction of the proposed project would generate traffic through the transport of workers, equipment, and materials to and from the project site. It is currently anticipated that project construction would take approximately 8 months to complete, starting in June 2022 and ending in January 2023. Construction equipment and materials would be stored onsite. Construction activities are anticipated to be mostly confined to the project site, but the construction of a turn lane into the project site may require lane closures along Lone Tree Way. Project construction and grading activities would be consistent with the Antioch Municipal Code Section 5-17.05 and would occur on weekdays from 7:00 a.m. - 6:00 p.m., on weekdays within 300 feet of occupied dwellings, 8:00 a.m. - 5:00 p.m., and on weekends and holidays 9:00 a.m. - 5:00 p.m., irrespective of the distance from the occupied dwellings (City of Antioch 2020b). Since construction traffic would be temporary and would be spread across the duration of construction, this impact would be less than significant.

As described, Class III bicycle facilities are provided on Lone Tree Way adjacent to the project site. In addition, Tri Delta Transit provides public transit service to a stop located approximately 100 feet east of the project. The proposed project would not modify or interfere with the bicycle and bus facilities adjacent to the project site during operation, though potential lane closures during construction may result in detours for bicyclists. Since potential detours would be temporary, this impact would be less than significant.

General Plan goals and policies related to roadway operational conditions and LOS are addressed in the project's traffic study. The LOS analysis will not be included as part of the proposed project CEQA documents but will be used by the City to ensure General Plan compliance and will be considered by City decision-makers during the project approval process.

Therefore, the proposed project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. This impact would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact TRANS-2 Conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision(b)?

Impact Analysis
The project's land uses are consistent with those that are commonly considered locally-serving (i.e., gas station, convenience market, and car wash). Furthermore, the proposed project is less than 50,000 sf, an additional threshold that the OPR Technical Advisory uses to separate locally-serving projects from regional-serving projects. Due to this, and in accordance with the OPR Technical Advisory, the proposed project can be presumed to have a less than significant transportation impact. Therefore, the proposed project does not conflict with and is not inconsistent with CEQA Guidelines Section 15064.3, Subdivision(b), and project-related VMT will not be further analyzed. This impact would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact TRANS-3 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Impact Analysis

The proposed project does not increase hazards due to a geometric design feature or incompatible uses. Development of the project site and site access improvements requires compliance with City development guidelines and code, which follow the General Plan policies and actions that encourage the safe design of streets. The project driveways will provide access from Lone Tree Way and Vista Grande Drive (30 feet wide and 25 feet wide, respectively). Vehicles would enter and exit the project site from these locations via right-turns only.

During construction of the 270 feet long project driveway deceleration lane, traffic management plans will be implemented to ensure the safety of roadway users accessing Lone Tree Way. During construction, the proposed project would generate traffic through the transport of workers, equipment, and materials to and from the project site. The use of roadways by heavy construction equipment can increase the risk to drivers and cyclists in the vicinity of the project site; however, construction equipment and materials would be stored onsite. Therefore, there would be no substantial increase in hazards. The project will comply with the City of Antioch's Traffic Control Plan Requirements for work area traffic control for work performed in the City's right-of-way. Also, there would be no incompatible uses introduced to the project area which could cause vehicle conflicts (e.g., farm equipment). The impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact TRANS-4 Result in inadequate emergency access?

Impact Analysis

The proposed project would not result in inadequate emergency access. Development of the project site would not alter or impede emergency response routes or plans set in place by the City.

Regarding site emergency access, the project driveways are designed to comply with turning radius requirements for emergency vehicles and will not cause hazardous driving conditions. The project's detailed design will be completed in compliance with California Fire Code requirements and not impair emergency vehicle access in the vicinity of the project during construction and in ongoing operation. Compliance with the California Fire and Building Codes will be mandated through the plan check and approval process. This process will also ensure that adequate access for emergency services is provided, and the City's emergency response plan will be upheld during construction.

Some key site design requirements of the California Fire Code which will be implemented by the project to ensure adequate emergency access include provision of access roads to all facilities on-site with all-weather driving surfaces. They will be a minimum unobstructed width of 20 feet with a maximum grade of 15 percent as required by the Fire Code. Access roads shall have a minimum of 13 feet and 6 inches of vertical clearance and will not incorporate speed bumps or other vertical traffic calming devices. Access roads will be present and maintained prior to and during combustible construction. Appropriate signage and red curbs will be installed to ensure emergency access remains clear. As no non-compliant features are proposed, the impact is considered to be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

3.18 TRIBAL CULTURAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined by Public Resources Code section 21047 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

3.18.1 Environmental Setting

This section describes potential tribal cultural resources in the project site, defined as the project site and a 0.25 mile radius around the project site, and evaluates potential impacts to these resources from the construction and operation of project facilities. Under CEQA, local tribes and tribal representatives are the authority for identifying tribal cultural resources.

The Bay Area consisted of several independent tribal territories during the prehistoric and early historic periods. The Plan Bay Area 2050 Draft EIR identified six different groups of Native population that lived in the Bay Area from 5,500 BP. These six groups identified are: Ohlone (Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara, and Solano Counties), Bay Miwok (Contra Costa County), Patwin (Napa and Solano Counties), Coast Miwok (Marin and Sonoma Counties, Pono (Sonoma County), and Wappo (Napa County) (ABAG 2021). The City's General Plan EIR identified that

linguists and archaeological evidence indicates that the Bay Miwok linguistic group was driven from an area north of the Suisun Bay into eastern Contra Costa County by the intruding Patwin group. The City of Antioch was within the territory of the Bay Miwok when the Spanish arrived and began to occupy the San Francisco Bay lands in the late 1700s. The Bay Miwok were organized into groups called tribelets which constituted a sovereign nation that held a defined territory and exercised control over its resources. At the time of the Spanish arrival, an estimated 1,700 Bay Miwok were living in five tribelets in northeastern Contra Costa County (City of Antioch 2003b).

AB 52 and SB 18

AB 52 mandates consideration of Native American culture as part of the CEQA process. The goal of AB 52 is to promote involvement of California Native American tribes in the decision-making process when it comes to identifying resources of importance to their cultures and developing mitigation for impacts to these resources. To reach this goal, AB 52 establishes a formal role for tribes in the CEQA process. CEQA lead agencies are required to consult with tribes about potential tribal cultural resources in the project site, the potential significance of project impacts, the development of project alternatives, and the type of environmental document that should be prepared. AB 52 specifically States that a project that may cause a substantial adverse change in the significance of a tribal cultural resource may have a significant effect on the environment.

3.18.2 Methodology

To identify tribal cultural resources, Stantec prepared a Cultural Resources Technical Report on August 27, 2021 (Appendix C). Available literature obtained through a record search performed at the NWIC of CHRIS was consulted for background information, ethnographical information, and to identify any previously recorded archaeological tribal resources in the project site. A Stantec archaeologist performed a pedestrian survey of the project site to identify any potential archaeological cultural resources present in the project site that had not been recorded during previous studies. A search of the Sacred Lands File for tribal cultural resources in the project site did not indicate the presence of Native American cultural resources in the project site.

Refer to Section 3.5, Cultural Resources, for a detailed description of the methodology and results of AB 52 consultation used to analyze potential impacts.

3.18.3 Environmental Impact Analysis

This section discusses potential impacts on tribal cultural resources associated with the proposed project and provides mitigation measures where necessary.

Impact TRIB-1	**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 California Native American tribe, and that is:** **a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or** **b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

Impact Analysis

Tribes contacted as part of the AB 52 process did not identify tribal cultural resources within or adjacent to the project site. No known tribal cultural resources were identified in the project site or within 0.25 mile of it during the archival records search and literature review performed as part of the cultural resources inventory. A field survey of the project site did not identify any archaeological tribal resources in the project site. As discussed above, a search of the NAHC Sacred Lands File did not indicate the presence of Native American cultural resources in the project site. However, subsurface construction activities associated with the proposed project could potentially damage or destroy previously undiscovered tribal cultural resources. The proposed project would be required to implement Mitigation Measures CUL-1 and CUL-2. Mitigation Measures CUL-1 and CUL-2 are inadvertent discovery procedures that would be implemented in the event previously undiscovered subsurface cultural resources or human remains are found at the project site during construction. Therefore, with the implementation of Mitigation Measures CUL-1 and CUL-2, potential impacts to undiscovered tribal cultural resources would be less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measures CUL-1 and CUL-2 are required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

3.19 UTILITIES AND SERVICE SYSTEMS

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the 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 impacts?	☐	☐	☒	☐
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?	☐	☐	☒	☐

3.19.1 Environmental Setting

Wastewater Collection/Treatment

The City maintains and owns the local sewage collection system and is responsible for the collection and conveyance of wastewater to the Delta Diablo Wastewater Treatment Plant (WWTP). The Delta Diablo owns and operates the regional interceptors and the WWTP. Delta Diablo is located on the Pittsburg-Antioch border and serves nearly 213,000 customers in the communities of Pittsburg, Antioch and Bay Point (Delta Diablo 2021). The WWTP operates under the San Francisco Bay Regional Water Quality Control Board (Order No. R2-2014-0030, NPDES No. CA0038547), and is permitted for up to 19.5 million gallons per day (mgd) average dry weather flow (SFBRWQCB 2014). The permit expired in 2019, and tentative order No. R2-2019-XXXX NPDES No. CA0038547 is in process with the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) (SFBRWQCB 2019). In 2015, the average dry weather flow to the WWTP, including the City of Pittsburg, was 13.2 mgd (City of Antioch 2016).

Stormwater Management

Stormwater collection in the City is overseen by the Contra Costa County Flood Control and Water Conservation District (Flood Control District). The City has over 110 miles of trunk lines to collect stormwater (City of Antioch 2003b). These trunk lines are independent from the wastewater collection system. The stormwater trunk lines discharge to channels owned and maintained by both the City and the Flood Control District. The Flood Control District releases stormwater from the channels to the San Joaquin River and is the holder of a NPDES permit. Contra Costa County Clean Water Program staff monitors the quality of the released water to comply with the specifications of the NPDES permit.

Water Supply

The City receives water from two sources. The City's primary source of surface water is the Sacramento-San Joaquin Delta through its own intake, or the water purchased from the Contra Costa Water District (CCWD) through the Contra Costa Canal and Los Vaqueros Reservoir (City of Antioch 2016). The water from the CCWD is treated at the City Water Treatment Plant that has a capacity of 38 mgd. There are 6 water pressure zones in the City and the project site lies within Zone III East. Zone III East encompasses much of the newer residential and commercial growth in the City (City of Antioch 2016). According to the City's 2020 UWMP, the CCWD's water supply reliability goal is to meet 100 percent of demand in normal years and at least 85 percent of demand during a drought. The single dry year supply would be same as normal year supply. During multiple dry years, the City's purchased water supplies would decrease in the 3rd dry year. In a multiple dry year scenario, the 3rd, 4th, and 5th years supply from CCWD is estimated to be reduced to 95, 90, and 85 percent of normal supply, respectively (City of Antioch 2021b).

Solid Waste

Republic Services provides solid waste collection, disposal, recycling, and yard waste services in in the City. Solid waste and recyclables from the City are taken to the Contra Costa Transfer and Recovery Station in Martinez. Solid waste is transferred from the Transfer and Recovery Station to the Keller Canyon Landfill in Pittsburg (City of Antioch 2003b). The landfill site is 1,399 acres, 244 of which comprise the actual current disposal acreage. The landfill is permitted to accept 3,500 tons of waste per day and has a total estimated permitted capacity of approximately 75 million CY (CalRecycle 2021). The remaining available disposal capacity of the existing landfill is over 55 million

CY as of 2015, which is sufficient for several decades of continued operation (Contra Costa County Department of Conservation and Development 2015).

Electric Power, Natural Gas, and Telecommunications

PG&E provides electric power and natural gas services to the City. Pacific Bell is the provider of residential and commercial telephone service in the City. Pacific Bell also provides or hosts a variety of telecommunication services such as Digital Subscriber Lines, Internet Service Providers, web hosting, virtual private networking, and wireless/cellular and paging services (City of Antioch 2003b).

3.19.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the General Plan, the General Plan EIR, 2015 UWMP, and Section 2.0, Project Description, of this ISMND. The following impact discussions consider the impacts of the proposed project related to utilities and service systems in the City.

3.19.3 Environmental Impact Analysis

This section discusses potential impacts related to utilities and service systems associated with the proposed project and provides mitigation measures where necessary.

Impact UTIL-1	**Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?**

Impact Analysis

Wastewater Treatment

The anticipated wastewater generated by the proposed project is 1,894 gallons per day. The wastewater generated by the proposed project would flow to the proposed 6 inch sewer lateral to service the project site and would connect to the existing 36 inch public sanitary sewer main line located at the intersection of Lone Tree Way and Vista Grande Drive.

An increase of 1,984 gpd would represent a fraction of the WWTP capacity and would allow the facility to operate at its current flow rate of 13.2 mgd. The WWTP has a dry

weather permitted capacity of 16.5 mgd with an ultimate capacity of 22.7 mgd (City of Antioch 2016). Since the WWTP is operating below its maximum capacity, the project would not result in the WWTP's existing wastewater treatment requirements. Additionally, the project applicant would be required to pay sewer connection fees, which work to fund needed sewer system improvements. Because the project applicant would pay sewer connection fees, and adequate long-term wastewater treatment capacity is available to serve full build-out of the project, the project would not require or result in the relocation or construction of new or expanded off-site wastewater facilities, the construction or relocation of which could cause significant environmental effects. Therefore, impacts to wastewater treatment requirements would be less than significant.

Water Treatment

The proposed project would connect new 2 inch domestic water service line and 1 inch irrigation water service line that would serve the project site to the existing 12 inch water main located along Vista Grande Drive. The proposed project would result in an overall demand of approximately 2,461 gpd, or approximately 898,265 gallons per year. Although the proposed project is not specifically identified in the City's 2020 UWMP, the City's growth projections and water demand projections accommodate the proposed project's projected water demand of 2,461 gpd. Therefore, the proposed project would not require or result in the relocation or construction of new or expanded off-site water facilities, the construction or relocation of which could cause significant environmental effects, and sufficient water supplies would be available to serve the proposed project and reasonably foreseeable future development during normal, dry, and multiple dry years. Per the City's 2020 UWMP, adequate water supplies will be available to accommodate buildout of the City under normal year, single year, and multiple-dry year demand scenarios, accounting for mandatory measures included in the City's Water Shortage Contingency Plan (City of Antioch 2021b). Therefore, the proposed project would not require or result in the relocation or construction of new or expanded off-site water facilities, the construction or relocation of which could cause significant environmental effects, and sufficient water supplies would be available to serve the proposed project and reasonably foreseeable future development during normal, dry, and multiple dry years.

Stormwater Drainage

The proposed project would include installation of new 18 inch and 24 inch storm drains and storm drain outfall. The storm drains would connect to the bioretention basin and existing 48 inch and 36 inch storm drain pipes along the western perimeter of the

proposed project. Upon project completion, the project site would have 53,342 sf of impervious surface. It would also include 41,933 sf of pervious surface consisting of landscaping throughout and around the perimeter of the project site and bioretention areas along the northern and eastern perimeter of the project site. The bioretention facilities would be integrated with the site layout to treat runoff, and infiltrate some runoff, before discharge to the municipal storm drain. The proposed project would not require new or expanded off-site stormwater infrastructure. Therefore, the impacts associated with stormwater drainage facilities would be less than significant.

Electric Power and Natural Gas

PG&E is the electric and natural gas provider to the City. The proposed project would demand additional electricity and natural gas, and the proposed project anticipated to connect to existing dry utility services located at the back of the sidewalk near the intersection curb ramp. Although the proposed project would demand additional electricity and natural gas, the 2017 General Plan Update found that buildout of the General Plan would not exceed the demand for electricity and natural gas estimated in the 2003 General Plan (City of Antioch 2017). Furthermore, the proposed project and future development would be subject to more stringent energy efficiency standards through updates of the California Green Building Code and Title 24. No new expanded facilities would be required for electric and natural gas facilities that could potentially cause a significant environmental impact.

Telecommunications

Telecommunication services are provided by Pacific Bell to the project site. Any telecommunication connections that are deemed necessary during final site design would be placed within existing utility easements. No expanded capacity would be required for telecommunication facilities that could potentially cause a significant environmental impact. Therefore, impacts to telecommunications facilities would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact UTIL-2 Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Impact Analysis

The proposed project would demand approximately 2,461 gpd of water. The 2020 UWMP calculates the City's past, current, and projected water use and water supply through 2045. According to the 2020 UWMP, the future water supply would be adequate to offset future water demands from planned development during normal, single-dry, and multi-dry years through 2045 (City of Antioch 2021b). The UWMP contemplated the build out of the uses and densities that were envisioned in the General Plan and, thus, a project-specific water supply analysis is not required. Additionally, the proposed project would be required to comply with the water conservation requirements codified in Title 6, Chapter 10 of the Municipal Code (City of Antioch 2015). Therefore, the impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact UTIL-3 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?

Impact Analysis

The Delta Diablo WWTP has a permitted treatment capacity of 19.5 mgd (SFBRWQCB 2014). The average volume of wastewater treated at the WWTP was 13.2 mgd in 2015 and is expected to stay similar considering the limited growth within the WWTP service area since 2015 (City of Antioch 2016). The proposed project would generate 1,894 gpd of wastewater that would be a fraction of the available capacity of 6 mgd. In addition, the project applicant would pay sewer connection fees. Therefore, the impact would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact UTIL-4 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?

Impact Analysis
The proposed project would be expected to generate waste during the construction and operation phases; however, it would not be expected to result in inadequate landfill capacity. The proposed project would involve demolition of structures. Any construction waste generated would be disposed by the project contractor in accordance with the City's established programs that facilitate the diversion and disposal of construction waste. The City uses a standard multiplier of 20 pounds of solid waste per day for each employee (City of Antioch 2003b). The proposed project is anticipated to employ 12 to 15 employees. Therefore, during operation the project would be anticipated to use approximately 300 pounds per day, or 55 tons per year if the proposed project were to employ 15 employees. Solid waste from the proposed project would be disposed at the Keller Canyon Landfill. The landfill is permitted to accept 3,500 tons of waste per day and has a remaining capacity of 55 million CY (Contra Costa County Department of Conservation and Development 2015). Due to the substantial amount of available capacity remaining at Keller Canyon Landfill, sufficient capacity would be available to accommodate the proposed project's solid waste disposal needs. The proposed project would also include solid waste, food waste, and recycling facilities at a readily available location. The proposed project would not be expected to generate solid waste in excess of State or local standards and would not impair attainment of solid waste reduction goals. Therefore, a less than significant impact related to solid waste would occur.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact UTIL-5 Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?

Impact Analysis
The proposed project would be served by curbside solid waste and recycling services, which are standard services for residential uses in the City. Solid waste disposal must follow the requirements of the contracted waste hauler and disposal facility, which follows local, State, and federal statutes and regulations related to the collection and disposal of solid waste.

The proposed project would include solid waste, food waste, and recycling facilities at a readily available location. Title 6, Chapter 3 of the City's Municipal Code also requires the construction contractor to prepare and submit a Waste Management Plan (WMP). The WMP shall identify the types of construction and demolition debris materials that will be generated for disposal and recycling. The proposed project would comply with all applicable local, State, and federal statutes and regulations related to solid waste. Therefore, the impacts would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

3.20 WILDFIRE

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near State responsibility areas 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?	☐	☐	☐	☒

3.20.1 Environmental Setting

In the City, areas of potential wildland fire hazard exist within the southern, mostly unincorporated portions of the General Plan study area, including rural, hilly terrain, as well as areas adjacent to or covered by natural grassland or brush (City of Antioch 2003b). The project site is vacant and surrounded by existing residential developments and roadways. Based on a review of the Fire Hazard Severity Zone maps developed by CALFIRE, the project site is not within a State responsibility area and does not contain lands classified as very high fire hazard severity zone (CALFIRE 2007b). The project site is within a local responsibility area and is classified as being in a moderate fire hazard severity zone (CALFIRE 2007a). The USFS has also developed a Wildfire Hazard Potential Map. According to the USFS, the project site is classified as non-burnable (USFS 2020).

3.20.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the General Plan, General Plan EIR, and review of CALFIRE's Fire Hazard Severity Zone Maps and the USFS Wildfire Hazard Potential Map.

3.20.3 Environmental Impact Analysis

This section discusses potential wildfire impacts on the proposed project and provides mitigation measures where necessary.

Impact WF-1 Substantially impair an adopted emergency response plan or emergency evacuation plan?

Impact Analysis
The project site is not in a State responsibility area and does not contain lands classified as being within a very high fire hazard severity zone (CALFIRE 2007b). The proposed project's construction would require partial street closures for utility infrastructure and offsite improvements; however, the proposed project would implement a Traffic Control Plan to ensure it does not affect emergency service access to the areas surrounding the project site. There are no identified evacuation routes that would be potentially impacted by the construction of the project. The Traffic Control Plan would identify all detours, appropriate traffic controls, and ensure adequate circulation and emergency access are provided during the construction phase. Therefore, project construction and operation activities would not interfere with an emergency evacuation or response plan, and this impact would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact WF-2	**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?**

Impact Analysis
The topography of the project site is mostly flat and is located in an urban area surrounded by existing development and roadways. The area surrounding the project site is similarly flat. The project site is not in a State responsibility area and does not contain lands classified as being within a very high fire hazard severity zone (CALFIRE 2007b). Furthermore, the project site is designated as non-burnable and does not have a high risk of wildfires (USFS 2020). Given the characteristics of the project site, the proposed project would not exacerbate fire risk beyond what currently exists in the vicinity of the project site. Development of the proposed project would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire, and there would be no impact.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

Impact WF-3	**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?**

Impact Analysis
The project site is not in a State responsibility area and does not contain lands classified as being within a very high fire hazard severity zone (CALFIRE 2007b). Construction of the proposed project would require the installation and maintenance of associated infrastructure. All utilities needed for the new development would be located underground and also includes installation of fire hydrants on the project site to mitigate fire hazards. The proposed project would be required to implement General Plan policies which along with the implementation of the Uniform Fire Code and the Uniform

Building Code which would reduce effects of development on wildland fire hazard impacts to a less than significant level (City of Antioch 2003b). The proposed project would require the installation of associated infrastructure to support the new development but would not exacerbate fire risk beyond what currently exists in the vicinity of the project site. Compliance with City's policies, the Uniform Fire Code and the Uniform Building Code would reduce effects of installation of associated infrastructures that may exacerbate fire risk and there would be a less than significant impact.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact WF-4	**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?**

Impact Analysis
The project site is not in a State responsibility area and does not contain lands classified as being within a very high fire hazard severity zone (CALFIRE 2007b). The project site and surrounding area is relatively flat and not in an area subject to landslides or flooding. As such, 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. As such, there would be no impact.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b)	Does the project have impacts that are individually limited, but cumulative considerable? ("Cumulative considerable" means that the incremental impacts of a project are considerable when viewed in connection with the impacts of past projects, the impacts of other current projects, and the effects of probable future Projects)?	☐	☒	☐	☐
c)	Does the project have environmental impacts which will cause substantial adverse impacts on human beings, either directly or indirectly?	☐	☒	☐	☐

Impact MFS-1 Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Impact Analysis

As evaluated in this ISMND, the proposed project would not substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory. As discussed in Section 3.4, Biological Resources, and Section 3.5, Cultural Resources, Mitigation Measures BIO-1, BIO-2, BIO-3, and Mitigation Measures CUL-1, and CUL-2, have been included herein to

reduce the significance of potential impacts to special-status species and habitats, and inadvertent discovery of cultural and tribal cultural resources to a less than significant level.

Impact MFS-2	**Does the project have impacts that are individually limited, but cumulative considerable? ("Cumulative considerable" means that the incremental impacts of a project are considerable when viewed in connection with the effects of past projects, the impacts of other current projects, and the impacts of probable future projects)?**

Impact Analysis

As described in the impact analysis in Sections 3.1 through 3.20 of this ISMND, any potentially significant impacts of the proposed project would be reduced to a less than significant level following incorporation of the mitigation measures listed herein. Projects completed in the past have also implemented mitigation as necessary. Future projects would similarly be required to mitigate potential impacts. Accordingly, the proposed project would not otherwise combine with impacts of related development to add considerably to any cumulative impacts in the region, and impacts would be considered less than significant.

Impact MFS-3	**Does the project have environmental impacts which will cause substantial adverse impacts on human beings, either directly or indirectly?**

Impact Analysis

The proposed project would not directly or indirectly cause substantial adverse effects on human beings. Air quality, greenhouse gases, hazardous materials, and/or noise are resources that could cause potential effects through which the project could have a substantial effect on human beings. However, all potential effects of the proposed project related to air quality, greenhouse gases, hazardous materials, and noise are identified as less than significant or less than significant with the implementation of mitigation. All other resource areas would either have no impact, less than significant impact, or less than significant impact with mitigation incorporated. Therefore, the proposed project would not have environmental impacts which would cause substantial adverse impacts on human beings.

4.0 REFERENCES

Antioch Unified School District (AUSD). 2021. Antioch Unified School District School Locator. https://betalocator.decisioninsite.com/?studyID=85002. Accessed July 2021.

Association of Bay Area Governments (ABAG). 2021. Plan Bay Area 2050 Draft Program Environmental Impact Report. https://www.planbayarea.org/sites/default/files/documents/2021-06/PBA_2050_DEIR.pdf. Accessed October 2021.

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, eds. 2012. The Jepson Manual: Vascular Plants of California. 2nd edition. University of California Press. Berkeley, California.

Calflora. 2021. Information on wild California plants. https://www.calflora.org//. Accessed June 2021.

California Department of Conservation (DOC). 1982. California Department of Conservation Mineral Land Classification map of Aggregate Resources, Antioch South Quadrangle. PDF. Accessed July 2021.

_____. 2016. Farmland Mapping and Monitoring Program Important Farmland Mapper. https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed July 2021.

_____. 2021. EQ Zapp: California Earthquake Zones of Required Investigation. https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed July 2021.

California Department of Education. 2021. 2019-2020 Enrollment by Grade: Antioch Unified Report. https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdLevels.aspx?cds=0761648&agglevel=district&year=2019-20. Accessed July 2021.

California Department of Finance. 2020a. E-4 Population Estimates for Cities, Counties, and the State, 2011-2020 with 2010 Census Benchmark. https://www.dof.ca.gov/Forecasting/Demographics/Estimates/e-4/2010-20/. Accessed July 2021.

_____. 2020b. E-1 Population Estimates for Cities, Counties, and the State — January 1, 2019 and 2020. https://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/. Accessed July 2021.

California Department of Fish and Wildlife (CDFW). 2014. California Wildlife Habitat Relationships (CWHR), Version 9.0 (personal computer program). California

Department of Fish and Wildlife, California Interagency Wildlife Task Group. https://www.wildlife.ca.gov/data/cwhr. Accessed July 2021.

_____. 2021a. Rarefind 5. California Natural Diversity Database (CNDDB). California Natural Communities List. Biogeographic Data Branch, California Department of Fish and Wildlife. https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Dat. Accessed June 2021.

_____. 2021b. Special Animals List. CDFW, CNDDB. Periodic Publication. 66 pp. Updated July 2021. https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals. Accessed June 2021.

_____. 2021c. State and Federally Listed Endangered and Threatened Animals of California. CDFW, Biogeographic Data Branch, CNDDB. Updated July 2021. https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals. Accessed July 2021.

_____. 2021d. State and Federally Listed Endangered, Threatened and Rare Plants of California. California Department of Fish and Wildlife, Biogeographic Data Branch, CNDDB. Updated July 2021. https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals. Accessed July 2021.

_____. 2021e. Special Vascular Plants, Bryophytes, and Lichens List. CDFW, CNDDB. Periodic Publication. 127 pp. Updated July 2021. https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals. Accessed July 2021.

_____. 2021f. California Natural Communities List. Biogeographic Data Branch, California Department of Fish and Wildlife. Updated September 2020. https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities. Accessed July 2021.

California Department of Forestry and Fire Protection (CALFIRE). 2007a. Fire Hazard Severity Zones in LRA. PDF. Accessed July 2021.

_____. 2007b. Fire Hazard Severity Zones in State Responsibility Areas. PDF. Accessed July 2021.

California Department of Toxic Substances Control (DTSC). 2021. https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=antioch%2C+ca. Accessed July 2021.

California Department of Water Resources (DWR). 2015. Division of Safety of Dams (DSOD) California Dam Breach Inundation Maps. https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2. Accessed July 2021.

California Department of Resources Recycling and Recovery (CalRecycle). 2021. SWIS Facility/Site Activity Details; Keller Canyon Landfill (07-AA-0032). https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/4407?siteID=228. Accessed July 2021.

California Department of Transportation (Caltrans). 2021. California State Scenic Highway System Map. https://www.arcgis.com/apps/webappviewer/index.html?id=2e921695c43643b1aaf7000dfcc19983. Accessed July 2021.

California Invasive Species Council (Cal-IPC). 2021. California Invasive Plant Inventory. Cal-IPC Inventory Online. Cal-IPC: Berkeley, CA. https://www.cal-ipc.org/plants/inventory/. Accessed July 2021.

California Native Plant Society (CNPS). 2021. Inventory of Rare And Endangered Plants (Online Edition, V8-02). Sacramento, California. http://www.rareplants.cnps.org. Accessed June 2021.

City of Antioch. 2003a. City of Antioch General Plan. https://www.antiochca.gov/fc/community-development/planning/Antioch_Adopted_General_Plan.pdf. Accessed July 2021.

_____. 2003b. Antioch General Plan Update EIR. https://www.antiochca.gov/fc/community-development/planning/Draft-General-Plan-EIR.pdf. Accessed July 2021.

_____. 2015. City of Antioch Housing Element 2015-2023. https://www.antiochca.gov/fc/community-development/planning/2015-2023-housing-element.pdf. Accessed July 2021.

_____. 2016. City of Antioch 2015 Urban Water Management Plan. https://www.antiochca.gov/fc/environment/UWMP-2015.pdf. Accessed July 2021.

_____. 2017. Citywide General Plan Land Use Element Update. https://www.antiochca.gov/community-development-department/planning-division/environmental-documents/. Accessed July 2021.

_____. 2020. City of Antioch, California Code of Ordinances. https://codelibrary.amlegal.com/codes/antioch/latest/antioch_ca/0-0-0-18579. Accessed July 2021.

_____. 2021a. City of Antioch – About APD. https://www.antiochca.gov/police/about-apd/. Accessed July 2021.

_____. 2021b. Draft 2020 Urban Water Management Plan. https://www.antiochca.gov/fc/environment/UWMP.pdf. Accessed July 2021.

Contra Costa County. 2005. Contra Costa County General Plan. Chapter 8: Conservation Elements. https://www.contracosta.ca.gov/DocumentCenter/View/30918/Ch8-Conservation-Element?bidId=. Accessed July 2021.

_____. 2016. Map of Properties Under Contract – 2016 Agricultural Preserves Map. https://www.contracosta.ca.gov/DocumentCenter/View/882/Map-of-Properties-Under-Contract?bidId=. Accessed July 2021.

_____. 2021. Fire Protection Districts. https://www.contracosta.ca.gov/1550/Fire-Protection-Districts. Accessed July 2021.

Contra Costa County Department of Conservation and Development. 2015. Notice of Preparation and Public Scoping Meeting; Subject: Supplemental Environmental Impact Report to Amend Land Use Permit 2020-89 for Keller Canyon Landfill. https://www.contracosta.ca.gov/DocumentCenter/View/38360/Keller-Canyon-Landfill-SEIR---Notice-of-Preparation-and-Scoping-Meeting-102015?bidId=. Accessed July 2021.

Contra Costa County Fire Protection District (CCCFPD). 2018. Contra Costa County Fire Protection District Annual Report 2018. https://www.cccfpd.org/2018-Annual-Report. Accessed July 2021.

Delta Diablo. 2021. Delta Diablo Homepage. https://www.deltadiablo.org/. Accessed July 2021.

East Contra Costa County Integrated Regional Water Management (East Contra Costa IRWM). 2021. Sustainable Groundwater Management. https://www.eccc-irwm.org/about-sgma. Accessed October 2021.

East County Today. 2019. “Antioch Police Chief Reports Part 1 Crime Down 11.5%.” https://eastcountytoday.net/antioch-police-chief-reports-part-1-crime-down-11-5/. Accessed July 2021

Federal Emergency Management Agency (FEMA). 2021. FEMA Flood Map Service Center. https://msc.fema.gov/portal/search. Accessed July 2021.

Mayer, K.E., and W.F. Laudenslayer, Jr., eds. 1988. A Guide to Wildlife Habitats Of California. Sacramento: California Department of Forestry and Fire Protection (CAL FIRE).

National Oceanic and Atmospheric Administration (NOAA) Regional Climate Centers. 2021. AgACIS Climate Data for Antioch Pumping Plant #3. Applied Climate Information System WETs Table. http://agacis.rcc-acis.org/?fips=06013. Accessed July 2021.

Salem Engineering Group, Inc. 2019. Geophysical Site Investigation. PDF. Accessed July 2021.

San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2014. Order No. R2-2014-0030; NPDES No. CA0038547. https://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2014/R2-2014-0030.pdf. Accessed July 2021.

_____. 2019. Tentative Order No. R2-2019-XXXX; NPDES No. CA0038547. https://www.waterboards.ca.gov/sanfranciscobay/board_info/agendas/2019/December/DeltaDiablo/Tentative%20Order%20-%20NPDES%20No.%20CA0038547%20Permit%20Reissuance.pdf. Accessed July 2021.

Sawyer, J. O., T. Keeler-Wolf, and J. M. Evans. 2009. A Manual of California Vegetation, 2nd Edition. CNPS, Sacramento, California.

Spencer, W.D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration. https://www.wildlife.ca.gov/Conservation/Planning/Connectivity/CEHC. Accessed July 6, 2021.

State Water Resources Control Board. (SWRCB). 2021. GeoTracker. https://geotracker.waterboards.ca.gov/map/?global_id=SL0601346154. Accessed July 2021.

Tri Delta Transit. 2021. Schedules and Maps. https://trideltatransit.com/local_bus.aspx. Accessed October 2021.

United States Department of Agriculture (USDA). 2017. Rincon Series. https://soilseries.sc.egov.usda.gov/OSD_Docs/R/RINCON.html. Accessed July 2021.

_____. 2018. Capay Series. https://soilseries.sc.egov.usda.gov/OSD_Docs/C/CAPAY.html. Accessed July 2021.

_____. 2021. Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed July 2021.

United States Forest Service (USFS). 2020. Wildfire Hazard Potential Map. https://usfs.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=55226e8547f84aae8965210a9801c357. Accessed July 2021.

USFWS. 2021a. Trust Resources Report. Information for Planning and Consultation (IPaC). https://ecos.fws.gov/ipac/. Accessed June 2021.

_____. 2021b. USFWS National Wetlands Inventory (NWI). https://www.fws.gov/wetlands/. Accessed June 2021.

United States Geological Survey (USGS). 2020. USGS Locate Your Watershed – Watersheds in: 18 California Region. https://water.usgs.gov/wsc/cat/18040003.html. Accessed July 2021.

_____. 2021a. Liquefaction Susceptibility. https://earthquake.usgs.gov/education/geologicmaps/liquefaction.php. Accessed July 2021.

_____. 2021b. Areas of Land Subsidence in California. https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html. Accessed July 2021.

Western Regional Climate Center. 2021. Antioch Pump Plant 3, California (040232) Period pf Record Monthly Climate Summary. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?caanti+nca. Accessed July 2021.

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