Acorn Business Park Project

Draft Initial Study Mitigated Negative Declaration

PD-18-02

February 7, 2019

Lead Agency:

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

Technical Assistance:

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

Table of Contents

ACRONYMS VI

INITIAL STUDY MITIGATED NEGATIVE DECLARATION VIII

1.0 INTRODUCTION 1.1
1.1 PROJECT TITLE 1.1
1.2 LEAD AGENCY 1.2
1.3 LEAD AGENCY CONTACT 1.2
1.4 PURPOSE AND NEED 1.2
1.5 PROJECT LOCATION 1.2
1.6 EXISTING SITE CONDITIONS 1.2
1.7 SUMMARY OF PROJECT 1.2
1.8 GENERAL PLAN DESIGNATION AND ZONING 1.2
1.9 SURROUNDING LAND USES AND SETTING 1.3
1.10 CEQA AND PUBLIC AND AGENCY REVIEW 1.3
1.11 REQUIRED PERMITS AND APPROVALS 1.4
1.12 SCOPE OF THIS INITIAL STUDY 1.4
1.13 DOCUMENT ORGANIZATION 1.5

2.0 PROJECT DESCRIPTION 2.1
2.1 PROJECT OVERVIEW 2.1
2.1.1 Vehicular Access and Parking 2.27
2.1.2 Utilities 2.28
2.1.3 Landscaping 2.28
2.2 PROJECT CONSTRUCTION 2.28
2.2.1 Schedule 2.28
2.2.2 Access and Staging 2.37
2.2.3 Construction Equipment and Workers 2.37
2.2.4 Grading 2.37
2.2.5 Lighting 2.37

3.0 ENVIRONMENTAL CHECKLIST AND ENVIRONMENTAL EVALUATION 3.1
3.1 AESTHETICS 3.3
3.1.1 Environmental Setting 3.3
3.1.2 Methodology 3.11
3.1.3 Environmental Impact Analysis 3.11
3.2 AGRICULTURE AND FORESTRY RESOURCES 3.15
3.2.1 Environmental Setting 3.15
3.2.2 Methodology 3.15
3.2.3 Environmental Impact Analysis 3.15
3.3 AIR QUALITY 3.19
3.3.1 Environmental Setting 3.19
3.3.2 Methodology 3.24
3.3.3 Environmental Impact Analysis 3.24
3.4 BIOLOGICAL RESOURCES 3.37
3.4.1 Environmental Setting 3.37
3.4.2 Methodology 3.38

3.4.3 Environmental Impact Analysis 3.40
3.5 CULTURAL RESOURCES 3.45
3.5.1 Environmental Setting 3.45
3.5.2 Methodology 3.45
3.5.3 Environmental Impact Setting 3.47
3.6 ENERGY 3.51
3.6.1 Environmental Setting 3.51
3.6.2 Methodology 3.51
3.6.3 Environmental Impact Analysis 3.55
3.7 GEOLOGY AND SOILS 3.59
3.7.1 Environmental Setting 3.59
3.7.1 Methodology 3.61
3.7.2 Environmental Impact Analysis 3.61
3.8 GREENHOUSE GASES 3.67
3.8.1 Environmental Setting 3.67
3.8.2 Thresholds 3.69
3.8.3 Methodology 3.69
3.8.4 Environmental Impact Analysis 3.69
3.9 HAZARDS AND HAZARDOUS MATERIALS 3.73
3.9.1 Environmental Setting 3.73
3.9.2 Methodology 3.74
3.9.3 Environmental Impact Analysis 3.74
3.10 HYDROLOGY AND WATER QUALITY 3.79
3.10.1 Environmental Setting 3.79
3.10.2 Methodology 3.80
3.10.3 Environmental Impact Analysis 3.80
3.11 LAND USE AND PLANNING 3.87
3.11.1 Environmental Setting 3.87
3.11.2 Methodology 3.88
3.11.3 Environmental Impact Analysis 3.88
3.12 MINERAL RESOURCES 3.91
3.12.1 Environmental Setting 3.91
3.12.2 Methodology 3.91
3.12.3 Environmental Impact Analysis 3.91
3.13 NOISE 3.93
3.13.1 Environmental Setting 3.93
3.13.1 Methodology 3.99
3.13.2 Environmental Impact Analysis 3.105
3.14 POPULATION AND HOUSING 3.115
3.14.1 Environmental Setting 3.115
3.14.2 Methodology 3.115
3.14.3 Environmental Impact Analysis 3.115
3.15 PUBLIC SERVICES 3.117
3.15.1 Environmental Setting 3.117
3.15.2 Methodology 3.118
3.15.3 Environmental Impact Analysis 3.118
3.16 RECREATION 3.121
3.16.1 Environmental Setting 3.121
3.16.2 Methodology 3.121

3.16.3 Environmental Impact Analysis 3.121
3.17 TRAFFIC AND TRANSPORTATION 3.123
3.17.1 Environmental Setting 3.123
3.17.2 Methodology 3.125
3.17.3 Environmental Impact Analysis 3.126
3.18 TRIBAL CULTURAL RESOURCES....3.133
3.18.1 Environmental Setting 3.133
3.18.2 Methodology 3.133
3.18.3 Environmental Impact Analysis 3.134
3.19 UTILITIES AND SERVICE SYSTEMS....3.136
3.19.1 Environmental Setting 3.136
3.19.2 Methodology 3.137
3.19.3 Environmental Impact Analysis 3.137
3.20 WILDFIRE....3.141
3.20.1 Environmental Setting 3.141
3.20.2 Methodology 3.141
3.20.3 Environmental Impact Analysis 3.141
3.21 MANDATORY FINDINGS OF SIGNIFICANCE....3.145

4.0 REFERENCES....4.1

5.0 LIST OF PREPARERS 5.1

LIST OF TABLES

Table 1.9-1 Surrounding Land Uses....1.3
Table 2.1-1 Land Use Area Summary 2.1
Table 2.1-2 Alternative Site Plans – Lot Sizes 2.2
Table 2.1-3 Acorn Business Park Proposed Uses – Subsection A....2.11
Table 2.1-4 Acorn Business Park Planned Development Standards: Subsection A – Commercial 2.11
Table 2.1-5 Acorn Business Park Planned Development Standards: Subsection B - Commercial 2.25
Table 2.1-6 Acorn Business Park Proposed Uses – Subsection C 2.26
Table 2.1-7 Acorn Business Park Planned Development Standards: Subsection C – Employment Center....2.26
Table 2.1-8 Parking Table 2.27
Table 3.3-1 California and National Ambient Air Quality Standards 3.20
Table 3.3-2 Contra Costa County Area Designations for State and National Ambient Air Quality....3.21
Table 3.3-3 BAAQMD Project-Level Air Quality CEQA Thresholds of Significance....3.22
Table 3.3-4 Annual Construction Emissions 3.28
Table 3.3-5 Daily Operational Emissions....3.29
Table 3.3-6 Annual Operational Emissions....3.30
Table 3.3-7 Screening Health Risk Assessment Cumulative Results....3.33
Table 3.3-8 Screening Levels for Potential Odor Sources 3.34
Table 3.6-1 Construction Off-Road Fuel Consumption 3.52
Table 3.6-2 Construction On-Road Fuel Consumption 3.53
Table 3.6-3 Long-Term Operational Vehicle Fuel Consumption 3.53
Table 3.6-4 Long-Term Electricity Usage....3.54
Table 3.6-5 Long-Term Natural Usage 3.54

Table 3.8-1 Construction Greenhouse Gas Emissions 3.70
Table 3.8-2 Operational Greenhouse Gas Emissions....3.71
Table 3.13-1 Definition of Sound Measurement....3.95
Table 3.13-2 Typical A-Weighted Sound Levels 3.96
Table 3.13-3 Guideline Vibration Annoyance Potential Criteria....3.97
Table 3.13-4 Guideline Vibration Damage Potential Criteria....3.97
Table 3.13-5 Vibration Source Levels for Select Construction Equipment 3.98
Table 3.13-6 Traffic Peak Hour Counts and Estimated Noise Increase 3.105
Table 3.13-7 Summary of Federal Highway Administration Roadway Construction Noise Model at Existing Motel Receiver....3.108
Table 3.13-8 Summary of Federal Highway Administration Roadway Construction Noise Model at Potential Future Residential Development 3.109
Table 3.13-9 Vibration Source Levels for Construction Equipment....3.112

LIST OF FIGURES

Figure 2.0-1 Regional Location Map....2.3
Figure 2.0-2 Local Vicinity Map....2.5
Figure 2.0-3 Overall Site Plan....2.7
Figure 2.0-4 Tentative Map....2.9
Figure 2.0-5 Subsection A Site Plan – Alternative A-1 ....2.13
Figure 2.0-6 Subsection A Site Plan – Alternative A-2 ....2.15
Figure 2.0-7 Subsection B Site Plan – Alternative B-1 ....2.17
Figure 2.0-8 Subsection B Site Plan – Alternative B-2 ....2.19
Figure 2.0-9 Subsection C Site Plan – Alternative C-1....2.21
Figure 2.0-10 Subsection C Site Plan – Alternative C-2....2.23
Figure 2.0-11a Preliminary Utility Plan....2.29
Figure 2.0-11b Preliminary Utility Plan....2.29
Figure 2.0-12a Overall Landscaping Plan....2.33
Figure 2.0-12b Planting Details....2.33
Figure 3.1-1 Photograph Locations....3.5
Figure 3.1-2 Representative Photographs 3.7
Figure 3.1-3 Representative Photographs 3.9
Figure 3.13-1 Project Site and Neighboring Noise-Sensitive Receivers 3.101
Figure 3.13-2 Contra Costa County Noise Element Antioch North Noise Contours....3.103

LIST OF APPENDICES

APPENDIX A AIR QUALITY AND GREENHOUSE GAS ASSUMPTIONS AND CALEEMOD RESULTS....A-1

APPENDIX B BIOLOGICAL RESOURCES....B-1

APPENDIX C CULTURAL RESOURCES....C-1

APPENDIX D STORMWATER CONTROL PLAN....D-1

APPENDIX E NOISE MODELING RESULTS....E-1

APPENDIX F EMPLOYMENT ESTIMATES....F-1

APPENDIX G TRAFFIC IMPACT ANALYSIS....G-1

Acronyms

AB	Assembly Bill
APD	Antioch Police Department
AQP	air quality plan
ATCM	air toxic control measures
BAAQMD	Bay Area Air Quality Management District
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
C-3	Regional Commercial
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
CH_4	Methane
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	Carbon Dioxide Equivalent
CRHR	California Register of Historical Resources
dB	Decibel
dBA	A-weighted decibels
DDSD	Delta Diablo Sanitation District
DOC	California Department of Conservation
DPM	diesel particulate matter
DPR	Department of Parks and Recreation
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
FAR	Floor Area Ratio
FCAA	Federal Clean Air Act
FEMA	Flood Emergency Management Agency
FHWA	Federal Highway Administration
Flood Control District	Contra Costa County Flood Control and Water Conservation District
GHG	greenhouse gases
HCP	Habitat Conservation Plan
ISMND	Initial Study Mitigated Negative Declaration
Ldn	day-night sound level
Leq	equivalent sound level
Lmax	maximum sound levels
MBTA	Migratory Bird Treaty Act

mgd	million gallons per day
MLD	most likely descendant
$MMTCO_2e$	Million Metric Tons Carbon Dioxide Equivalents
$MTCO_2e$	Metric Tons Carbon Dioxide Equivalents
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NETR	Nationwide Environmental Title Research
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
PBC	Planned Business Center
PG&E	Pacific Gas and Electric Company
PM_{10}	Particulate Matter 10 microns in size or smaller
$PM_{2.5}$	Particulate Matter 2.5 microns in size or smaller
PPV	peak particle velocity
PRC	Public Resources Code
RCNM	Roadway Construction Noise Model
ROG	reactive organic gases
SIP	State Implementation Plan
SP	service population
SR	State Route
SVP	Society of Vertebrate Paleontology
SWRCB	State Water Resource Control Board
SWPPP	stormwater pollution prevention plan
TACs	Toxic Air Contaminants
TCP	traffic control plan
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UWMP	Urban Water Management Plan
WWTP	Delta Diablo Wastewater Treatment Plant (WWTP).

INITIAL STUDY MITIGATED NEGATIVE DECLARATION

Project Title:

Acorn Business Park Project

Project Description:

The Acorn Business Park Project would allow for the development of a business park divided into three subsections (A, B, and C), which could include a range of uses including, hotel, commercial/retail, office, and self-storage facilities. The applicant is proposing to construct the self-storage facility on Subsection B upon approval of the proposed project by the City. The applicant is seeking entitlements for Subsections A and C but will seek to market Subsections A and C for future construction by a separate developer(s).

Project Location:

The project site is located 0.15 mile west of State Route 160 at the northwest corner of East 18th Street and Drive-In Way in the City of Antioch, California.

Name of Lead Agency:
City of Antioch
Community Development Department - Planning Division
200 H Street
Antioch, CA 94509

Lead Agency Contact Information:
Alexis Morris, Planning Manager
Phone: (925) 779-7035
Email: amorris@ci.antioch.ca.us

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 94509, Monday through Friday 8:00-5:00, and online by searching the project name at:
https://www.antiochca.gov/community-development-department/planning-division/environmental-documents/

By:  Date: 2/6/19

Alexis Morris, Planning Manager

This page left intentionally blank.

1.0 INTRODUCTION

JMI Properties Corporation (applicant) is seeking entitlements to allow for the development of the Acorn Business Park Project (proposed project) in the City of Antioch, California. The business park could include a range of uses such as hotel, commercial/retail, office, and self-storage facilities. The 19.75-acre project site is currently undeveloped and comprised of Assessor Parcel Numbers 051-052-112 and 051-052-113. The project site would be divided into three subsections as briefly described below. A detailed project description is provided in Section 2.0, Project Description, of this document.

Subsection A

Subsection A consists of two lots (3.79 acres total) in the southern portion of the project site adjacent to East 18th Street. The proposed project includes two alternative conceptual alternative site plans for this portion of the project site. Alternative A-1 would develop two commercial buildings of 16,800 square feet each with associated parking. Alternative A-2 would develop a 4-story, 95-room hotel of approximately 43,195 square feet and an 11,088-square-foot commercial building with associated parking.

The applicant is only seeking entitlements at this stage and will seek to market Subsection A for future construction by a separate developer.

Subsection B

Subsection B consists of one lot (5.44 acres) in the central portion of the project site approximately 270 feet from East 18th Street. The applicant would develop this portion of the project site with 122,021 square feet of self-storage facilities between eight separate buildings with associated parking. The applicant is considering developing rooftop solar on top of the self-storage buildings when the economics are feasible. In the near-term, the proposed project would develop a 30 kilowatt (kW) facility to offset the electrical load of the self-storage facility.

Subsection C

Subsection C consists of nine lots (10.52 acres total) in the northern portion of the project site adjacent to Sakurai Street and approximately 535 feet from East 18th Street. The proposed project also includes two alternative conceptual site plans for this portion of the project site. Alternative C-1 would develop eight buildings of 14,112 square feet each for a total of 112,896 square feet, associated parking, and a bioretention basin. Alternative C-2 would develop a bioretention basin and one building of 71,880 square feet and associated parking.

The applicant is only seeking entitlements at this stage and will seek to market Subsection C for future construction by a separate developer.

1.1 PROJECT TITLE

Acorn Business Park Project

1.2 LEAD AGENCY

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

1.3 LEAD AGENCY CONTACT

Alexis Morris, Planning Manager
Phone: (925) 779-7035
Email: amorris@ci.antioch.ca.us

1.4 PURPOSE AND NEED

The purpose of the proposed project is to allow for a planned use development consisting of a business park according to development standards established for the project on 19.75 acres at the northwest corner of East 18th Street and Drive-In Way in the City of Antioch, California (project site). 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 of Antioch (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 project site is located 0.15 mile west of State Route 160 (SR-160) at the northwest corner of East 18th Street and Drive-In Way in the City of Antioch, California.

1.6 EXISTING SITE CONDITIONS

The project site is currently undeveloped land with some weedy, non-native vegetation present onsite. The project site is frequently used by local residents for recreational dirt bike motorcycling.

1.7 SUMMARY OF PROJECT

The proposed project is seeking entitlements for the development of three distinct areas of the project site. Subsections A, B, and C allow for the development of a business park according to defined development standards (further described in Section 2.0 Project Description of this document), which could include a range of uses including hotel, commercial/retail, office, and self-storage facilities in the City.

1.8 GENERAL PLAN DESIGNATION AND ZONING

According to Antioch's 2003 General Plan, the project site is in the Eastern Waterfront Employment Focus Area. This Focus Area encompasses the industrial areas in the northeastern portion of the City and its General Plan study area,

south of the San Joaquin River, west of SR-160. The primary function of this area is to provide employment opportunities and to assist the City in achieving its goal of a balance between local housing and employment.

The project site has a general plan designation of Regional Commercial and Eastern Employment Business Park. The project site is zoned as Planned Business Center (PBC) and Regional Commercial (C-3). Based on the zoning ordinance, the Planned Business Center zoning district is "intended for office centers, research and development facilities, limited industrial activities, limited warehouse type retail and commercial activities, and small-scale warehousing distribution. Individual business centers would have a common architectural and landscape treatment, while architectural variation is encouraged between centers."

The intent of the Regional Commercial zoning district is "for retail and service commercial uses of a regional nature, including those in and adjacent to large centers with one or more full-time department stores. This district also provides for highway or travel-oriented functions along freeways, major thoroughfares, and major roadways."

1.9 SURROUNDING LAND USES AND SETTING

The surrounding area consists of residential, commercial, and major roadways.

Table 1.9-1 Surrounding Land Uses

Direction	Land Use	General Plan Designation	Zoning Designation
North	Commercial (Markstein Sales Company)	Business Park	Planned Business Center
South	Commercial and Residential	Business Park, High Density Residential and Medium Low Density Residential	Planned Business Center and Planned Development
East	Commercial (Kmart, Burger King, 7-11, and Valero gas station and car wash)	Regional Commercial	Regional Commercial (C-3)
West	Commercial (Autobody Shop/ Service Center) and Vineyards	Regional Commercial	Regional Commercial (C-3), Open Space, and Planned Business Center

Source: Antioch 2003 General Plan

1.10 CEQA AND PUBLIC AND 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. 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 is subject to compliance with CEQA. The City has directed the preparation of an analysis to comply with CEQA.

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 14, 2019 and end on March 15, 2019, 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 15, 2019. Written comments should be addressed to:

Alexis Morris, Planning Manager
200 H Street
Antioch, CA 94509
Phone: (925) 779-7035
Email: amorris@ci.antioch.ca.us

The ISMND and supporting documents are available at the City of Antioch, Community Development Department, located at 200 H Street Antioch, CA 94509, Monday through Friday 8:00-5:00, and online at: https://www.antiochca.gov/community-development-department/planning-division/environmental-documents/

1.11 REQUIRED PERMITS AND APPROVALS

This ISMND would be used by the City as the Lead Agency to evaluate the potential environmental impacts of the proposed project. For the proposed project to be implemented, a series of actions and approvals would be required from multiple agencies. Anticipated project approvals/actions would include, but are not limited to, the following:

- Rezone to Planned Development District (PD): City of Antioch
- Use Permit: City of Antioch
- Design Review: City of Antioch
- Vesting Tentative Map: City of Antioch
- Adoption of the Mitigated Negative Declaration: City of Antioch

Other ministerial approvals such as building permits, grading 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 at the end of each resource section. The following technical studies were conducted and/or reviewed in preparing this ISMND: air quality modeling outputs, biological resources assessment, cultural resources study, traffic impact study, and noise modeling. These studies/supporting data are included as appendices to this ISMND and referred to where appropriate throughout this document.

1.13 DOCUMENT ORGANIZATION

This Draft 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 the project objectives, and provides a detailed description of the proposed 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 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 for each topic. If impacts are determined to be potentially significant after incorporation of applicable mitigation measures, an Environmental Impact Report (EIR) would be required. For this proposed 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.

This page left intentionally blank.

2.0 PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW

The proposed project would be located at the northwest corner of East 18th Street and Drive-In Way in the City of Antioch, California (see Figure 2.0-1 and Figure 2.0-2). The project site is currently undeveloped land and comprised of Assessor Parcel Numbers 051-052-112 and 051-052-113. The proposed project would involve the development of a business park, which could include a range of uses such as, hotel, commercial/retail, office, and self-storage facilities (see Figure 2.0-3). The 19.75-acre project site would be subdivided into 12 lots from the existing two parcels (see Figure 2.0-4). Table 2.1-1 provides a summary of the of the proposed lots. Table 2.1-2 provides a summary of the potential lot sizes for the alternative site plans.

Table 2.1-1 Land Use Area Summary

Subsection	Lot Number	Proposed Zoning	General Plan/Land Use	Acres ± (Gross)	Acres ± (Net)
A	1	Planned Development	Regional Commercial District	2.48	2.48
	2	Planned Development	Regional Commercial District	1.31	1.31
B	3	Planned Development	Eastern Employment Business Park	5.44	5.44
C	4	Planned Development	Eastern Employment Business Park	1.10	1.10
	5	Planned Development	Eastern Employment Business Park	1.13	1.13
	6	Planned Development	Eastern Employment Business Park	1.22	1.22
	7	Planned Development	Eastern Employment Business Park	1.22	1.22
	8	Planned Development	Eastern Employment Business Park	1.22	1.22
	9	Planned Development	Eastern Employment Business Park	1.21	1.21
	10	Planned Development	Eastern Employment Business Park	1.18	1.18
	11	Planned Development	Eastern Employment Business Park	1.15	1.15
	A	Planned Development	Eastern Employment Business Park	1.07	1.07
	Total Project Area			**19.75**	**19.75**

Source: City of Antioch, September 2018

Table 2.1-2 Alternative Site Plans – Lot Sizes

Alternative	Lot Number	Size	
		Square Feet	Acres
A-1	1	84,608	1.94
	2	80,598	1.85
A-2	1	108,198	2.48
	2	57,008	1.31
B-1 and B-2	3	239,966	5.44
C-1	4	30,576	1.03
	5	30,576	1.03
	6	30,576	1.03
	7	30,576	1.03
	8	30,576	1.03
	9	30,576	1.03
	10	30,576	1.03
	11	30,576	1.03
	A	100,028	2.29
C-2	4	357,628	8.21
	A	100,028	2.29

The applicant is proposing to construct the self-storage facility on Subsection B upon approval of the proposed project by the City. The applicant is seeking entitlements for Subsections A and C but will seek to market Subsections A and C for future construction by a separate developer(s). The three subsections are proposed to be developed as described below:

- **Subsection A** – Subsection A of the project site consists of two alternative conceptual site plans for the two lots (Lots 1 and 2) totaling 3.79 acres. Alternative A-1 would develop two commercial buildings of 16,800 square feet each with associated parking (Figure 2.0-5). Alternative A-2 would develop a 4-story, 95-room hotel of approximately 43,195 square feet and an 11,088-square-foot commercial building with associated parking (see Figure 2.0-6).
- **Subsection B** – Subsection B of the project site would develop a 122,021-square-foot self-storage facility on 5.44 acres (Lot 3). The facility would be designed to support rooftop solar on top of the self-storage buildings when the economics are feasible. In the near-term the project would develop a 30 KW facility to offset the electrical load of the self-storage facility. (see Figure 2.0-7 and Figure 2.0-8)
- **Subsection C –** Subsection C of the project site also consists of two alternative conceptual site plans for the nine lots (Lot A and Lots 4-11) totaling 10.52 acres. Alternative C-1 would develop eight buildings of 14,112 square feet each for a total of 112,896 square feet, associated parking, and a bioretention basin (see Figure 2.0-9). Alternative C-2 would develop a bioretention basin and one large building of 71,880 square feet and associated parking (see Figure 2.0-10)

Work Location

0 3 6
Miles
1:300,000 (At original document size of 8.5x11)

Stantec

Project Location
T. 02N R.02E Section 21
USGS 7.5-minute Quadrangle:
Antioch North

Client/Project
City of Antioch
Acorn Business Park Project, Antioch, California
Initial Study/Mitigated Negative Declaration

Prepared by WDC on 2018-10-04
Technical Review by EN on 2018-10-04
Independent Review by JDM on 2018-10-04

Figure No.
2.0-1

Title
Regional Location Map

This page left intentionally blank.

Work Location

0 1,500 3,000
Feet
1:24,000 (At original document size of 8.5x11)

Project Location
T. 02N R.02E Section 21
USGS 7.5-minute Quadrangle:
Antioch North

Client/Project
City of Antioch
Acorn Business Park Project, Antioch, California
Initial Study/Mitigated Negative Declaration

Prepared by WDC on 2018-10-04
Technical Review by EN on 2018-10-04
Independent Review by JDM on 2018-10-04

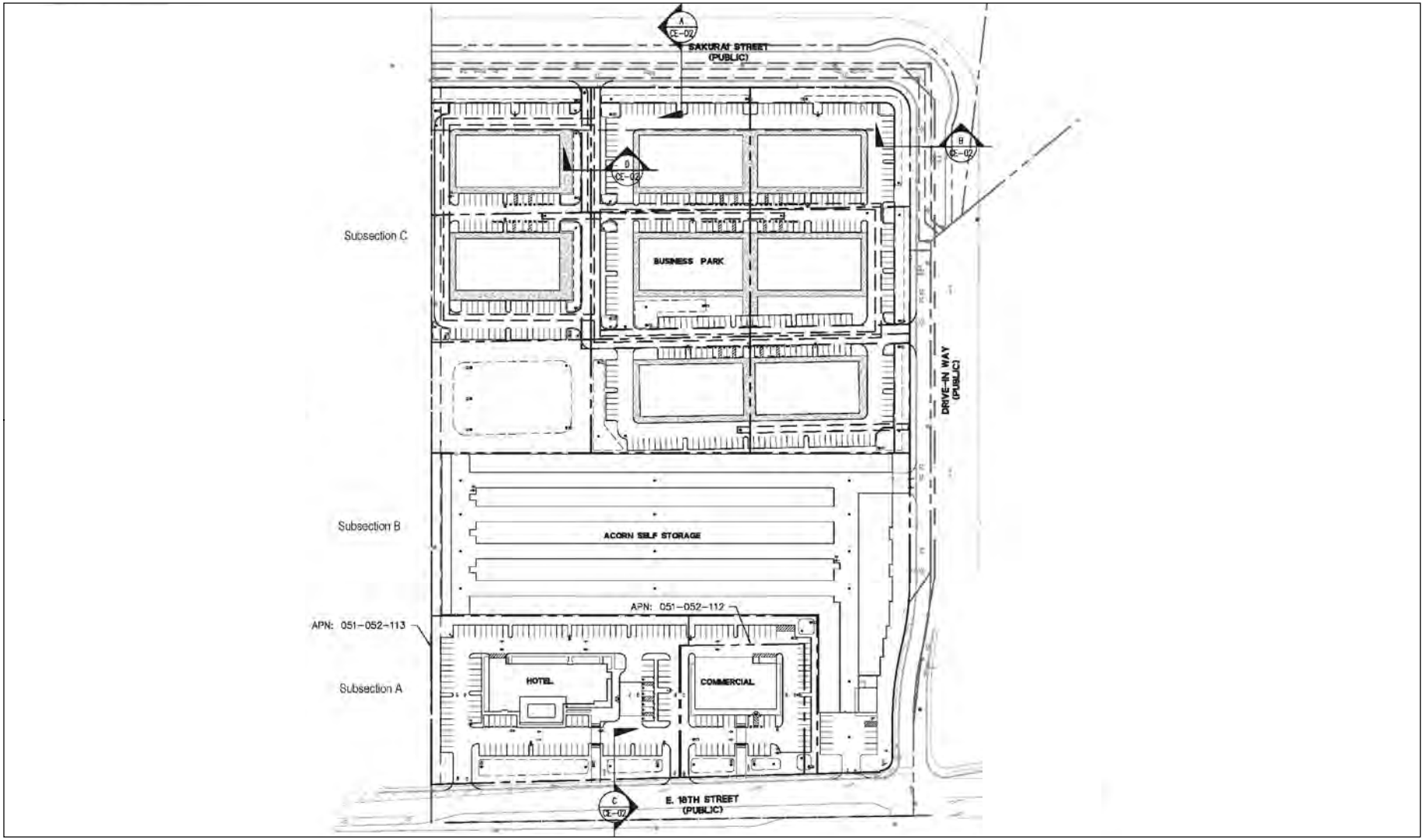
Stantec

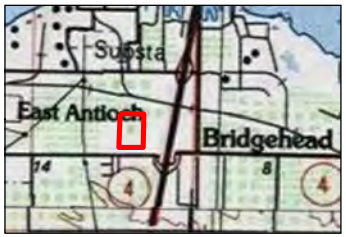
Figure No.
2.0-2

Title
Local Vicinity Map

V:\1857\Active\185704284\03_data\gis_cad\gis\mxds\Fig2_LocalVicinity.mxd Revised: 2018-10-05 By: wcampbell

This page left intentionally blank.





N

Drawing Not to Scale

Stantec

Project Location
T. 02N R.02E Section 21
USGS 7.5-minute Quadrangle:
Antioch North

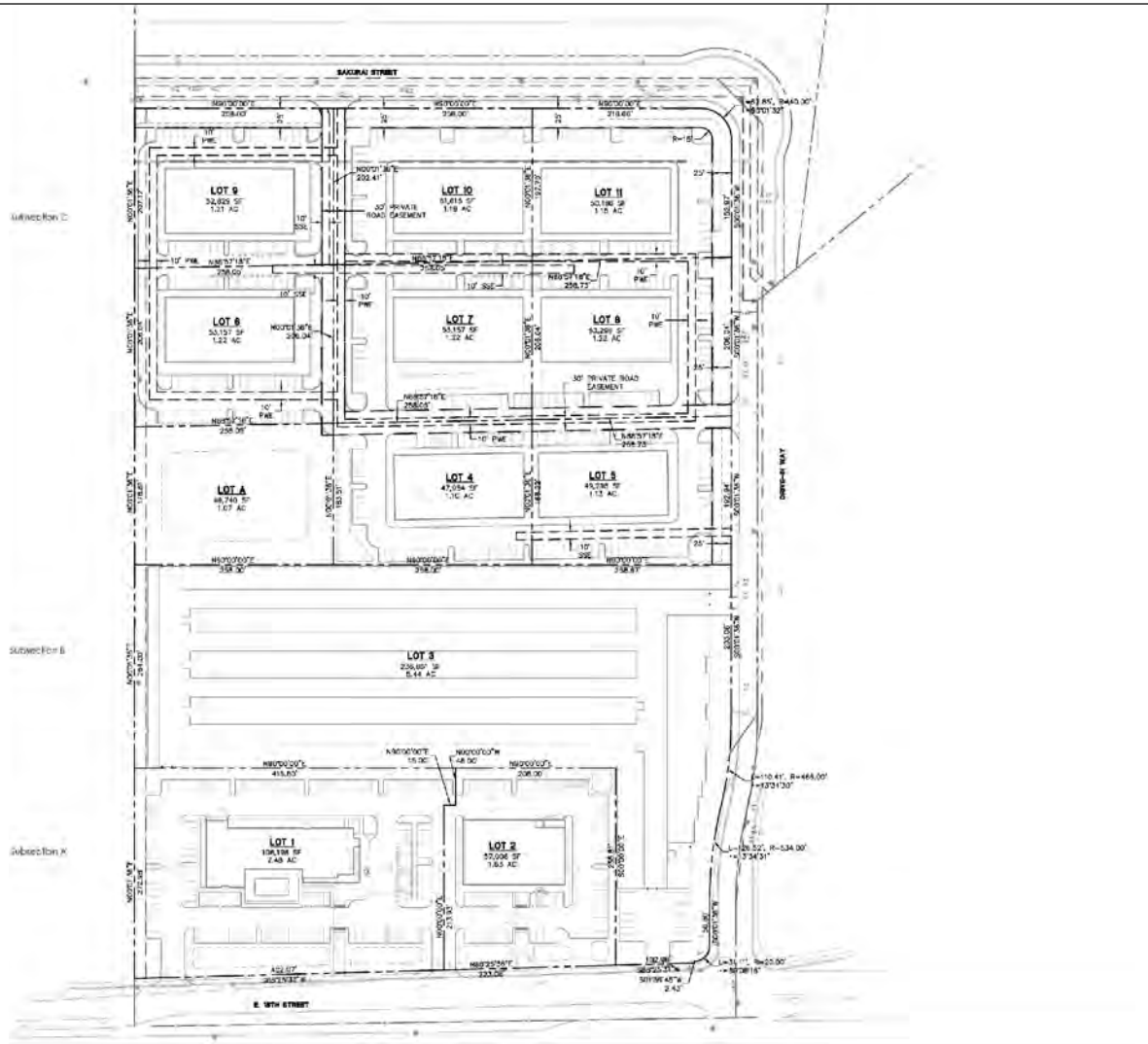
Client/Project
City of Antioch
Acorn Business Park Project, Antioch, California
Initial Study/Mitigated Negative Declaration

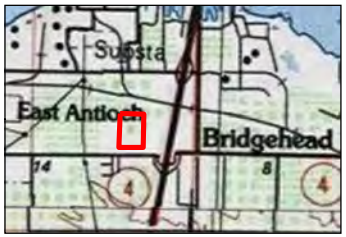
Prepared by WDC on 2018-10-04
Technical Review by EN on 2018-10-04
Independent Review by JDM on 2018-10-04

Figure No.
2.0-3

Title
Overall Site Plan

This page left intentionally blank.





N

Drawing Not to Scale

Stantec

Project Location
T. 02N R.02E Section 21
USGS 7.5-minute Quadrangle:
Antioch North

Client/Project
City of Antioch
Acorn Business Park Project, Antioch, California
Initial Study/Mitigated Negative Declaration

Prepared by WDC on 2018-10-04
Technical Review by EN on 2018-10-04
Independent Review by JDM on 2018-10-04

Figure No.
2.0-4

Title
Tentative Map

This page left intentionally blank.

Subsection A

Subsection A is proposed for commercial development. A list of proposed uses for the Subsection A has been developed by the applicant and is provided in Table 2.1-3. The ultimate uses allowed at the site will be determined by City Council action on the Planned Development Rezone request.

Table 2.1-3 Acorn Business Park Proposed Uses – Subsection A

Use Classification
Banks and Savings and Loan
Convenience store
Cannabis related businesses – Subject to City Council Approval
Eating and drinking establishments: • General restaurant • Cocktail lounge/ bar
Food & beverage production with ancillary tasting rooms (Microbrewery)
Health Clubs
Offices, business, and professional
Offices, medical and dental
Music or Dance studio, martial arts training or similar facility
Personal Services (barber shop, beauty shop)
Retail sales not listed under another use classification
Furniture and appliance store, households' equipment, and furniture repair/warehouse sale
Hotel, auxiliary uses and services to hotel
Animal sales and services • Animal boarding Animal grooming • Animal Hospitals (veterinary clinic)

Source: City of Antioch, September 2018

The conceptual site plans for Subsection A provide for the development of either two 16,800 square foot buildings or a 4-story, 95-room hotel and a 11,0088 square foot building.

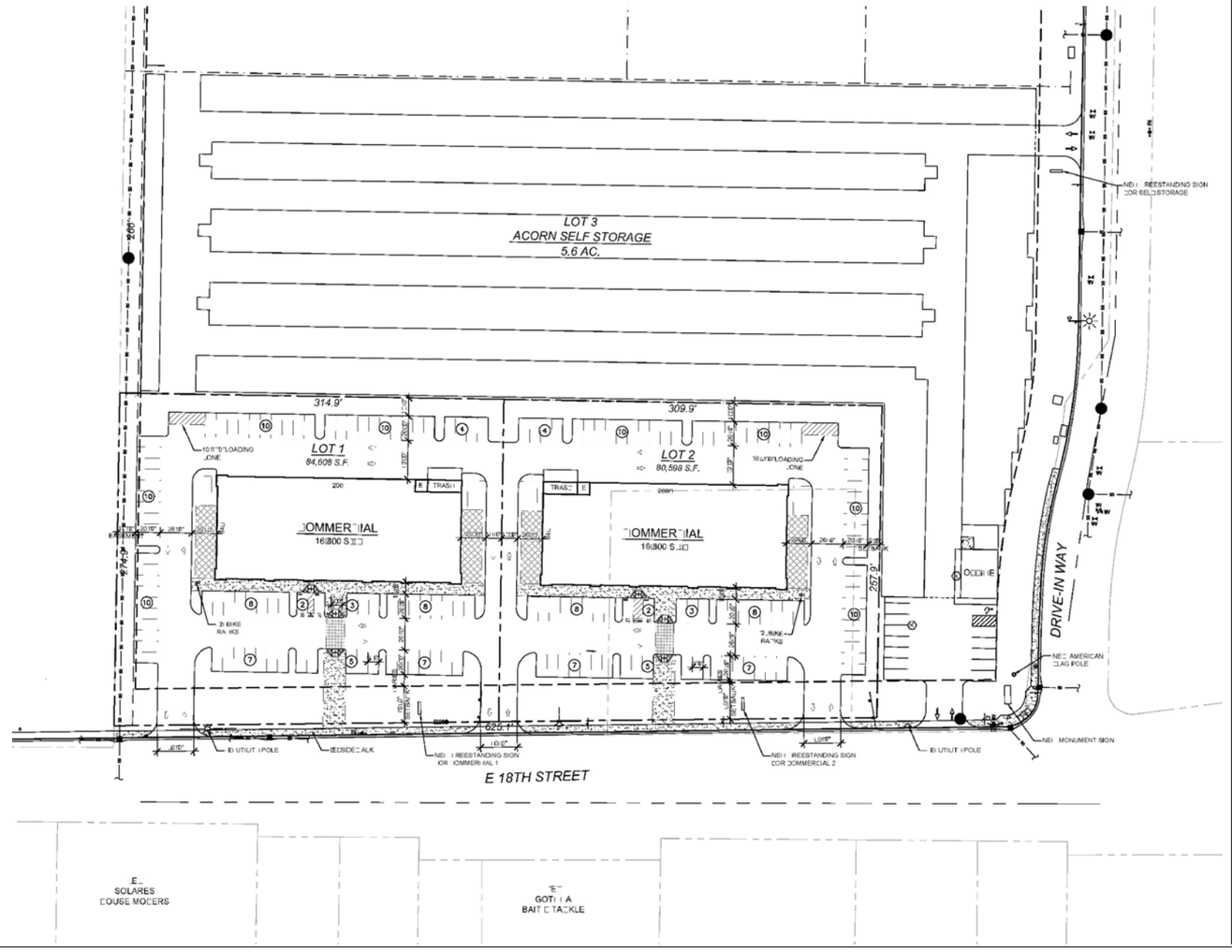
Table 2.1-4 provides the proposed development standards that have been created for Subsection A.

Table 2.1-4 Acorn Business Park Planned Development Standards: Subsection A – Commercial

Standard	Requirement for Project
Building Size	Commercial - 8,000 square foot (minimum); Hotel - 80 Rooms (minimum)
Minimum Lot Size	20,000 square foot
Maximum Lot Coverage	40 percent
Front/Street Side Setback	30-foot (minimum) along East 18th; or 20-foot(minimum) along hotel frontage
Side Yard Setback	0-foot
Rear Yard Setback	10-foot (minimum)

Building Height	70-foot (maximum)
Parking	Standard Stall Dimensions – 9-foot x 20-foot (18-foot with 2-foot overhang, adjacent to curb or landscaping) Compact Stall Dimensions – 8-foot x 16-foot Commercial – 1 space per 250 square feet Hotel - One space per room + one space per employee at largest shift; if banquet facilities are provided, provide one space per 50 square feet of banquet seating area
EV Parking/Charging	As required by California Building Code
Driveway/Drive Aisles	Driveway 30-foot (minimum); Two Way Drive Aisles 26-foot (minimum)
Landscape Requirements	20-foot (minimum) landscaped setback along East 18th Street; One landscape island per 10 parking stalls (minimum)
Shade Requirements	30 percent of site at mature size/canopy of trees; shorter trees along northern boundary so solar panels are not shaded on 10-foot self-storage building rooftops to the north
Signage	A signage program would be developed in accordance with the City's Design Review Standards subject to approval by the Planning Commission.
Architectural Requirements	Subject to site plan review and City Design Guidelines
Fence Requirements	6-foot wrought iron
Trash Enclosure	Trash enclosure shall be located within each building envelope per waste management standards and AMC 9-5.1401

Source: City of Antioch, September 2018



SITE DATA

APN 0[illegible]
SITE AREA (COMMERCIAL) ±165,206 S.F. (3.79 AC.)
ZONING PBD [illegible] PLANNED BUSINESS CENTER REGIONAL COMMERCIAL DISTRICT

SITE AREA	
LOT 1	84,608 SF
LOT 2	80,598 SF
TOTAL COMMERCIAL SITE AREA	165,206 SF
LOT 1 - COMMERCIAL:	
SITE AREA	84,608 SF
BUILDING AREA	
COMMERCIAL	16,800 SF
[illegible]OVERAGE	19.8
PARKING REQUIRED	
COMMERCIAL AT 1/200 SF	16,800 SF = 68 SPACES
PARKING PROVIDED	
ACCESSIBLE	2 SPACES
STANDARD	82 SPACES
TOTAL PARKING PROVIDED	84 SPACES
LOT 2 - COMMERCIAL:	
SITE AREA	80,598 SF
BUILDING AREA	
COMMERCIAL	16,800 SF
[illegible]OVERAGE	20.1
PARKING REQUIRED	
COMMERCIAL AT 1/200 SF	16,800 SF = 84 SPACES
PARKING PROVIDED	
ACCESSIBLE	2 SPACES
STANDARD	82 SPACES
TOTAL PARKING PROVIDED	84 SPACES

Stantec

N

Drawing Not to Scale

Project Location
T. 02N R.02E Section 21
USGS 7.5-minute Quadrangle:
Antioch North

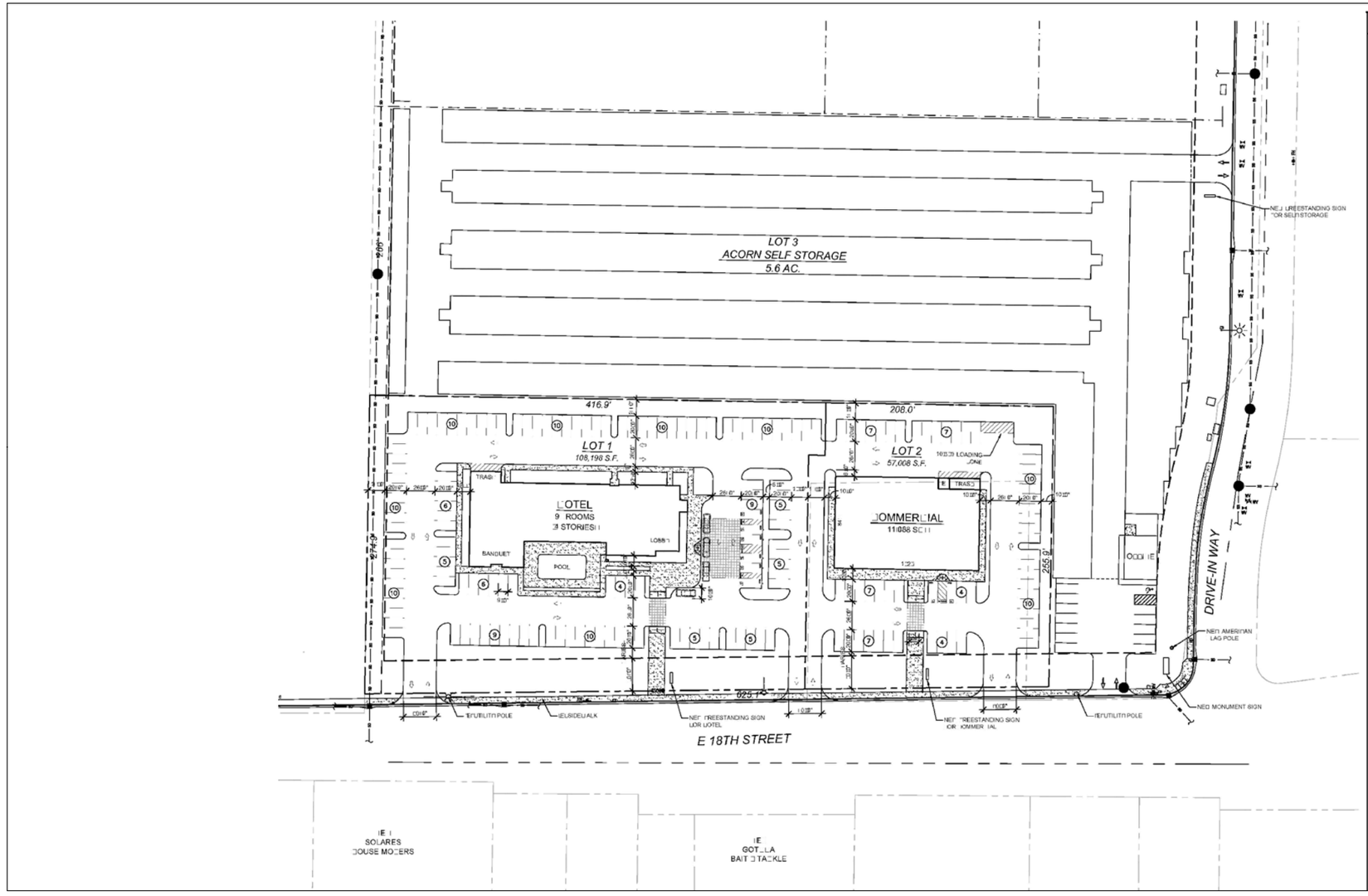
Prepared by WDC on 2018-10-08
Technical Review by EN on 2018-10-08
Independent Review by JDM on 2018-10-08

Client/Project
City of Antioch
Acorn Business Park Project, Antioch, California
Initial Study/Mitigated Negative Declaration

Figure No.
2.0-5

Title
Subsection A Site Plan - Alternative A-1

This page left intentionally blank.



SITE DATA

APN: 066-210-112 & 066-210-111
SITE AREA: (COMMERCIAL) ±165,206 S.F. (3.79 AC.)
ZONING: PBC - PLANNED BUSINESS CENTER - REGIONAL COMMERCIAL DISTRICT

SITE AREA:

LOT 1	108,198 SQ. FT.
LOT 2	57,008 SQ. FT.
TOTAL SITE AREA	165,206 SQ. FT.

LOT 1 - HOTEL:

SITE AREA	108,198 SQ. FT.

HOTEL BUILDING AREA:

GROUND FLOOR (14 ROOMS)	12,306 SQ. FT.
SECOND FLOOR (27 ROOMS)	10,777 SQ. FT.
THIRD FLOOR (27 ROOMS)	10,777 SQ. FT.
FOURTH FLOOR (27 ROOMS)	10,777 SQ. FT.
TOTAL BUILDING AREA	44,637 SQ. FT.
FAR: TOTAL SQ. FT. / SITE SQ. FT.	0.41
COVERAGE: GROUND SQ. FT. / SITE SQ. FT.	11.2%
TOTAL NUMBER OF ROOMS	90 ROOMS

HOTEL PARKING REQUIRED:

1/ROOM (90 ROOMS)	90 SPACES
1/EMPLOYEE (10)	10 SPACES
1/100 SQ. FT. DINING (1,200 SQ. FT.)	24 SPACES
TOTAL PARKING REQUIRED	129 SPACES

HOTEL PARKING PROVIDED:

ADA ACCESSIBLE	6 SPACES
STANDARD	123 SPACES
TOTAL PARKING PROVIDED	129 SPACES

LOT 2 - COMMERCIAL:

SITE AREA	57,008 SQ. FT.

COMMERCIAL BUILDING AREA:

COMMERCIAL	11,088 SQ. FT.
FAR: TOTAL SQ. FT. / SITE SQ. FT.	0.2
COVERAGE: GROUND SQ. FT. / SITE SQ. FT.	19.4%

COMMERCIAL PARKING REQUIRED:

1,200 SQ. FT. / 11,088 SQ. FT.	46 SPACES

COMMERCIAL PARKING PROVIDED:

ADA ACCESSIBLE	2 SPACES
STANDARD	44 SPACES
TOTAL PARKING PROVIDED	46 SPACES

Stantec

N

Drawing Not to Scale

Project Location
T. 02N R.02E Section 21
USGS 7.5-minute Quadrangle:
Antioch North

Prepared by WDC on 2018-10-08
Technical Review by EN on 2018-10-08
Independent Review by JDM on 2018-10-08

Client/Project
City of Antioch
Acorn Business Park Project, Antioch, California
Initial Study/Mitigated Negative Declaration

Figure No.
2.0-6

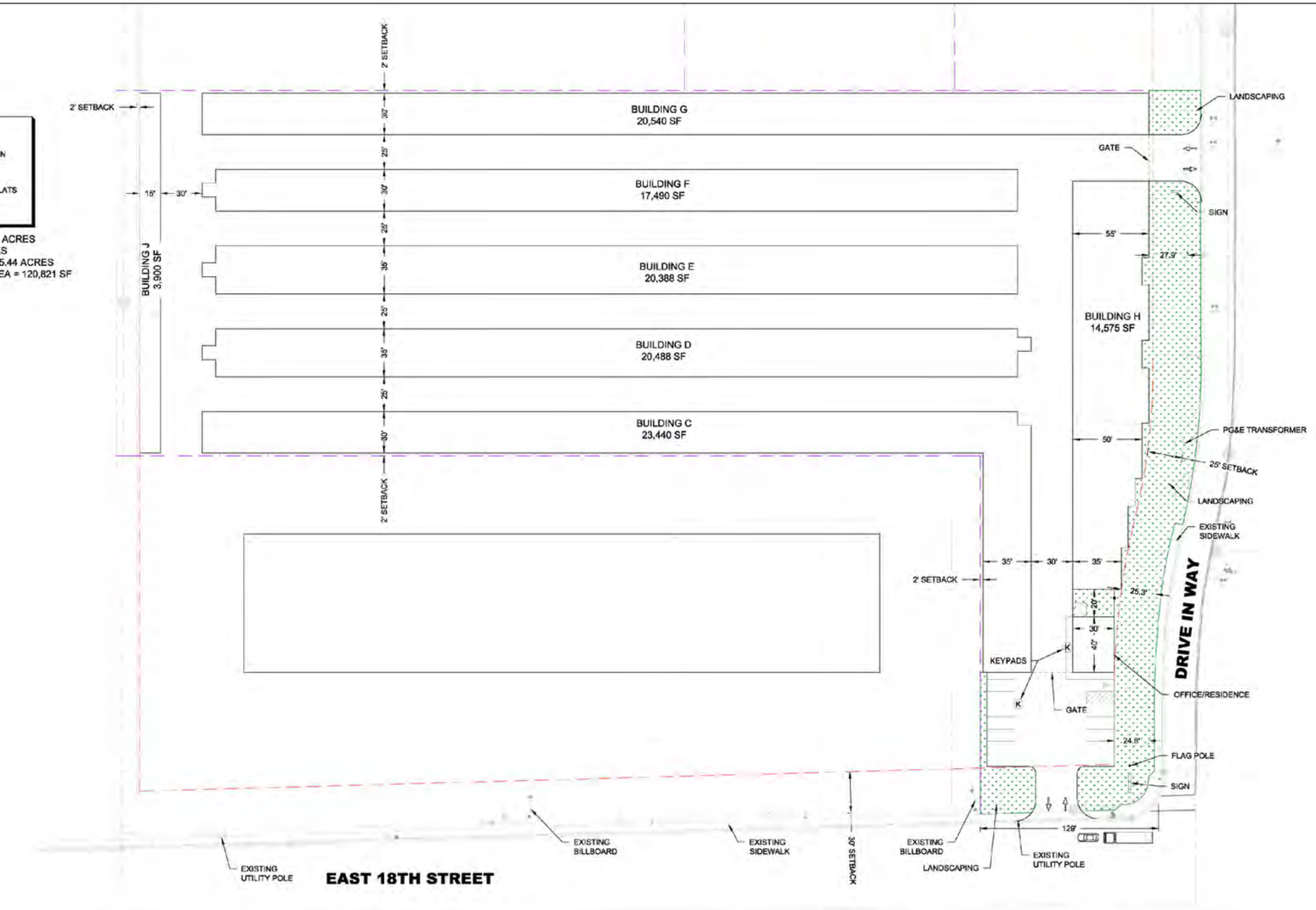
Title
Subsection A Site Plan - Alternative A-2

This page left intentionally blank.

LEGEND

- PROPERTY LINE
- PROPOSED SUBDIVISION
- EASEMENT
- SETBACK LINE
- 10' TALL FENCE WITH SLATS
- GATE
- (K) KEYPAD

LIGHT INDUSTRIAL LOT AREA = 10.52 ACRES
COMMERCIAL LOT AREA = 3.79 ACRES
ACORN SELF STORAGE LOT AREA = 5.44 ACRES
TOTAL SELF STORAGE BUILDING AREA = 120,821 SF
OFFICE AREA = 1,200 SF
FLOOR AREA RATIO = 51%



Stantec

N

Drawing Not to Scale

Project Location
T. 02N R.02E Section 21
USGS 7.5-minute Quadrangle:
Antioch North

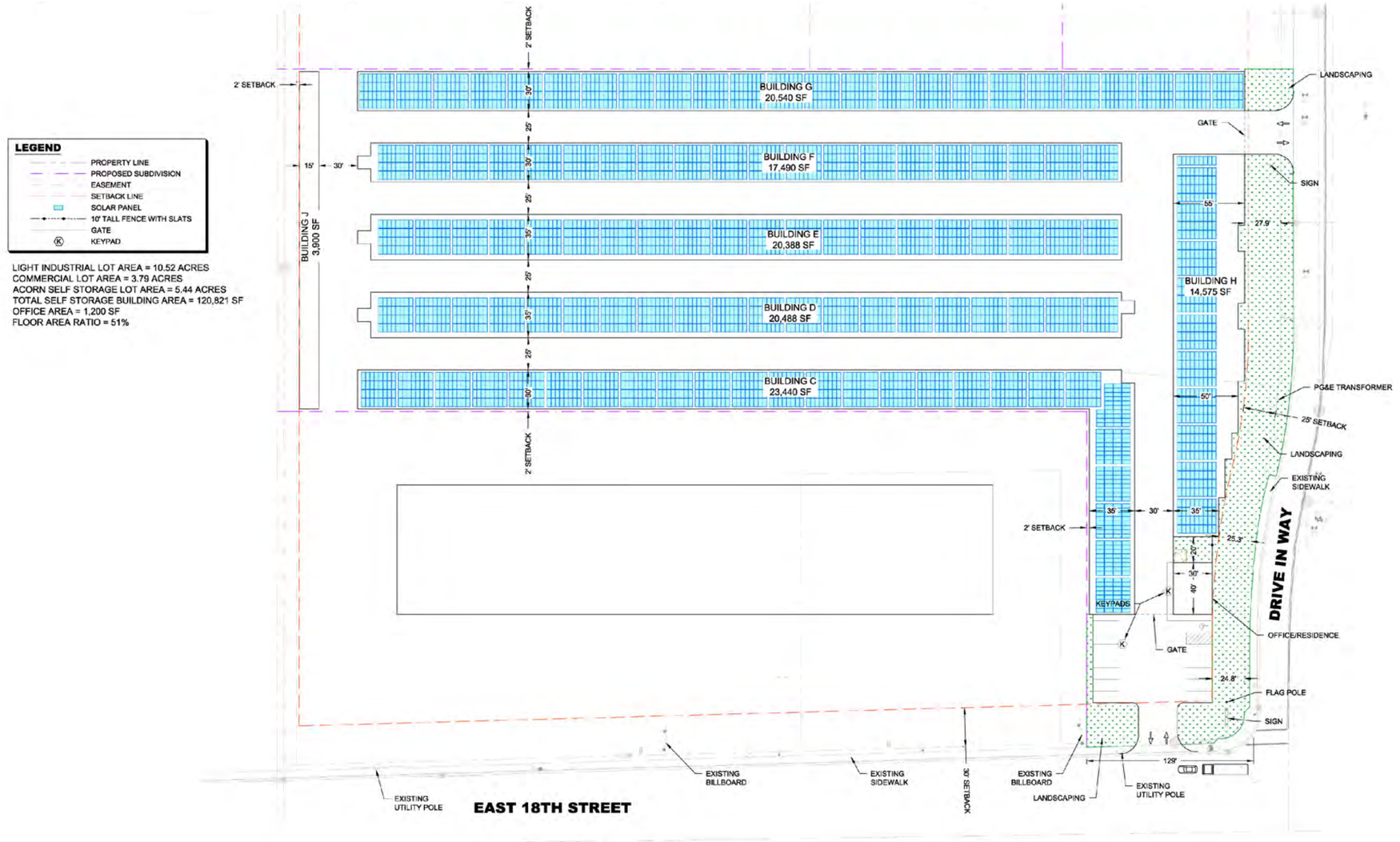
Prepared by WDC on 2018-10-08
Technical Review by EN on 2018-10-08
Independent Review by JDM on 2018-10-08

Client/Project
City of Antioch
Acorn Business Park Project, Antioch, California
Initial Study/Mitigated Negative Declaration

Figure No.
2.0-7

Title
Subsection B Site Plan - Alternative B-1

This page left intentionally blank.



Stantec

N

Drawing Not to Scale

Project Location
T. 02N R.02E Section 21
USGS 7.5-minute Quadrangle:
Antioch North

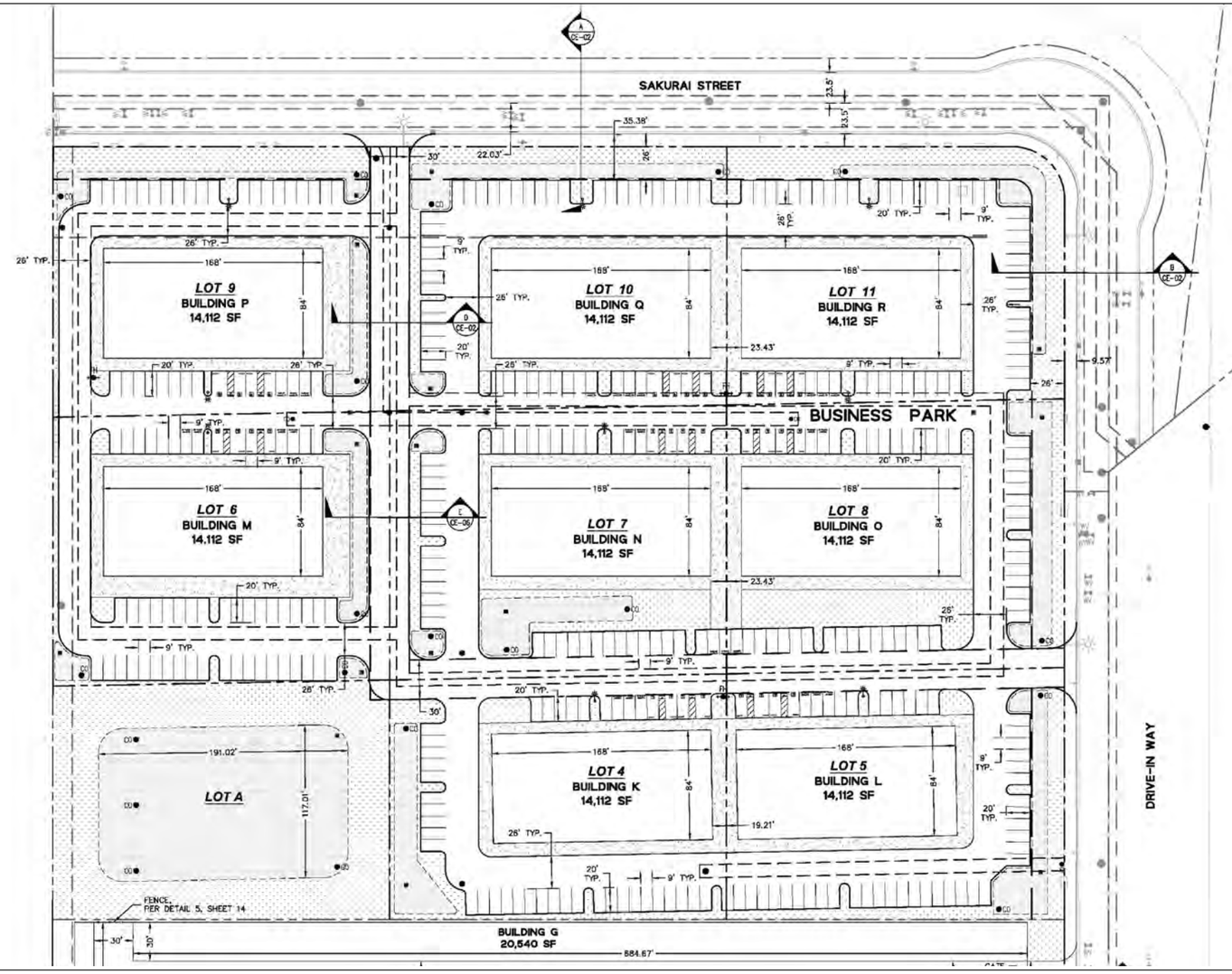
Prepared by WDC on 2018-10-08
Technical Review by EN on 2018-10-08
Independent Review by JDM on 2018-10-08

Client/Project
City of Antioch
Acorn Business Park Project, Antioch, California
Initial Study/Mitigated Negative Declaration

Figure No.
2.0-8

Title
Subsection B Site Plan - Alternative B-2

This page left intentionally blank.



PARKING TABLE

LOT NUMBER	REQUIRED NUMBER OF SPACES			PROPOSED NUMBER OF SPACES			REQUIRED PARKING RATIO	PROPOSED PARKING RATIO
	ADA	STANDARD	E.V.	ADA	STANDARD	E.V.		
4–11	48	328	28	48	328	28	1 PER 300 SF	1 PER 300 SF

SURFACE IMPROVEMENTS LEGEND

- BIOTREATMENT AREA.
- CONCRETE WALK
- LANDSCAPE

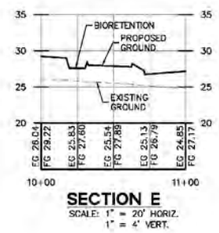
LOT COVERAGE

LOT NUMBER	% BUILDING COVERAGE	% LANDSCAPE/ OPEN SPACE AREA	FLOOR AREA RATIO
1	11.2%	39.1%	39.9%
2	20.1%	30.3%	20.1%
3	57.7%	19.5%	57.7%
4	29.4%	28.8%	29.4%
5	28.6%	29.0%	28.6%
6	26.5%	31.8%	26.5%
7	26.5%	25.9%	26.5%
8	26.5%	33.5%	26.5%
9	26.7%	35.0%	26.7%
10	27.3%	29.9%	27.3%
11	28.1%	36.0%	28.1%
A	0%	100%	0%

NOTE: PERCENTAGE OF LOT COVERAGE IS PERCENT OF NET LOT AREA COVERED BY BUILDINGS (TOTAL GROUND FLOOR AREA OF ALL BUILDINGS DIVIDED BY NET LOT AREA).

LEGEND

- PROPERTY LINE
- EASEMENT LINE
- BIOTREATMENT LINE
- LIGHT POLE
- FIRE HYDRANT
- CLEANOUT
- STORMWATER CATCH BASIN
- MANHOLE



SECTION E
SCALE: 1" = 20' HORIZ.
1" = 4' VERT.

Stantec

N

Drawing Not to Scale

Project Location
T. 02N R.02E Section 21
USGS 7.5-minute Quadrangle:
Antioch North

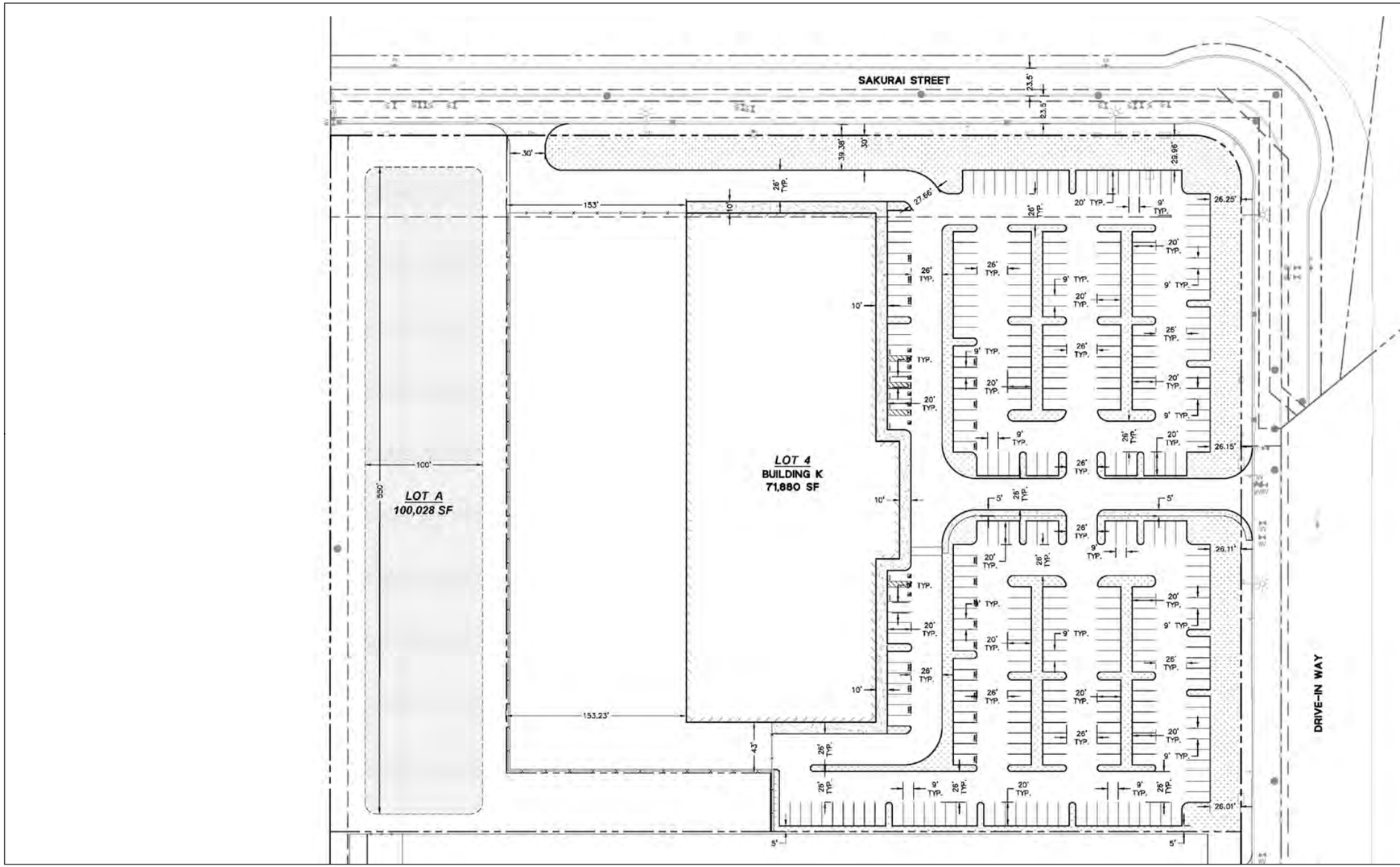
Prepared by WDC on 2018-10-08
Technical Review by EN on 2018-10-08
Independent Review by JDM on 2018-10-08

Client/Project
City of Antioch
Acorn Business Park Project, Antioch, California
Initial Study/Mitigated Negative Declaration

Figure No.
2.0-9

Title
Subsection C Site Plan - Alternative C-1

This page left intentionally blank.



PARKING TABLE

LOT NUMBER	REQUIRED NUMBER OF SPACES			PROPOSED NUMBER OF SPACES			REQUIRED PARKING RATIO	PROPOSED PARKING RATIO
	ADA	STANDARD	E.V.	ADA	STANDARD	E.V.		
4	7	287	22	8	321	25	1 PER 300 SF	1 PER 300 SF

SURFACE IMPROVEMENTS LEGEND

- BIOTREATMENT AREA.
- CONCRETE WALK
- LANDSCAPE

LOT COVERAGE

LOT NUMBER	% BUILDING COVERAGE	% LANDSCAPE/ OPEN SPACE AREA	FLOOR AREA RATIO
4	20.1%	14.6%	20.1%
A	0%	100%	0%

NOTE: PERCENTAGE OF LOT COVERAGE IS PERCENT OF NET LOT AREA COVERED BY BUILDINGS (TOTAL GROUND FLOOR AREA OF ALL BUILDINGS DIVIDED BY NET LOT AREA).

LEGEND

- PROPERTY LINE
- EASEMENT LINE
- BIOTREATMENT LINE
- LIGHT POLE
- FIRE HYDRANT
- CLEANOUT
- STORMWATER CATCH BASIN
- MANHOLE

Stantec

N

Drawing Not to Scale

Project Location
T. 02N R.02E Section 21
USGS 7.5-minute Quadrangle: Antioch North

Prepared by WDC on 2018-10-08
Technical Review by EN on 2018-10-08
Independent Review by JDM on 2018-10-08

Client/Project
City of Antioch
Acorn Business Park Project, Antioch, California
Initial Study/Mitigated Negative Declaration

Figure No.
2.0-10

Title
Subsection C Site Plan - Alternative C-2

This page left intentionally blank.

Subsection B

Subsection B would be developed as a single-story self-storage facility comprised of eight separate buildings totaling 122,021 square feet. The self-storage facility is the only use being requested for Subsection B. Table 2.1-5 provides the development standards for the self-storage facility.

Table 2.1-5 Acorn Business Park Planned Development Standards: Subsection B - Commercial

Standard	Requirement for Project
Storage Units Provided	500 (minimum) – 1,025 (maximum)
Minimum Lot Size	20,000 square foot
Maximum Lot Coverage	65 percent
Allowed Uses	Self-Storage and ancillary sales, truck rental, RV parking during phased construction (AUP required), and utility sized solar generation on self-storage building rooftops
Uses Allowed Subject to Use Permit Approval	Cell tower
Front/Street Side Setback	30-foot (minimum) along East 18th Street; 20-foot (minimum) along Drive-In Way
Side Yard Setback – Interior	0-foot
Rear Yard Setback	0-foot
Building Height	Storage Buildings – 18-foot (maximum); Storage Office – 40-foot (maximum); Cell Tower consistent with AMC
Parking	Standard Stall Dimensions – 9-foot x 20-foot (18-foot with 2-foot overhang, adjacent to curb or landscaping) Compact Stall Dimensions – 8-foot x 16-foot One space per 100 storage units plus one space for staff; plus, self-storage rental truck spaces
EV Parking/Charging	None
Solar Panels	Solar panels shall be allowed to be installed on top of storage unit buildings
Driveway/Drive Aisles	Driveway 25-foot (minimum); Two Way Drive Aisles 25-foot (minimum)
Hours of Operation	Office: 9 AM to 6 PM. Daily; Standard Gate Hours 6 AM to 10 PM; Extended Hours: 24 Hours per day - For Licensed Contractors
Landscape Requirements	30-foot (minimum) along East 18th Street; 20-foot (minimum) along Drive-In Way
Shade Requirements	None
Signage	A signage program would be developed in accordance with the City's Design Review Standards subject to approval by the Planning Commission.
Architectural Requirements	Subject to design review and City Design Guidelines
Fence Requirements	5-foot white picket fence around office sidewalk to back yard patio area; 7-foot concrete wall around back patio of office; 7-foot wrought iron gates to be rolling or swing, located between storage buildings
Trash Enclosure	Trash enclosure shall be placed in a location accessible to the local trash collection agency. A minimum of one trash enclosure shall be placed per Lot. Enclosure shall accommodate trash and recyclables and meet the requirements of AMC 9-5.1401

Source: City of Antioch, September 2018

Subsection C

Subsection C is planned as an employment center. A list of proposed uses for the Subsection C has been developed and is provided in Table 2.1-6.

Table 2.1-6 Acorn Business Park Proposed Uses – Subsection C

Use Classification
Commissary use related to food trucks
Food & beverage production with ancillary tasting rooms (Microbrewery)
Public Safety Facilities
Ambulance services
Animal sales and services • Animal boarding Animal grooming • Animal Hospitals (veterinary clinic) • Animal crematorium
Offices, business and professional
Research and Development
Warehousing, Distribution, Storage
Light Manufacturing - Production and Assembly
Schools, Public and Private
All Cannabis uses approved in the Antioch overlay district – subject to City Council approval

Source: City of Antioch, September 2018

The conceptual site plans for Subsection C provide for the development of eight separate buildings approximately 14,112 square feet each for a total of 112,896 square feet and a bioretention basin or one large building of 71,880 square feet and the bioretention basin.

The development standards for Subsection C are provided in Table 2.1-7.

Table 2.1-7 Acorn Business Park Planned Development Standards: Subsection C – Employment Center

Standard	Requirement for Project
Building Size	9,000 square foot (minimum)
Lot Size	20,000 square foot (minimum)
Maximum Lot Coverage	50 percent
Front/Street Side Setback	20-foot (minimum) along Drive-In Way; 20-foot (minimum) along Sakurai Street
Side Yard Setback – Interior	0-foot
Rear Yard Setback	0-foot
Building Height	60-foot (maximum)
Parking	Standard Stall Dimensions – 9-foot x 20-foot (18-foot with 2-foot overhang, adjacent to curb and landscaping) Compact Stall Dimensions – 8-foot x 16-foot

Standard	Requirement for Project
EV Parking/Charging	As required by California Building Code
Driveway/Drive Aisles	Driveway 26-foot (minimum); Two-Way Drive Aisles 26-foot (minimum)
Landscape Requirements	20-foot (minimum) setback along Drive-In Way; 20-foot (minimum) setback along Sakurai Street; One landscape island per 10 parking stalls (minimum)
Shade Requirements	25 percent of site at mature size/canopy of trees
Signage	A signage program would be developed in accordance with the City's Design Review Standards.
Architectural Requirements	Subject to design review and City Design Guidelines
Fence Requirements	None
Trash Enclosure	Trash enclosure shall be located within building envelope per waste management standards and AMC 9-5.1401

Source: City of Antioch, September 2018

2.1.1 Vehicular Access and Parking

Access to the project site would be provided from East 18th Street, Drive-In Way, and Sakurai Street.

Subsection A would have access from East 18th Street via two driveways, which would continue as internal circulation roads.

Subsection B would have access from East 18th Street and Drive-In Way via one driveway each. Those driveways would continue as internal circulation roads.

Subsection C would have access from Drive-In Way and Sakurai Street with one driveway on each street. The driveways would continue as internal circulation roads.

Parking for the project site is summarized in Table 2.1-8 below:

Table 2.1-8 Parking Table

Subsection	Lot Number	Required			Proposed		
		ADA	Standard	EV	ADA	Standard	EV
A*	1	6	113	10	6	119	10
	2	4	54	6	4	66	6
B	3	2	6	0	1	12	0
C**	4–11	48	328	28	48	328	28

Notes:

ADA – Americans with Disabilities Act (accessible parking spaces)

EV – Electric vehicle parking spaces

* Parking for conceptual site plan Subsection A -Alternative A-1 shown. Subsection A – Alternative A-2 would only provide 168 parking spaces (4 ADA and 164 standard)

** Parking for conceptual site plan Subsection C – Alternative C-1 shown. Subsection C – Alternative C-2 would only provide 354 parking spaces (8 ADA, 321 standard, and 25 EV).

Source: City of Antioch, September 2018

2.1.2 Utilities

Pacific Gas and Electric Company (PG&E) provides electricity and natural gas service to the project site. Electrical and gas connections would be made from existing facilities located on-site.

East Bay Municipal Utility District provides water to the project site.

The City of Antioch owns and maintains the storm drainage and waste water facilities in public rights of way. The proposed project would be served by existing water mains on N Drive-In Way, Sakurai Street, and East 18th Street. In general, the project site is served with 8-inch-diameter water mains. The project site is also served by 8-inch sewer lines.

The preliminary utility plans for the proposed project are shown on Figures 2.0-11a and 2.0-11b.

2.1.3 Landscaping

The project site is currently undeveloped and composed of weedy, non-native vegetation. The project site would be cleared and landscaping conforming to City and state-wide landscape regulations and guidelines would be provided. Figures 2.0-12a and 2.0-12b provide the overall landscape plan and planting details.

Plant materials were selected in accordance with the "Water-Use Classification of Landscape Species" prepared by the California Department of Water Resources. The proposed irrigation system will be designed to meet current water efficient standards and State Water Efficient Ordinance Assembly Bill 1881 as required by the City of Antioch.

2.2 PROJECT CONSTRUCTION

This section discusses the construction activities associated with the proposed project.

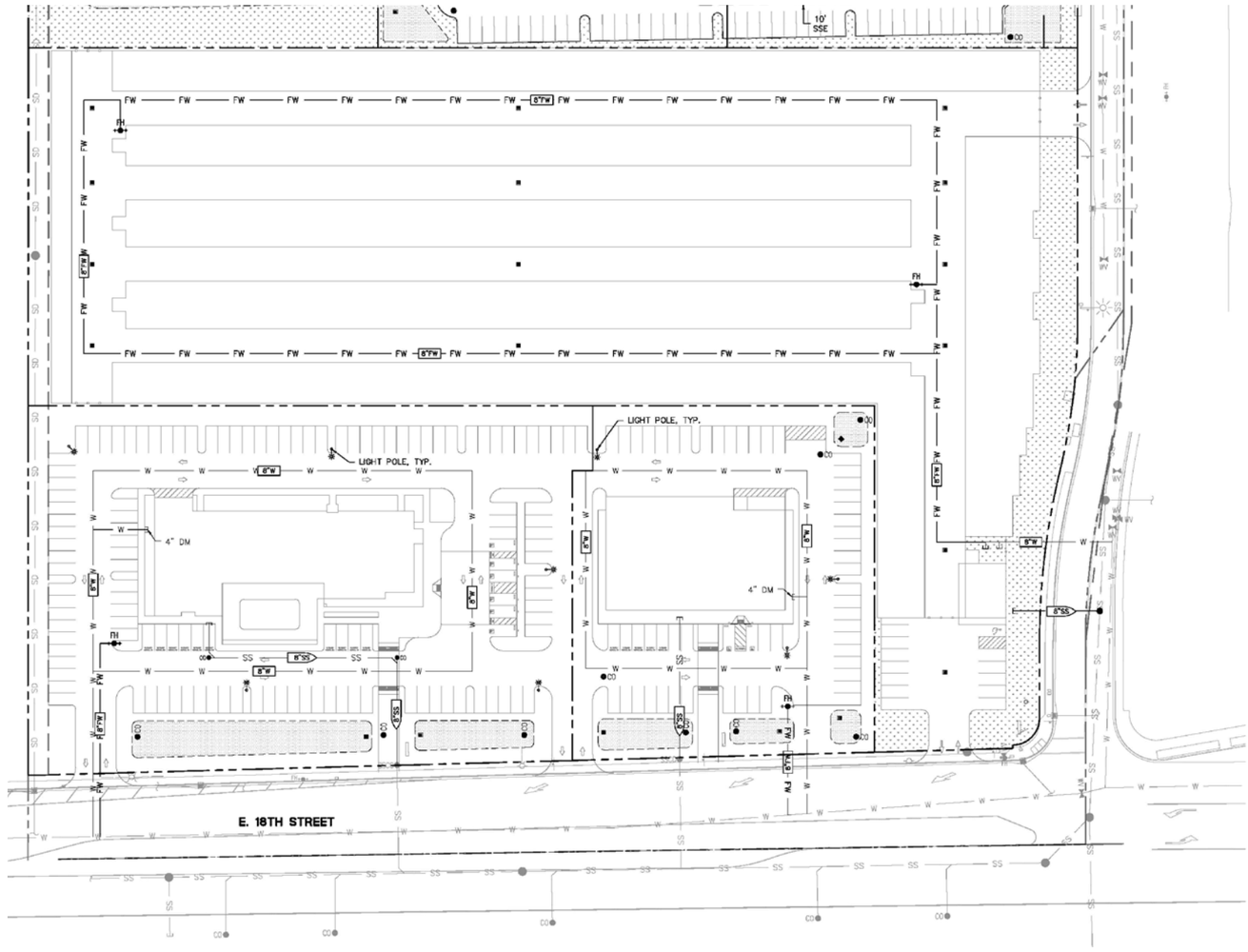
2.2.1 Schedule

The project site will be constructed as a planned development with Subsection B, the self-storage facility being constructed initially. Construction of Subsection B would occur as soon as six months from the project approval date and would last approximately 11 months (May 2019–March 2020). The remaining phases of the project would be constructed as market conditions dictate.

To provide a conservative analysis, the remainder of the project site was assumed to be developed simultaneously within an 18-month construction schedule beginning as early as June 2020 with an estimated completion date of November 2021.

Project construction hours would be in accordance with the City of Antioch noise ordinance, which limits 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.



UTILITY LEGEND:

- PROPERTY LINE
- SANITARY SEWER EASEMENT
- PUBLIC WATER EASEMENT
- SANITARY SEWER PIPE
- DOMESTIC WATER PIPE
- FIRE WATER PIPE
- FIRE HYDRANT
- CURB DRAIN INLET
- STORM DRAIN MANHOLE
- SANITARY SEWER MANHOLE
- CLEANOUT
- STREET LIGHT

N

Drawing Not to Scale

Project Location
T. 02N R.02E Section 21
USGS 7.5-minute Quadrangle:
Antioch North

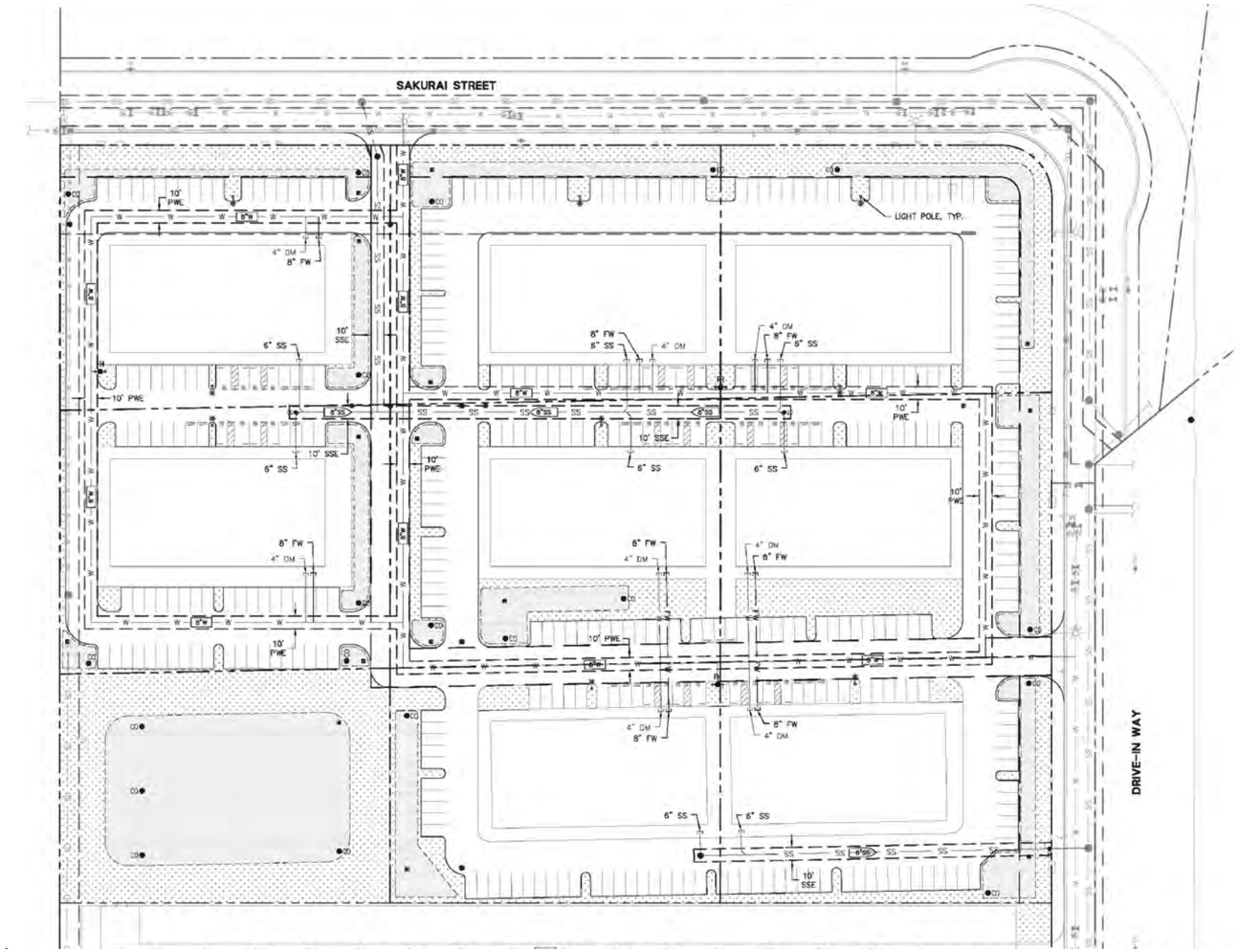
Prepared by WDC on 2018-10-08
Technical Review by EN on 2018-10-08
Independent Review by JDM on 2018-10-08

Client/Project
City of Antioch
Acorn Business Park Project, Antioch, California
Initial Study/Mitigated Negative Declaration

Figure No.
2.0-11a

Title
Preliminary Utility Plan

This page left intentionally blank.



UTILITY LEGEND:

- PROPERTY LINE
- SANITARY SEWER EASEMENT
- PUBLIC WATER EASEMENT
- SS — SANITARY SEWER PIPE
- X"W — W — DOMESTIC WATER PIPE
- X"FW — FW — FIRE WATER PIPE
- FIRE HYDRANT
- CURB DRAIN INLET
- STORM DRAIN MANHOLE
- SANITARY SEWER MANHOLE
- CO — CLEANOUT
- STREET LIGHT

Stantec

N

Drawing Not to Scale

Project Location
T. 02N R.02E Section 21
USGS 7.5-minute Quadrangle:
Antioch North

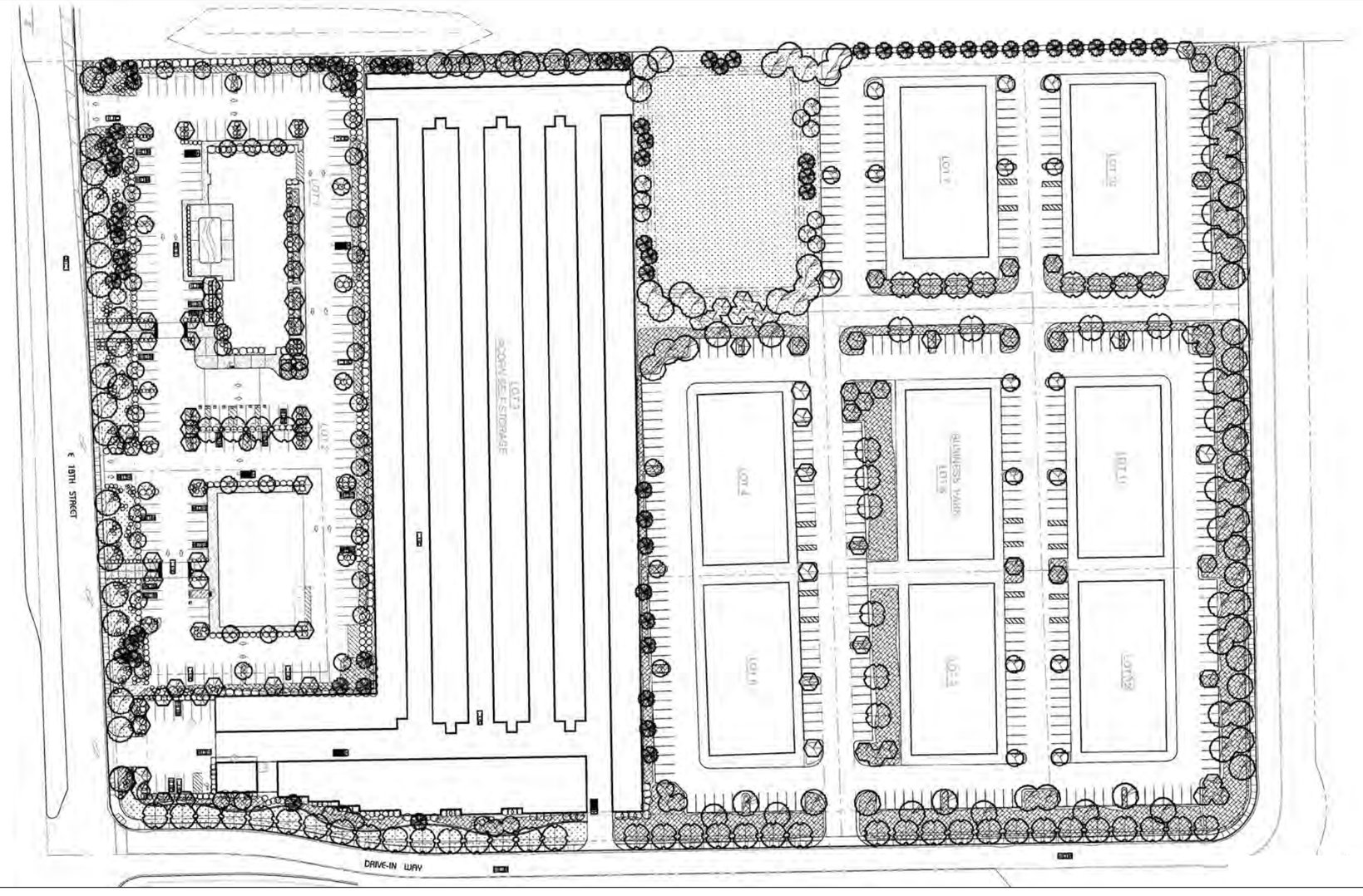
Prepared by WDC on 2018-10-08
Technical Review by EN on 2018-10-08
Independent Review by JDM on 2018-10-08

Client/Project
City of Antioch
Acorn Business Park Project, Antioch, California
Initial Study/Mitigated Negative Declaration

Figure No.
2.0-11b

Title
Preliminary Utility Plan

This page left intentionally blank.



Stantec

N

Drawing Not to Scale

Project Location

T. 02N R.02E Section 21
USGS 7.5-minute Quadrangle:
Antioch North

Prepared by WDC on 2018-10-08
Technical Review by EN on 2018-10-08
Independent Review by JDM on 2018-10-08

Client/Project

City of Antioch
Acorn Business Park Project, Antioch, California
Initial Study/Mitigated Negative Declaration

Figure No.

2.0-12a

Title

Overall Landscape Plan

This page left intentionally blank.

Planting Legend

CANOPY TREE (Selection Optional):	24" Box	water use
Pistacia chinensis	CHINESE PISTACHE	Low
Quercus ilex	HOLLY OAK	Low
CONIFER (Selection Optional):	24" Box	WATER USE:
Pinus canariensis	CANARY ISLAND PINE	Low
Cedrus deodar	DEODAR CEDAR	Low
SMALL ACCENT TREE (Optional):	24" Box	WATER USE:
Arbutus 'Marina	N.C.N.	Low
Cercis candensis	EASTERN REDBUD	Low
Lagerstroemia x.f.	CRAPE MYRTLE	Low
VERTICAL TREE (Selection Optional):	24" Box	WATER USE:
Eucalyptus camaldulensis	RED GUM	Low
Liquidambar styraciflua	SWEET GUM	Moderate
Pyrus c. 'Aristocrat'	EVERGREEN PEAR	Low
Acer p. 'Columnare'	NCN	Moderate
LARGE SHRUB (Selection Options):	5-Gal	WATER USE:
Arbutus unedo	STRAWBERRY TREE	Low
Lavatera assurgentiflora	TREE MALLOW	Low
Rhamnus californicum	COFFEEBERRY	Low
MEDIUM SHRUB (Selection Options):	5-Gal	WATER USE:
Arctostaphylos spp.	MANZANITA	Low
Berberis spp.	BARBERRY	Moderate
Correa 'Dusky Bells	AUSTRALIAN FUCSHIA	Low
Dietes iridioides	FORTNIGHT LILY	Low
Lavandula spp.	LAVENDER	Low
Nandina domestica 'Variety	HEAVENLY BAMBOO	Low
Phormium t. 'Bronze Baby'	NEW ZELAND FLAX	Low
Pittosporum spp.	PITTOSPORUM	Low
Rhaphiolepis u. 'Minor'	YEDDO HAWTHORN	Low
Salvia leucantha	MEXICAN SAGE	Low
Teucrium fruticans	BUSH GERMANDER	Low
GROUND COVER (Selection Optional):	1-Gal & Flats:	WATER USE:
Arctostaphylos spp.	MANZANITA	Low
Baccharis p. 'Pigeon Point'	COYOTE BUSH	Low
Bio-Swale:	1-Gal/Sod	WATER USE:
Carex parsa	SEDGE	Low
Phyla nodiflora	KURAPIA	Low

Notes

1. All landscape and irrigation shall conform to the standards of the City and State wide landscape regulations and guidelines and all other Landscape related City and Regional standards.
2. All plant materials have been selected in accordance with:
   - WULCOS Project "Water-Use Classification of Landscape Species" California Department of Water Resources

WATER EFFICIENT LANDSCAPE STATEMENT

The irrigation system shall be designed to meet current water efficient standards and State Water Efficient Ordinance AB 1881 as required by local jurisdictions while achieving the goal of effectively providing the landscape with water by the means of high efficiency spray irrigation to the turf and ground cover areas and drip irrigation bubblers to restrict shrub planting and shrub mass planting area as applicable.

Irrigation systems shall be designed to accommodate recycled water where available either currently or in the future as directed by the Local Water Purveyor. Recycled water systems shall be designed in accordance with Local and State codes.

Irrigation systems for landscapes greater than 5,000 SF shall have a dedicated water meter for irrigation.

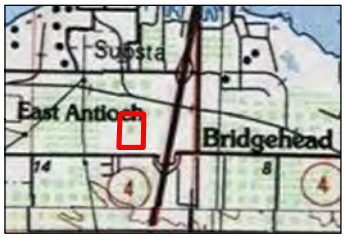
A water efficient landscape work sheet shall be included with hydrozone information table, water budget calculations and irrigation operating schedules.

A state of the art ET based self-adjusting irrigation controller shall be specified for this project to automatically control the water allocated to each valve grouped per individual hydrozone based on plant type and exposure. This shall include rain and flow sensors as applicable for a higher level of water conservation.

Tree bubblers shall be included on separate circuits to isolate the irrigation to trees and provide deep watering to promote a deeper root zone.

Spray irrigation systems for ground cover areas greater than 8' wide in any direction shall be designed with commercial series spray heads with high efficiency nozzles that include internal check valves and pressure compensating devices. The heads shall be designed in a head to head layout to achieve an even level of precipitation throughout the irrigation system. The nozzles will deliver water at a minimum of 70% efficiency with a low precipitation rate that matches the infiltration rate of the soil.

The drip irrigation system will incorporate pressure compensating drip bubblers with ½" drip tubes to each plant which delivers water at 90% efficiency at an application rate that matches the soil type.



N

Drawing Not to Scale

Stantec

Project Location
T. 02N R.02E Section 21
USGS 7.5-minute Quadrangle:
Antioch North

Client/Project
City of Antioch
Acorn Business Park Project, Antioch, California
Initial Study/Mitigated Negative Declaration

Prepared by WDC on 2018-10-08
Technical Review by EN on 2018-10-08
Independent Review by JDM on 2018-10-08

Figure No.
2.0-12b

Title
Planting Details

V:\1857\Active\185704284\03_data\gis_cad\gis\mxds\Fig12b_PlantingDetails.mxd Revised: 2018-10-08 By: wcampbell

This page left intentionally blank.

2.2.2 Access and Staging

The project site would be accessed by construction crews from SR-160, East 18th Street, and Drive-In Way. Any construction traffic, lane closures, or street staging would require approved traffic control plans (TCP) and an encroachment permit from the City. Once improvement plans are approved, the construction contractor would prepare a TCP and submit to the City for approval. Temporary lane closures are anticipated to construct proposed driveways and utility connections. Pedestrian walk ways would not be impacted along Drive-In Way as the walk way is on the opposite side of the road. Pedestrian access along East 18th Street would be maintained during construction.

The project would be staged on-site during construction. The staging areas would be used for construction equipment set up. An encroachment permit would be obtained from the City for any staging/construction-vehicle parking on adjacent streets, if necessary. Notices regarding closure to the public of street parking would be posted in compliance with City regulations in advance of use. Staging areas would be returned to pre-construction condition upon project completion.

2.2.3 Construction Equipment and Workers

The project would require the use of heavy equipment at various stages of construction such as, but not limited to excavation and concrete installation. The largest pieces of equipment anticipated on-site would include rubber-tired dozers, tractors/loaders/backhoes, graders, scrapers, excavators, cranes, and forklifts.

The project would require a peak of 53 workers during construction of Subsection B and 147 workers during the peak construction phase. It is anticipated that the construction workforce would be available from nearby areas. Since the project is also within commuting distance of the greater Sacramento, San Francisco Bay, and San Jose areas, no construction workers are expected to relocate because of project construction.

2.2.4 Grading

The project site would be graded to allow for the development of roadways, building pads, and parking. Preliminary earthwork estimates show total cut for site grading to be 26,800 cubic yards of soil, while total fill for grading is 32,400 cubic yards of soil, resulting in a net fill of 5,600 cubic yards.

2.2.5 Lighting

The proposed project would incorporate City standard freestanding street lighting along roadways, walkways and parking areas. City street lighting standards call for shielding to direct light and avoid skyglow. In addition, the proposed project would incorporate lighting on the exterior of the buildings, parking lots, and street lighting. The building lighting would be shielded and would be designed to avoid light spillage onto adjacent properties. All lighting would be subject to Design Review.

This page left intentionally blank.

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 Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Energy
☒ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards/Hazardous Materials
☒ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☒ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☒ Transportation/Traffic	☒ Tribal Cultural Resources
☐ Utilities/ Service Systems	☐ Wildfire	☒ Mandatory Findings of Significance

Evaluation of Environmental Impacts

Section 3.0, Environmental Checklist and Environmental Evaluation presents the environmental checklist form found in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist. Included in each discussion are project-specific mitigation measures recommended as appropriate. For this 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 instead of an ISMND.

Less Than Significant with Mitigation Incorporated: This designation applies when applicable and feasible mitigation measures previously identified in prior applicable EIRs or in the General Plan EIR 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. This designation also applies when the incorporation of new project-specific mitigation measures not previously identified in prior applicable EIRs or in the General Plan EIR has reduced an effect from a "Potentially Significant Impact" to a "Less Than Significant Impact."

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

No Impact: The proposed project would not have any impact. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources 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)**.**

This page left intentionally blank

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

The project site consists of a 19.75-acre site in northeast Antioch at the northwest corner of East 18th Street and Drive-In Way. The project site is undeveloped and frequently used by local residents for recreational dirt bike motorcycling.

Regional Visual Character

The project site is set within the City's Eastern Waterfront Employment Focus Area. This area is primarily flat and encompasses the industrial areas in the City that are south of the San Joaquin River and west of the SR-160 corridor. In addition, this area is characterized by the various commercial, agricultural, open space, and residential uses. In the area immediately surrounding the project site, buildings are concrete tilt up in appearance and vegetation consists of ornamental landscaping. Beyond the project site, uses include industrial power plant facilities to the north, the western boundary of the City of Oakley to the east, suburban neighborhoods to the south, and vineyards and commercial development to the west.

Mount Diablo is located approximately 13 miles southwest of the project site and is visible throughout the area, including within and near the project site. Views of Mount Diablo and its ridgelines are identified as important scenic resources in the City's General Plan and is a prominent natural landmark (City of Antioch 2003). The City's General Plan also identifies the San Joaquin River as an important scenic resource and a prominent natural landmark. However, the San Joaquin River is located over 1 mile from the project site and is not visible.

There are no officially designated state scenic highways near the project site. The segment of SR-160 that begins at the Contra Costa County and Sacramento County line is the nearest officially designated state scenic highway and located over 1 mile north of the project site.

Project Site Visual Character

The project site is currently vacant, it was previously leveled for development and includes curbs and gutters with roadway improvements surrounding the project site. The project site is bound by Drive-In Way to the north and east, East 18th Street to the south, and undeveloped land to the west. Land uses located near the project site primarily consist of commercial development and self-storage facilities to the north, east, and west, and residential uses to the south.

On October 10, 2018, Stantec visual resource specialists conducted a site reconnaissance and photographed the project site to document the existing site conditions and views of the project site from the surrounding land uses and adjacent roadways including, East 18th Street, Drive-In Way, and SR-160. Typical viewers in this area include workers, commuters, and shoppers along the adjacent local roads and both local and regional travelers along the elevated portions of the SR-160 corridor. Representative photographs from the surrounding area and their corresponding location in relation to the project site are presented on Figure 3.1-1 through Figure 3.1-3. Views of the project site from these areas are described below.

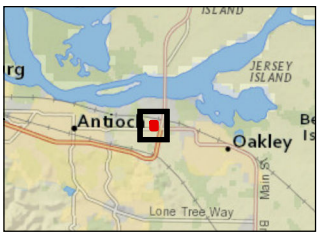
North: The project site is visible from the north in views from the adjacent Drive-In Way and southbound SR-160. From Drive-In Way, the project site appears bounded by commercial development (specifically the Markstein Sales Company), and transmission infrastructure. Mount Diablo is visible in the distance to the southwest in views from the area adjacent to the northeast of the project site. In elevated views to the southwest toward the project site from SR-160, the low- to medium-density, suburban-scale commercial and residential character of the area is evident. Mount Diablo's foothill ridgelines are also visible in the background of views toward the project site. Views from elsewhere north of the project site, such as Wilbur Avenue, are partially to fully obstructed by orchards and structures.

East: The project site is visible from the east in views from Drive-In Way and the now vacant K-Mart parking lot area. From these areas the project site appears bounded by the auto-related businesses, vineyard uses, and the overhead transmission lines. Mount Diablo and its foothill ridgelines are partially visible in background views to the southwest as views are obscured by the existing development, transmission infrastructure, and vegetation.

South: The project site is visible from the south in views from westbound East 18th Street and northbound SR-160 including its off-ramp at East 18th Street. From the south views consist of the existing commercial development along East 18th Street and the associated roadway infrastructure. The project site appears bordered by the overhead transmission infrastructure, auto-related commercial businesses, and the vineyard uses. In elevated views from northbound SR-160, views to the northwest toward the project site consist of the existing commercial, industrial, and agricultural uses that contribute to the area's visual character.

West: The project site is visible from the west in views from eastbound East 18th Street and nearby residential streets such as, Phillips Lane. In these views, the project site appears bounded by the existing commercial development including the Markstein Sales Company, self-storage facility, and the K-Mart located along Drive-In Way and the ornamental vegetation. The elevated segment of SR-160 is visible in the background. Views further west from residential streets, like Wilson Street, consist of the commercial development surrounding the project site and industrial development located further north. Views of the undeveloped project site from these areas are partially obscured by the vineyards.

V:\1857\Active\185704284\03_data\gis_cad\gis\mxds\Fig_3.1-1_aesthetics.mxd Revised: 2018-10-29 By: KAEHINSON



Notes
1. Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
2. Service Layer Credits: Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

Photograph Location

Project Boundary

0 500 1,000 Feet

1:8,000 (At original document size of 8.5x11)

Stantec

Project Location
T. 02N R. 02E Section 21
USGS 7.5- minute Quadrangle:
Antioch North

Client/Project
City of Antioch
Acorn Business Park Project, Antioch, California
Initial Study/Mitigated Negative Declaration

Figure No.
3.1-1

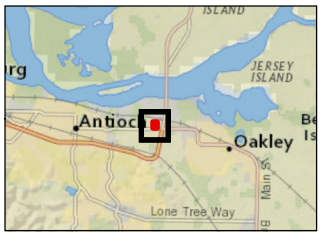
Title
Photograph Locations

This page left intentionally blank

V:\1857\Active\185704284\03_data\gis_cad\gis\mxds\Fig_3.1-2_aesthetics.mxd Revised: 2018-10-29 By: KAEJOHNSON

Photograph Location 1: Elevated view of the project site from the southbound lane of SR-160.

Photograph Location 2: View of the project site from the east in views from along North Drive-In Way.



Notes
1. Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
2. Service Layer Credits: Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

Stantec

Project Location
T. 02N R. 02E Section 21
USGS 7.5- minute Quadrangle:
Antioch North

Client/Project
City of Antioch
Acorn Business Park Project, Antioch, California
Initial Study/Mitigated Negative Declaration

Figure No.
3.1-2

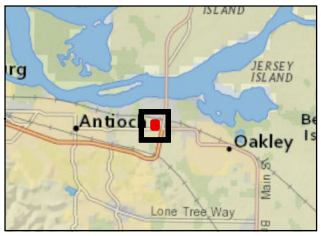
Title
Representative Photographs

This page left intentionally blank

V:\1857\Active\185704284\03_data\gis_cad\gis\mxds\Fig_3.1-2_aesthetics.mxd Revised: 2018-10-29 By: KAEJOHNSON

Photograph Location 3: View of the project site from the southeast along East 18th Street and near the SR-160 off-ramp.

Photograph Location 4: View of the project site from the southwest in views from along East 18th Street near Phillips Lane.



Notes
1. Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
2. Service Layer Credits: Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

Stantec

Project Location
T. 02N R. 02E Section 21
USGS 7.5- minute Quadrangle:
Antioch North

Client/Project
City of Antioch
Acorn Business Park Project, Antioch, California
Initial Study/Mitigated Negative Declaration

Figure No.
3.1-3

Title
Representative Photographs

This page left intentionally blank

3.1.2 Methodology

Analysis of the 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 in the visual character and quality of the affected environment; 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 and their activities and the extent to which these activities are related to the aesthetic qualities affected by the project.

3.1.3 Environmental Impact Analysis

This section discusses 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

There are no designated scenic vistas in the project vicinity. However, there are views toward Mount Diablo and its foothill ridgelines from locations near the project site, which the City identifies as important scenic resources (City of Antioch 2003). Views of Mount Diablo and its foothill ridgelines are visible from the northeast portion of the project site, in an area where viewers primarily consist of employee vehicles exiting from the Markstein Sales Company parking lot area. Existing views of Mount Diablo near this portion of the project site are already partially obscured by the surrounding urban development and utility transmission infrastructure. Furthermore, existing views of Mount Diablo are intermittent to vehicles as they are typically leaving the nearby area. Therefore, existing views of Mount Diablo from this area would not be substantially affected by development of the proposed project.

In addition, elevated views of Mount Diablo and its foothill ridgelines are intermittently visible to motorists driving southbound on SR-160. The proposed project would introduce a variety of structures including a potential hotel, commercial/retail, office, and self-storage facilities ranging from 8 feet to 65 feet tall. The height of proposed structures would not obstruct existing elevated views of Mount Diablo and its foothill ridgelines. The proposed project would appear to viewers on southbound SR-160 as part of the existing urban setting that is currently visible and would be consistent with existing land uses. Therefore, the proposed project would not have a substantial adverse effect on a scenic vista 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-2 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

Impact Analysis

The proposed project would not be visible from a state scenic highway. SR-160 is an eligible state scenic highway and has not been officially designated. The nearest state designated scenic highway is the segment of SR-160 located in Sacramento County. This segment of SR-160 is located over 1 mile from the project site; therefore, the project site is not visible to viewers on southbound SR-160. Further, the project site is undeveloped and does not contain vegetation, rock outcroppings, or historic buildings. As such, 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 Substantially degrade the existing visual character or quality of the site and its surroundings?

Impact Analysis

The project site is in an area that is characterized by various industrial, commercial, agricultural, and residential land uses. The proposed project would alter the existing visual character of the project site by developing the undeveloped parcel into a business park, which would include a variety of potential uses such as a hotel, office, commercial/retail, and self-storage facilities.

As discussed in Section 2.0 Project Description, the project site would be divided into three subsections: Subsection A, Subsection B, and Subsection C. Subsection A would include either two commercial buildings, each 16,800 square feet, or a 4-story hotel that would be approximately 43,195 square feet. Subsection B would include a self-storage facility of approximately 122,021 square feet that may be equipped with rooftop solar facilities. Subsection C would either include eight buildings, each 14,112 square feet with associated parking and a bioretention basin, or one building of approximately 71,800 square feet with associated parking. Pursuant to the development standards for this section of the project the building height would be limited to 70 feet. The introduction of these proposed structures would be consistent with the existing uses in the area, specifically with the existing commercial buildings and self-storage facilities located to the north, east, and west of the project site. The proposed structures would introduce structures that are similar in terms of height, mass, and scale. Therefore, the proposed project would appear as an extension of the existing commercial buildings and set within the urban setting, which is consistent with existing views from the surrounding land uses and the elevated portions of SR-160.

The proposed project would incorporate cohesive architectural styles, landscaping, and lighting to unite the structures proposed within each subsection and to be consistent with the surrounding development. The proposed project would be required to comply with the City's Business Park Design Guidelines and be subject to the City's design review process in accordance with Section 9-5.2607 of the City's Municipal Code. Compliance with the City's guidelines would ensure the design of the proposed structures within the entire project visually relate to one another and

complement the surrounding land uses. As such, the proposed project would not degrade the existing visual character or quality at the site or its surroundings, 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 is undeveloped and currently does not produce light or glare. Areas adjacent to the project site contain multiple sources of lighting that are typical of developed areas including exterior lighting on residential and commercial buildings, lighting associated with the power facilities north of the project site, parking lot lighting, street lighting, and vehicle headlights. Glare from adjacent land uses emanates from parked cars, passing cars, and windows on nearby buildings.

No construction work would be conducted at night, so no impacts associated with light and glare would result from construction. However, operation of the proposed project would introduce new light and glare sources. The proposed project would incorporate City standard freestanding street lighting along roadways, walkways, and parking areas. The proposed project would also incorporate lighting on the exterior of the buildings. Glass windows would create new sources of daytime glare and nighttime glow. Introduction of these sources may potentially degrade daytime and nighttime views. However, the proposed project would be required to comply with the lighting requirements in the City's Business Park Design Guidelines and AMC § 9-5.1715 and minimize light spillover onto adjacent properties. Therefore, building lighting would be shielded and would be designed to avoid light spillage onto adjacent properties. Further, all proposed lighting would be subject to the City's Design Review process to ensure light and glare would not affect day or nighttime views in the area. Regarding the potential solar photovoltaic panels on the self-storage facility, the solar photovoltaic panels would be black in color and absorptive rather than reflective. As such, impacts related to light and glare 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.

This page left intentionally blank

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

Agricultural uses consisting of hayfields, orchards, and vineyards are primarily found along the eastern edge of the City and can be found scattered throughout the more urban areas. The City does not include any lands that are zoned for agricultural or forestry production (City of Antioch 2017). The California Department of Conservation (DOC) Important Farmland map classifies land in the City as “Urban and Built- Up Land” or “Other Land,” which is defined as non-agricultural land surrounded by urban development (DOC 2016). The City does not contain any lands consisting of Prime Farmland or Farmland of Local or Statewide Importance or land enrolled in the Williamson Act contract (City of Antioch 2017).

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, DOC Important Farmland map, and Contra Costa County Agricultural Preserve map. The following impact discussions consider the effects of the proposed project related to agriculture and forestry resources in the city.

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 has not been used for agricultural production since at least 1990 and is classified as "Other Land" by the DOC Important Farmland map (DOC 2016). The project site is not zoned or designated by the General Plan for agricultural uses. The proposed project would not result in changing the zoning or general plan land use designation for agricultural use. As such, the proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance 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-2	**Conflict with existing zoning for agricultural use or a Williamson Act contract?**

Impact Analysis

The project site is not enrolled in a Williamson Act contract and is not designated or zoned for agricultural use (Contra Costa County 2017; City of Antioch 2018). Therefore, the proposed project would not conflict with existing zoning or with a Williamson Act contract. 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 is vacant and does not contain forestland (as defined in PRC Section 12220(g)), or timberland (as defined by PRC Section 4526). Furthermore, the project is not zoned Timberland Production (as defined by Government Code section 51104[g]. The project site is zoned for commercial development and would not be rezoned 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
There are no forestlands on or adjoining the project site, or within the general vicinity of the project site. As such, the proposed project would not result in the loss of forestland or the 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 does not contain lands with Prime Farmland, Unique Farmland, Farmland of State Importance, or Farmland of Local Importance, and is not enrolled in a Williamson Act contract. The project site is not zoned for forestland or timberland production and would not be rezoned for agricultural use. Therefore, the proposed project would not result in the conversion of farmland or forestland to a non-agricultural 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.

This page left intentionally blank

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)	Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☒	☐	☐
c)	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)?	☐	☐	☒	☐
d)	Expose Sensitive Receptors to substantial pollutant concentrations?	☐	☒	☐	☐
e)	Create objectionable odors 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 (PM), ground-level ozone, carbon monoxide (CO), sulfur oxides, nitrogen oxides, 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).

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 or 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 (CAAQS) 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 Standards	National Standards	
		Concentration	Primary	Secondary
Ozone	1 Hour	0.09 ppm (180 µg/m^3)	—	Same as Primary Standard
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (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	—	
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)	—

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
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)		

Notes:

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

mg/m^3 = milligrams per cubic meter

µg/m^3 = micrograms per cubic meter

Source: CARB 2016

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 PM_{10} standards, as well as national ozone and $PM_{2.5}$ standards, but are listed as unclassified under national PM_{10}. 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 & 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 nitrogen oxides (NOx)—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 fine particulate matter and toxic air contaminants (BAAQMD 2017a).

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	Nonattainment
Carbon Monoxide	Attainment	
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Attainment
Sulfates	Attainment	—
Lead	Attainment	Unclassified/Attainment

Criteria Pollutants	State Designation	National Designation
Hydrogen Sulfide	Unclassified	—
Visibility Reducing Particles	Unclassified	—

Source: BAAQMD 2017b

Bay Area Air Quality Management District

Nearly all development projects in the Bay Area have the potential to generate air pollutants that may increase the difficultly of attaining federal and state CAAQS. Therefore, for most projects, evaluation of air quality impacts is required to comply with CEQA. The BAAQMD has developed the CEQA Air Quality Guidelines to help public agencies evaluate air quality impacts. The BAAQMD's guide includes recommended thresholds of significance, including mass emission thresholds for construction-related and operational ozone precursors. The May 2017 version of the Guidelines includes revisions made to the Air District's 2010 Guidelines to address the California Supreme Court's 2015 opinion in *Cal. Bldg. Indus. Ass'n vs. Bay Area Air Quality Mgmt. Dist., 62 Cal.4th 369*. Table 3.3-3 provides a summary of the recommended thresholds.

Table 3.3-3 BAAQMD Project-Level Air Quality CEQA Thresholds of Significance

Criteria Pollutants	Construction-Related	Operational-Related	
Criteria Air Pollutants and Precursors (regional)	Average Daily Emissions (lb/day)	Average Daily Emissions (lb/day)	Maximum Annual Emissions (tpy)
ROG	54	54	10
NO_x	54	54	10
PM_{10} (exhaust)	82	82	15
$PM_{2.5}$ (exhaust)	54	54	10
$PM_{10}/PM_{2.5}$ (fugitive dust)	Best Management Practices	None	
Local CO	None	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	
GHGs (projects other than stationary sources)	None	Compliance with Qualified GHG Reduction Strategy OR 1,100 MT of CO_2e/yr. OR 4.6 MT CO_2e/SP/yr. (residents + employees)	

Notes:
lb/day = pounds per day
tpy = trips per year
GHG = greenhouse gases
MT CO_2e = metric tons of carbon dioxide equivalent per year
MT CO_2e/SP/yr. = metric tons of carbon dioxide equivalent per service population per year
Source: 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 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 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 (ATCM), 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 ATCM 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

a) 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.

Mobile Emissions

b) Require developers of large residential and non-residential projects to participate in programs and to take measures to improve traffic flow and/or reduce vehicle trips resulting in decreased vehicular emissions.

c) Budget for the purchase of clean fuel vehicles, including electrical and hybrid vehicles where appropriate, and if feasible, purchasing natural gas vehicles as diesel vehicles are replaced.

d) Support and facilitate employer-based trip reduction programs by recognizing such programs in environmental mitigation measures for traffic and air quality impacts where the ongoing implementation can be ensured, and their effectiveness can be monitored.

Stationary Sources

e) As part of the development review process for non-residential development, require the incorporation of best available technologies to mitigate air quality impacts.

f) 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. For detailed information on the assumptions please refer to Appendix A.

3.3.3 Environmental Impact Analysis

This section discusses potential impacts on 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, AIR-4, and AIR-5, the project would not create a localized violation of state or federal air quality standards, 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 Measure AIR-1. Therefore, the project is consistent with criterion 1 with incorporation of Mitigation Measure AIR-1, which would require all construction contractors to implement the basic construction mitigation measures recommended by the BAAQMD to reduce fugitive dust emissions.

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 gases) Pollutants

Of the 85 measures, only the transportation control measure TR2 Trip Reduction Program would apply to any future land use in the project site that has more than 50 employees

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. The proposed self-storage facility in Subsection B would be developed to include solar for the facility's energy use with the potential to upgrade to provide up to one megawatt of energy when economics become more feasible.

In summary, the project would comply with all applicable rules and regulations and the project would not impede attainment because its emissions fall below the BAAQMD regional significance thresholds. Table 3.3-4, Table 3.3-5, and Table 3-3-6 show that the project does not exceed the BAAMQD thresholds of significance for construction, daily operations, and annual operations respectively.

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 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 Measure AIR-1. As such, with the incorporation of this mitigation measure this 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:

a) all exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day;

b) all haul trucks transporting soil, sand, or other loose material off-site will be covered;

c) 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;

d) all vehicle speeds on unpaved roads will be limited to 15 mph;

e) 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; and

f) 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 CCR. Clear signage shall be provided for construction workers at all access points.

g) 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.

h) 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 BAAQMD's phone number will also be visible to ensure compliance with applicable regulations.

1

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

Impact AIR-2 Violate any air quality standard or contribute to an existing or projected air quality violation?

Impact Analysis
This impact relates to localized criteria pollutant impacts. Potential localized impacts would be exceedances of state or federal standards for particulate matter (PM10), or CO. PM10 are of concern during construction because of the potential to emit fugitive dust during earth-disturbing activities (construction fugitive dust). CO emissions are of concern during project operation because operational CO hotspots are related to increases in on-road vehicle congestion. Each pollutant is discussed separately below.

Construction Fugitive Dust

During construction (grading), fugitive dust (PM_{10}) 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.

Operational CO Hotspot

Localized high levels of CO (CO hotspot) are associated with traffic congestion and idling or slow-moving vehicles. The BAAQMD recommends a screening analysis to determine if a project has the potential to contribute to a CO hotspot. The screening criteria identify when site-specific CO dispersion modeling is necessary. The project would result in a less than significant impact to air quality for local CO if the following screening criteria are met:

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

A review of the 2017 Congestion Management Plan for Contra Cost County indicates that the project is consistent with the applicable congestion management plan. According to the Traffic Impact Study prepared for the project by Stantec Consulting Services, the project would generate approximately 295 net new trips during the a.m. peak hour and 368 net new trips during the p.m. peak hour and would not substantially increase traffic volumes on nearby roadways above 44,000 vehicles per hour. Furthermore, the adjacent roadways are not located in an area where vertical and/or horizontal mixing, or the free movement of the air mass, is substantially limited by physical barriers such as bridge overpasses or urban or natural canyon walls. Therefore, the project would not significantly contribute to an existing or projected CO hotspot. Impacts are less than significant.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures
Mitigation Measure AIR-1 is required. Refer to Impact AIR-1 for complete details pertaining to this mitigation measure.

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

Impact AIR-3	**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)?**

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 Emission

Emissions from construction-related activities are generally short-term in duration but may still cause adverse air quality impacts. The project would generate emissions from construction equipment exhaust, worker travel, and

fugitive dust. These construction emissions include criteria air pollutants from the operation of heavy construction equipment.

The only project component with a defined construction schedule is Subsection B, which would start construction in May 2019 and be completed by March 2020. The remaining subsections would be developed as market conditions dictate.

To provide a conservative estimate it was assumed that Subsections A and C would develop simultaneously beginning in June 2020 and be complete by August 2021.

The construction schedule utilized in the analysis represents a "worst-case" analysis scenario since emission factors for construction equipment decrease as the analysis year increases, due to improvements in technology and more stringent regulatory requirements. Therefore, construction emissions would decrease if the construction schedule moves to later years. The duration of construction activity and associated equipment represent a reasonable approximation of the expected construction fleet as require pursuant to CEQA guidelines.

Table 3.3-4 provides the construction emissions estimate for the proposed project. The construction emissions in each year are well below the recommended thresholds of significance. The project would implement MM AIR-1 as recommended by the BAAQMD. The emissions from construction would be less than significant.

Table 3.3-4 Annual Construction Emissions

Year	Units	ROG	NOx	PM_{10}	$PM_{2.5}$
2019 Subsection B	Total Emissions (tons/year)	0.29	2.81	0.14	0.13
2019 Subsection B	Total Emissions (lbs/year)	578.80	5,613	289.80	270.8
2019 Average Daily Emissions	*lbs/day*	*3.22*	*31.18*	*1.61*	*1.50*
2020 Subsection B	Total Emissions (tons/year)	0.69	0.48	0.03	0.13
2020 Subsections A and C	Total Emissions (tons/year)	0.29	2.00	0.33	0.12
2020	Total Emissions (tons/year)	0.98	2.48	0.36	0.25
2020	Total Emissions (lbs/year)	1,964.40	4,968	710.40	508
2020 Average Daily Emissions	*lbs/day*	*8.54*	*21.60*	*3.09*	*2.21*
2021 Subsections A and C	Total Emissions (tons/year)	1.04	2.00	0.08	0.07
2021 Subsections A and C	Total Emissions (lbs/year)	2,070	4,007.80	168.20	158
2021 Average Daily Emissions	*lbs/day*	*12.94*	*25.05*	*1.05*	*0.99*
BAAQMD Significance Threshold	lbs/day	54	54	82	54
Any year exceed significance threshold?		No	No	No	No

Year	Units	ROG	NOx	PM_{10}	$PM_{2.5}$
Significant Impact?		No	No	No	No

Source: CalEEMod Output (Appendix A)

Operational Emissions

As previously discussed, the pollutants of concern include ROG, NOx, PM_{10}, and $PM_{2.5}$. To provide the most conservative estimate, 2021 was used as the operational year for all subsections of the proposed project. The BAAQMD Criteria Air Pollutant Significance thresholds were used to determine impacts.

Operational emissions would occur over the lifetime of the proposed project and would be from two main sources: area sources and motor vehicles, or mobile sources. It was assumed that the entire project would be operational by 2021 to provide a conservative estimate of operational emissions. If a later buildout year were used, the emissions would be lower due to cleaner vehicles from increasing regulations. Therefore, using an earlier year to consider full buildout of the proposed project would provide a worst-case scenario of emissions. The operational emissions were modeled for summer and winter seasons. The results for winter were the highest and are presented in Table 3.3-5. The unmitigated daily operational emissions would be less than significant. The annual emissions are shown in Table 3.3-6. The annual emissions are also below the thresholds of significance; therefore, the impact is less than significant.

Table 3.3-5 Daily Operational Emissions

Emissions Source	Pounds per Day			
	ROG	NO_x	PM_{10}	$PM_{2.5}$
Area	6.80	<0.01	<0.01	<0.01
Energy	0.08	0.77	0.05	0.05
Mobile	5.50	24.66	15.88	4.35
Winter Total	*12.39*	*25.44*	*15.94*	*4.42*
Thresholds of Significance	**54**	**54**	**82**	**54**
Significant?	*No*	*No*	*No*	*No*

Notes:
ROG = reactive organic gases NO_x = nitrous oxides
PM_{10} = particulate matter 10 microns or less in diameter
$PM_{2.5}$ = particulate matter 2.5 microns or less in diameter
Source: CalEEMod Output (Appendix A)

Table 3.3-6 Annual Operational Emissions

Emissions Source	Tons per Year			
	ROG	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Area	1.24	<0.01	<0.01	<0.01
Energy	0.01	0.14	0.01	0.01
Mobile	1.02	4.41	2.79	0.77
Waste	0.00	0.00	0.00	0.00
Water	0.00	0.00	0.00	0.00
Annual Total	*2.28*	*4.55*	*2.80*	*0.78*
Thresholds of Significance	**10**	**10**	**15**	**10**
Significant?	*No*	*No*	*No*	*No*

Notes:
ROG = reactive organic gases NO_x = nitrous oxides
PM_{10} = particulate matter 10 microns or less in diameter
$PM_{2.5}$ = particulate matter 2.5 microns or less in diameter
Source: CalEEMod Output (Appendix A)

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 AIR-4 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_{10}), naturally occurring asbestos, construction-generated diesel particulate matter (DPM), operational related toxic air contaminants (TACs), or operational CO hotspots. 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. The project site itself is not considered a sensitive receptor.

The nearest existing sensitive receptors are the residential homes across East 18th Street near Phillips Lane (approximately 150 feet away). Additional residences are proposed across East 18th Street adjacent to Drive-In Way. Those proposed residences would also be approximately 150 feet away from the southern border of the project site.

Construction Emissions

Fugitive Dust PM_{10}

As discussed in Impact AIR-2, fugitive dust (PM_{10}) 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 project would implement Mitigation Measure AIR-1 requiring fugitive dust control measures that are consistent with BMPs established by the BAAQMD, to reduce the project's construction-generated fugitive dust impacts to a less than significant level.

Naturally Occurring Asbestos

Construction in areas of rock formations that contain naturally occurring asbestos could release asbestos in to the air and pose a health hazard. As described in the Regulatory Setting, BAAQMD enforces CARB's ATCMs at sites that contain ultramafic rock. The ATCM for Construction, Grading, Quarrying and Surface Mining Operations was 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 naturally occurring asbestos. A review of the map containing areas more likely to have rock formations containing naturally occurring asbestos in California indicates that there is no asbestos in the immediate project area (U.S. Geological Survey 2011). Therefore, it can be reasonably concluded that the project would not expose sensitive receptors to naturally occurring asbestos. Impacts would be less than significant.

Diesel Particulate Matter

Construction activities have the potential to generate DPM emissions related to the number and types of equipment typically associated with construction. Off-road, heavy-duty diesel equipment used for site grading, paving, and other construction activities result in the generation of DPM. However, construction would be temporary and would occur over a relatively short duration in comparison to the operational lifetime of the project. In addition, operation of construction equipment is regulated by federal, State, and local regulations, and would occur intermittently throughout the course of a day over the course of the construction so the likelihood that any one sensitive receptor would be exposed to high concentrations of DPM for any extended period of time would be low. Therefore, the potential health hazards resulting from construction-related DPM exposure would be less than significant.

Operational Emissions

Carbon Monoxide Hotspots

Traffic congestion and idling or slow-moving vehicles could create a potential CO hotspot. As discussed in Impact AIR-2, the project would generate a less than significant impact for operational CO.

Toxic Air Contaminant Emissions

Two scenarios have the potential for exposing sensitive receptors to TACs. The first is when a project includes a new or modified source of TACs and would be located near an existing or proposed sensitive receptor. The second

scenario involves a residential or other sensitive receptor development locating near an existing or planned source of TACs.

To address potential risk and hazard impacts, the BAAQMD has developed individual project and cumulative thresholds of significance for air toxics evaluations (BAAQMD 2017b). The individual project thresholds are as follows:

- An increased cancer risk level of more than 10 in 1 million
- An increased non-cancer (chronic or acute) hazard index greater than 1.0
- An incremental increase of greater than 0.3 µg/m^3 annual average $PM_{2.5}$

The cumulative thresholds are as follows:

- A cancer risk level of more than 100 in 1 million from all local sources
- A chronic non-cancer hazard index greater than 10.0 from all local sources
- An annual average $PM_{2.5}$ concentration greater than 0.8 µg/m^3 from all local sources

The project does not consist of the siting of a new sensitive receptors. Customers and employees are not considered sensitive receptors because visits to the work and commercial uses would be short term in duration (compared to residential occupancy) and episodic. However, the proposed project does include a potential hotel use, which some agencies consider to be residential in nature; therefore, a health risk screening was prepared to evaluate potential impacts from existing sources of TACs.

For project-level analysis, BAAQMD specifies both individual and cumulative-level thresholds of significance for risks and hazards. For projects that are considered new sources of TACs or $PM_{2.5}$ (such as stationary sources, industrial sources, or roadway projects), it is generally appropriate to use both the project-level and cumulative-level thresholds because the project-level threshold identifies said project's individual contribution to risk, while the cumulative threshold assesses said project's cumulative contribution to risk. However, for projects that consist of new receptors, it is generally appropriate to use only the cumulative-level threshold because the project itself is not a source of TACs and, thus, the individual project-level threshold is not relevant. The cumulative risk threshold accounts for all potential sources of TACs and $PM_{2.5}$ in proximity to new receptors. Because the proposed project is a planned commercial development with no identified uses considered a source of TACs, this analysis is focused to the cumulative impact of nearby sources of TACs to the project site. BAAQMD's recommended procedure involves first consulting with screening tools to identify whether there are any substantial TAC sources within 1,000 feet of the project's proposed hotel use. The results of the screening tools were as follows:

- There are two stationary sources of TACs located within 1,000 feet of the proposed hotel site: the Trinity Valero Enterprises at 3629 East 18th Street and the Fuhrer Paint Werks at 3257 East 18th Street. The BAAQMD Stationary Source Screening Analysis tool was used to estimate risks and hazards for those sources. Note that the BAAQMD Gasoline Dispensing Facility Multiplier Tool was used to refine the estimate from the Valero facility. The distance multiplier tools refine the screening values for cancer risk and chronic hazard index found in the District's Stationary Source Screening Analysis Tool to represent adjusted risk and hazard impacts that can be expected with farther distances from the source of emissions, the gasoline dispensing facility.
- The project site is bordered on the east side by SR-160. The BAAQMD has prepared a risk assessment for the roadway based on the level of anticipated traffic and distance to the nearest receptor. A 750-foot distance was used to determine the risks.
- The project is bordered by East 18th Street. The BAAQMD has prepared a risk assessment for East 18th Street east of SR-160 because it experiences higher levels of traffic. The risk assessment was applied to the project, which is adjacent to East 18th Street west of SR-160 and would experience less traffic. A distance of 50 feet from the roadway was used to estimate impacts.

Table 3.3-7 provides a summary of the cumulative screening health risk assessment.

Table 3.3-7 Screening Health Risk Assessment Cumulative Results

Source	Lifetime Cancer Risk (in a million)	Hazard Index	$PM_{2.5}$ Concentration ($\mu g/m^2$)
SR-160	1.091	0.00	0.006
East 18th Street	10.525	0.01	0.087
Trinity Valero Enterprises	0.734	0.001	-
Fuhrer Paint Werks	0.00	0.00	0.00
Total	12.35	0.011	0.093
Cumulative Threshold	100	10	0.80
Exceed Threshold?	No	No	No

The analysis showed the proposed project would not exceed the lifetime excess cancer risk, chronic hazard index, nor would it exceed the $PM_{2.5}$ concentration level. As such, it can be assumed future residents would not be subject to levels of TACs above screening levels. Therefore, impacts from TAC sources would be less than significant.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures
Mitigation Measure AIR-1 is required. Refer to Impact AIR-1 for complete details pertaining to this mitigation measure.

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

Impact AIR-5 Create objectionable odors affecting a substantial number of people?

Impact Analysis
As stated in the BAAQMD 2017 Air Quality Guidelines, odors are generally regarded as an annoyance rather than a health hazard and the ability to detect odors varies considerably among the populations and overall is subjective.

The BAAQMD does not have a recommended odor threshold for construction activities. However, BAAQMD recommends screening criteria that are based on distance between types of sources known to generate odor and the receptor. For projects within the screening distances, the BAAQMD has the following threshold for project operations:

- An odor source with five (5) or more confirmed complaints per year averaged over three years is considered to have a significant impact on receptors within the screening distance shown in the BAAQMD's guidance (see Table 3.3-3).

The BAAQMD's 2017 Air Quality Guidelines provide a table with odor screening distances recommended by BAAQMD for a variety of land uses. Projects that would site an odor source or a receptor farther than the applicable screening distance, shown in Table 3.3-8 below, would not likely result in a significant odor impact.

Table 3.3-8 Screening Levels for Potential Odor Sources

Odor Generator	Distance
Wastewater Treatment Facilities	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	2 miles
Transfer Station	1 mile
Compositing Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g., auto body shop)	1 mile
Rendering Plant	2 miles
Coffee Roaster	1 mile
Food Processing Facility	1 mile
Confined Animal Facility/Feed Lot/Dairy	1 mile
Green Waste and Recycling Operations	1 mile
Metal Smelting Plants	1 mile

Source: BAAQMD 2017b

Project Construction

Diesel exhaust and ROGs would be emitted during construction of the project, which are objectionable to some; however, emissions would disperse rapidly from the project site and therefore not create objectionable odors affecting a substantial number of people. As such, construction odor impacts would be less than significant.

Project 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. Cannabis cultivation is a use that could be permitted in the Business Park subject to further approvals by the City and may be a source of odors. Only indoor cannabis cultivation would be permitted and pursuant to City policies an odor study and odor mitigation plan would be required. This would reduce potential objectionable odors from cannabis cultivation.

Offsite land uses may impact employees and customers on the project site. The only odor source that may impact the project site is the Fuhrer Paint Werks autobody shop located approximately 300 feet west of the project site at 3257 East 18th Street. Public Records Request No. 2018-10-0286 was submitted to the BAAQMD on October 28, 2018, to determine if any complaints had been received in the last three years. The BAAQMD responded on November 1, 2018 that they had no records of complaints. Given the lack of complaints for this facility, the potential for odor impacts is less than significant.

The potential for the project to create objectionable odors affecting a substantial number of people during construction and operation would be considered 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.

This page left intentionally blank

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 project site is currently an undeveloped field located north of East 18th Street and east of Drive-In Way. The project site is frequently used by residents for off-road vehicle activities with the surrounding area consisting of residential and commercial development. Non-native, low-lying vegetation dominates the project site. The following sections describe the existing environmental setting, as reported in the Biological Resources Assessment prepared for this project (Appendix B-1).

Non-Native Ruderal Habitat

The project site consists of ruderal sandy substrate that supports non-native vegetation including: wild oats (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), Italian ryegrass (*Lolium multiflorum*), filaree (*Erodium botrys* and *Erodium cicutarium*), small fescue (*Vulpia microstachys*), hare barley (*Horduem murinum*), and

perennial ryegrass (*Lolium perenne*). Frequent use of the project site by off-road vehicles has also diminished the quality of the habitat present on-site.

Wildlife Movement Corridors

The project site is highly disturbed and does not contain any trees, sensitive native vegetation, or water features that would be conducive to wildlife movement. Additionally, the project site is located within a heavily urbanized area that does not provide suitable, connected habitats to function as a wildlife corridor.

3.4.2 Methodology

Touré Environmental Engineering conducted a Biological Resources Assessment within the entire 19.75-acre project site on June 10, 2018. The results of this assessment are documented in Appendix B-1 and include a table of species observed within the project site.

In addition to the Biological Resources Assessment, Stantec also evaluated the following resources to determine the potential for the project to impact biological resources:

i. California Department of Fish and Wildlife (CDFW) RareFind 5 and Biogeographic Information and Observation System California Natural Diversity Database (CNDDB) (CDFW 2018a);
ii. U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (USFWS 2018);
iii. Aerial photographs and topographic maps of the project site and surrounding area.

A list of special-status species with potential to occur in the project site was compiled by performing a CNDDB query for the U.S. Geological Survey (USGS) quadrangle containing the project site (Antioch South) and the 8 surrounding quadrangles (Antioch North, Clayton, Honker Bay, Denverton, Birds Landing, Rio Vista, Jersey Island, and Brentwood) and reviewing species data provided by the USFWS. The following sections describe the potential for special-status species to occur within the project site.

Special-Status Plants

Special-status plant species are defined in accordance with the CEQA Guidelines, Section 15380, and the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018b), and includes species that are:

i. Federally or State-listed, or proposed for listing, as rare, threatened or endangered (CDFW 2018c);
ii. Special Plant as defined by the CNDDB (CDFW 2018c); or
iii. Listed by the California Native Plant Society in the online version of its Inventory of Rare and Endangered Plants of California as California Rare Plant Rank List 1 through 4 (CDFW 2018c).

The CNDDB query returned a list of 144 species or habitats which included 66 special-status plant species (CDFW 2018a). The USFWS data called out an additional two species: Colusa grass (*Neostapfia colusana*) and soft bird's beak (*Cordylanthus mollis* ssp. *mollis*) (USFWS 2018). The Biological Resources Assessment considered the distances of mapped sensitive plant occurrences from the project site and the conditions on-site to determine that the project site does not contain suitable habitat for special-status plant species (Appendix B-1).

Special-Status Wildlife

Special-status wildlife species are defined in accordance with the CEQA Guidelines, Section 15380, and included species that are:

i. Listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act;
ii. Listed or candidates for listing as threatened or endangered under the California Endangered Species Act;
iii. Designated as Species of Special Concern by the CDFW;
iv. Included on the CDFW "Special Animals" list (CDFW 2018d); or otherwise meet the definition of rare, threatened, or endangered, as described in the CEQA Guidelines, Section 15380.

The CNDDB search performed as part of the Biological Resources Assessment returned a list of 72 wildlife species and the USFWS data included one additional species (valley elderberry longhorn beetle [*Desmocerus californicus*]). Of these 73 species, 46 species can be considered special-status species. The Biological Resources Assessment analyzed the potential for 11 of these species to occur within the project site and determined that Swainson's hawk (*Buteo swainsoni*) had a moderate potential to occur based on the site's marginal capacity to provide foraging habitat (Appendix B-1). The other remaining 35 species were analyzed for their potential to occur as part of this ISMND and are listed in Appendix B-2. Of the 35 species, only 2 additional species (white-tailed kite [*Elanus leucurus*] and loggerhead shrike [*Lanius ludovicianus*]) were found to have a moderate potential to also occur based on the site's marginal capacity to provide foraging habitat.

Thus, only three species (Swainson's hawk, white-tailed kite, and loggerhead shrike) have been found to have moderate potential to occur and use the project site as foraging habitat. Details of these species are discussed further below.

Swainson's hawk is protected under the Migratory Bird Treaty Act (MBTA) and is listed as Threatened by the State. Swainson's hawk are present in California during the breeding season (March through September) and winter in South America and Mexico. The species breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, agricultural and ranch land, and fallow fields. Foraging typically occurs in grasslands, or alfalfa or grain fields that support rodent populations (Bechard et al. 2010). During the on-site survey, a single Swainson's hawk was observed foraging overhead near the project site but not within the project site. The project site consists of ruderal vegetation that has potential to contain rodent populations and provide marginal foraging habitat for this species. The project site contains no trees and thus, potential Swainson's hawk nesting locations. Other trees in the vicinity are small or sparse and unlikely to be used for nesting.

White-tailed kite is protected under the MBTA and is a California Fully Protected species. White-tailed kite is a yearlong resident in coastal and valley lowlands in California and is usually associated with agricultural land. This species typically breeds from February to October and places stick nests near the top of dense tree stands, such as oak or willow (Dunk 1995). The Biological Resources Assessment did not analyze this species; however, there are four occurrences of white-tailed kite nesting within five miles of the project site and this species has potential to be present in the project vicinity. Based on the conditions discussed in the report there is potential for the project site to support prey for this species and provide marginal foraging habitat. The project site does not contain trees or other potential nesting sites.

Loggerhead shrike is protected under the MBTA and is a California Species of Special Concern. The loggerhead shrike can be found throughout California except for the northwest region, heavily forested higher elevation mountains, and higher elevation portions of deserts. The species typically breeds from February to July and migrates from September through November. Nest sites tend be chosen based on degree of cover, and trees with thorns are

preferred; brush piles, tumbleweeds, or hardwood debris are used when trees or shrubs are not available (Yosef 1996). The Biological Resources Assessment did not analyze this species. However, there is an occurrence of loggerhead shrike within five miles of the miles of the project site and based on the conditions discussed in the report there is potential for the project site to support prey for this species and provide marginal foraging habitat for this species. The project site does not contain trees or other potential nesting sites. Additionally, the species favors fence lines and utility lines and poles for perching, and these can be found along the edges of the project site.

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

The project site does not contain habitat suitable for special-status plants (Appendix B-1). Therefore, no special-status plant species would be expected to occur within the project site.

Special-Status Wildlife Species

During the biological field survey of the project site on June 10, 2018, no special-status wildlife species were identified on-site (Appendix B-1). However, a single Swainson's hawk was observed foraging overhead near the project site but not within or above. The project site consists of ruderal vegetation that could provide marginal potential foraging habitat for Swainson's hawk, white-tailed kite, and loggerhead shrike. Construction of the project has the potential to impact individuals of these species by clearing of on-site vegetation and reducing the amount of on-site foraging space. However, the project site and vicinity are not prime habitat since it contains no trees or potential nesting locations and would provide only marginal foraging habitat for these three species. Therefore, individuals from these species would only be minimally impacted by construction activities. There is also potential for ground nesting bird species protected by the MBTA to be present on-site. Implementation of Mitigation Measure BIO-1: Avoid Disturbance of Nesting Birds would reduce potential impacts to nesting birds. With the implementation of Mitigation Measure BIO-1, the project would have a less than significant impact.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures

MM BIO-1 **Avoid Disturbance of Nesting Birds.** If project activities occur during the nesting season for native birds (February 1 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 MBTA and California Fish and Game Code will be conducted by a qualified biologist within a 250-foot radius of proposed construction activities for passerines and a 500-foot radius for raptors no more than two weeks prior to the start of

construction activities.

If active nests are found a qualified biologist shall determine the size of the buffer based on the nesting species and its sensitivity to disturbance (i.e. a buffer measuring from 50 to 100 feet for passerine species and a buffer of 300 feet for raptor species). These 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 disturb nesting birds. Active nest sites shall be monitored periodically to determine time of fledging.

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 riparian habitat or any other sensitive natural communities identified within a local or regional plan, policy, and regulation, or by CDFW and USFWS. Therefore, the project would have no impact to sensitive habitats.

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 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?**

Impact Analysis
The project site does not contain any water features including any that could be considered jurisdictional. Therefore, no impact to water features would occur.

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

Wildlife movement corridors are important habitats that allow wildlife to travel, migrate, or disperse between significant habitats (Harris and Gallagher 1989). Wildlife movement corridors have been recognized by federal agencies such as the USFWS and by the State of California as important habitats worthy of conservation. In general, movement corridors consist of areas of undisturbed land cover that connects larger, contiguous habitats. These corridors are mapped by CDFW Biogeographic Information and Observation System and the project site did not contain any mapped features (CDFW 2018a). Additionally, the project site is located within a heavily urbanized area and does not contain trees, sensitive native vegetation, or water features that would be conducive to wildlife movement (Appendix C-1). Therefore, the project would have no impact to wildlife corridors.

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 project does not conflict with any local policy or ordinance protecting biological resources. The project site does not contain any trees and thus does not conflict with the City's mature, indigenous, or landmark/heritage tree removal requirements. Therefore, the project would have no impact to biological resources protected by local policies or ordinances.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No 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 project site is located within the boundary of the East Contra Costa County Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP); however, the City of Antioch is not a participating city under

the HCP/NCCP. The permit area for the HCP/NCCP excludes areas within the urban limit lines of the City of Antioch from participating in the HCP/NCCP. Therefore, all urban development within the City is not covered by the HCP/NCCP (East Contra Costa County Habitat Conservancy 2006). The only other HCP in the vicinity is the PG&E Bay Area HCP, which includes all of Contra Costa County. As this project does not include coordination with PG&E, the project site would not be covered by the PG&E Bay Area HCP.

Additionally, the project would not have any off-site impacts that could interfere with implementation of either of the HCP/NCCP's goals, objectives, or protection measures. Therefore, the project would have no impact to any HCPs or NCCPs.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

This page left intentionally blank.

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

Natural Setting

The project site is located on the western edge of the Central Valley delta and eastside stream region, within California's Coastal Ranges Geomorphic Province, which consists of northwest trending mountain ranges and valleys extending from beyond the northern California border to the Transverse Ranges in Southern California. The uplifted, terraced, and wave-cut Pacific Coast defines the western edge of the Province, while the Great Valley, characterized by rock beneath deep alluvial deposits (USGS 2018a), forms the eastern boundary. The Coast Ranges' underlying rocks are of the Late Jurassic to Cretaceous Age Franciscan Complex, which has led to the formation of the irregular topography seen in the region (Schoenherr 1992).

Cultural Resources

The General Plan EIR (2003), indicates that the City is home to a variety of historic-period cultural resources, ranging from landmark commercial buildings to Victorian, Craftsman, and Modern-style homes and to churches, schools, and civic buildings. There are 20 historical archaeological sites recorded within the City. Additionally, 56 of Antioch's historic-era buildings, and 4 monuments, are listed on national, state, and local registers of historic properties and landmarks.

3.5.2 Methodology

To determine the presence of cultural resources within the project location and vicinity, an assessment of the project site was conducted that included the project location and areas within one-quarter mile. A records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System, Native American outreach, a buried site sensitivity analysis, and a pedestrian field survey, were conducted for this project. The records search and cultural resources survey were completed in accordance with the CEQA guidelines by: 1) identifying all cultural resources within the project site; 2) offering a significance evaluation of the identified cultural resources; 3) assessing resource vulnerability to effects that could arise from project activities; and 4) offering suggestions designed to protect resource integrity, as warranted. Appendix C-1 provides the technical reports that include detailed discussion of the methods used to identify cultural resources and the findings of the records search and surveys. Additional City of Antioch History is provided in Appendix C-2.

3.5.2.1 Records Search and Literature Review

On October 5, 2018, a records search was performed at the NWIC (NWIC File No. 18-0692) of the California Historical Resources Information System located in Rohnert Park, California. As an affiliate of the State of California Office of Historic Preservation, the NWIC is the official state repository of cultural resource records and reports for the region that includes Contra Costa County. The search included the entire project site as well as a one-quarter-mile buffer around it. The following inventories were reviewed:

i. California Inventory of Historic Resources (California Department of Parks and Recreation).
ii. California Historical Landmarks (California Office of Historic Preservation).
iii. California Points of Historical Interest.
iv. Directory of Properties in the Historic Property Data File (California Office of Historic Preservation).

The records search results indicate that 10 cultural resources studies have been conducted within one-quarter mile of the project site, there are no previously recorded cultural resources within the project site, and one cultural resource is located within one-quarter mile of the project site. The one resource identified within one-quarter mile of the project is the historic-era Atchison, Topeka, and Santa Fe Railroad (San Francisco & San Joaquin Valley Railroad) (P-07-000806). This resource has not been evaluated for inclusion on the NRHP and the CRHR; however, it was recommended as ineligible for both (Smallwood 2004).

The results of the NWIC records search are confidential and not for public distribution. Therefore, the full records search results are not included in this document.

Historic Review

A variety of historical maps were consulted for the project site. According to historic aerials and topographic maps the project site was depicted as vacant land prior to 1949 (Nationwide Environmental Title Research [NETR] 1949) and then as agricultural fields from 1953 to 1978 (USGS Antioch North 1953 and 1978; USGS Pittsburgh 1953). From 1979 to today the project site has remained undeveloped (NETR 1979, 1987, 1993, 2002, 2005, 2009, 2010, 2012, 2014, and 2018).

Field Survey

A pedestrian field survey was conducted on October 11, 2018. The survey covered the entire project area, a vacant parcel that had been recently cleared of vegetation. The survey was conducted in north to south transects spaced 15 meters apart. Surface visibility was excellent, ranging from 95 to 100 percent (Appendix C-1). All areas of projected ground disturbance were surveyed. No prehistoric or historic resources were identified within the project site.

Buried Site Sensitivity

The records search did not identify previously recorded cultural resources within the project site. Additionally, the current pedestrian surface survey did not identify any new resources within the project site. Soils across most of the site are Delhi sand. The soils are somewhat excessively drained. They are found on flood plains, terraces, and alluvial fans with slopes of 2–9 percent (USDA 2018). Additionally, the geological landform within the project site consists of Quaternary sand deposits, unit 2 (inland) (California Department of Conservation [DOC] 2010, USDA 2018). However, based on the distance to a perennial water source there is a moderate potential to encounter buried resources due to the distance to traverse for fresh water.

3.5.3 Environmental Impact Setting

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

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

Impact Analysis

The archival research and the NWIC records search performed as part of the cultural resource analysis indicated that there are no known resources within the project area. However, subsurface construction activities such as trenching, bore and jacking, and grading associated with the proposed project have the potential to damage or destroy previously undiscovered cultural resources, however, given that the site has previously been leveled it is less likely that this would occur. Nevertheless, Mitigation Measure CUL-1 is proposed to implement inadvertent discovery procedures to reduce potential impacts to previously undiscovered subsurface historical resources, and Mitigation Measure CUL-2 is proposed to ensure that construction personnel are aware of the procedures to follow in the event that cultural resources are identified. With the implementation of Mitigation Measure CUL-1 and Mitigation Measure CUL-2, potential impacts would be reduced to a level of less than significant.

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 historical resource shall cease until an 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.

MM CUL-2 **Worker Awareness Training.** Prior to the start of any ground disturbance, all field personnel shall receive worker's environmental awareness training on cultural resources. The training, which may be conducted with other environmental or safety trainings, will provide a description of cultural resources that may be encountered during construction and outline the steps to follow in the event that a discovery is made.

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

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

Impact Analysis
The archival research and the NWIC records search performed as part of the cultural resources analysis indicated that there are no known resources within the project area. However, subsurface construction activities such as trenching, bore and jacking, and grading associated with the proposed project could potentially damage or destroy previously undiscovered cultural resources. Therefore, Mitigation Measure CUL-1 is proposed requiring implementation of standard inadvertent discovery procedures to reduce potential impacts to previously undiscovered subsurface historical resources, and Mitigation Measure CUL-2 is proposed to ensure that construction personnel would be aware of the procedures to follow in the event that potential cultural resources are identified. With the implementation of Mitigation Measure CUL-1 and Mitigation Measure CUL-2, potential impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures
Mitigation Measures CUL-1 and Mitigation Measure CUL-2 are required.

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

Impact CUL-3 Disturb any human remains, including those interred outside of formal 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 such as trenching and grading associated with the proposed project could potentially disturb previously undiscovered human burial sites. Therefore, Mitigation Measure CUL-3 would be implemented to 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-3 **Human Remains Discovered 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 Native American Heritage Commission (NAHC) within 24 hours, and the NAHC shall identify the person or persons it believes to be the "most likely descendant" (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work, 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

This page left intentionally blank

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 (PG&E) provides electricity and natural gas service to the City of Antioch. The City is located within PG&E's Delta Distribution Planning Area (DPA), which covers the eastern portion of Contra Costa County from Bay Point to Discovery Bay. Electricity distribution facilities are located throughout the DPA, with no one set of facilities dedicated to serving the City. On October 31, 2008, PG&E completed construction of a new distribution substation in Antioch, located approximately 4 miles south of the East 18th Street and Drive-In Way. The Antioch substation improves the reliability and safety of electric services to southern Antioch.

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 three 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, 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.

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). Short-term construction and long-term energy consumption are discussed below.

Short-Term Construction

Off-Road Equipment

The proposed project is anticipated to be constructed in multiples phases with the first Subsection B breaking ground as early as May 2019 and be completed by March 2020. Subsections A and C would be constructed as market conditions dictate, but they were conservatively estimated to begin construction in June 2020 and to be completed by August 2021. Table 3.6-1 provides estimates of the proposed project's construction fuel consumption from off-road construction equipment.

Table 3.6-1 Construction Off-Road Fuel Consumption

Project Component	Phase	Fuel Consumption (gallons)
Subsection B	Site Preparation	35,053
	Site Grading	77,821
	Building Construction	324,230
	Paving	40,609
	Architectural Coating	4,302
	Subtotal Fuel Consumption	*482,016*
Subsections A and C	Site Preparation	26,964
	Site Grading	132,317
	Building Construction	531,525
	Paving	32,487
	Architectural Coating	3,442
	Subtotal Fuel Consumption	*726,735*
Total Construction Fuel Consumption		**1,208,751**

Source: Stantec Consulting Services Inc. 2019

As shown in Table 3.6-1, construction activities associated with the proposed project would be estimated to consume 1,208,751 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. Furthermore, proposed idling restrictions adopted to reduce potential air quality impacts would have the co-benefit of reducing fuel consumption. A conservative estimate would assume a five percent reduction in fuel use through idling restrictions.

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)
Subsection B	11,485
Subsections A and C	38,792
Total Construction On-Road Fuel Consumption	**50,277**

Source: Stantec Consulting Services Inc. 2019

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.

Table 3.6-3 Long-Term Operational Vehicle Fuel Consumption

Vehicle Type	Percent of Vehicle Trips	Daily VMT	Annual VMT	Average Fuel Economy (miles/gallon)[1]	Total Daily Fuel Consumption (gallons)	Total Annual Fuel Consumption (gallons)
Passenger Cars	58.2	11,811	4,310,885	34.2	345	126,049
Light Trucks	34.9	7,069	2,580,314	26.2	270	94.485
Light-Heavy to Heavy-Heavy Diesel Trucks	5.7	1,150	419,585	6.1	188	68,784
Other	0.7	143	52,060	6.1	23	8,534
Motorcycles	0.5	111	40,377	50	2	808
Total	100%	20,283	7,403,229	-	829	302,661

Notes:
Percent of Vehicle Trips and VMT provided by CalEEMod.
Average fuel economy is provided by United States Department of Transportation, Bureau of Transportation Statistics and reflects fuel economy of overall fleet, not just new vehicles.
"Other" consists of buses and motor homes.
Source: Stantec Consulting Services Inc. 2019

As shown above, daily vehicular fuel consumption is estimated to be 174 gallons of both gasoline and diesel fuel. Annual consumption is estimated at 302,661 gallons.

In terms of land use planning decisions, the proposed project would constitute development within an established community and would not be opening up 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 VMT. For these reasons, it would be expected that vehicular fuel consumption

[1] As of December 2014, NHTSA indicated that the fuel economy of passenger vehicles averaged 34.2 miles per gallon and light trucks averaged 26.2 miles per gallon.

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.

Building Energy Demand

As shown in Tables 3.6-4 and 3.6-5, the proposed project is estimated to demand 2,702 kilowatt-hours (KWhr) of electricity and 2,887 100-British Thermal Units (KBTU) of natural gas, respectively, on an annual basis.

Table 3.6-4 Long-Term Electricity Usage

Land Use	Size (ksf)	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)
Office Park	112.9	7.28	8.40	3.87	19.55	2,207
Warehouse	122.02	0.32	1.07	2.14	3.4	415
Retail	33.6	2.76	2.68	5.25	2.37	80
Total						**2,702**

Notes:
The proposed project could potentially include a variety of uses consistent with the development standards, however the land use selections above were based on estimating the "worst-case" scenario demand for electiricy
ksf = 1,000 square feet
KWhr= kilowatt hour
Source: Stantec Consulting Services Inc. 2019

Table 3.6-5 Long-Term Natural Usage

Land Use	Dwelling Units	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)
Office Park	112.9	21.04	0.08	21.12	2,384
Warehouse	122.02	3.4	0.07	3.47	423
Retail	33.6	2.37	0	2.37	80
Total					**2,887**

Notes:
The proposed project could potentially include a variety of uses consistent with the development standards, however the land use selections above were based on estimating the "worst-case" scenario demand for electiricy
ksf = 1,000 square feet
KBTU= 1,000 British Thermal Units
Source: Stantec Consulting Services Inc. 2019

3.6.3 Environmental Impact Analysis

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

Impact ENERGY-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 and are discussed separately below.

Construction Energy Demand

As summarized in Table 3.6-1 and Table 3.6-2, the proposed project will require 1,208,751 gallons of diesel fuel for construction off-road equipment and 50,277 gallons of gasoline for on-road vehicles during construction. The proposed project has incorporated idling restrictions to reduce fuel usage. This feature would serve to reduce the amount of fuel consumed by the project.

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. Furthermore, the proposed project will be implementing idling restrictions and encouraging construction workers to carpool to the work site. 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.

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. In addition, the City's General Plan and Climate Action Plan include policies and programs that seek to reduce energy consumption.

The proposed project is estimated to demand 2,700 KWhr of electricity per year and 2,887 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 2016 CALGreen and Title 24 would increase energy efficiency and reduce energy demand in comparison to existing commercial structures, and therefore reduces 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 business park development. Compliance with future building code standard would result in increased energy efficiency.

Furthermore, the applicant is considering developing rooftop solar on top of the self-storage buildings when the economics are feasible. In the near-term, the proposed project would develop a 30 kilowatt (kW) facility to offset the electrical load of the self-storage facility.

Based on the above information, the proposed project would not result in the inefficient or wasteful consumption of electricity or natural gas.

Transportation Energy Demands

The daily vehicular fuel consumption is estimated to be 829 gallons of both gasoline fuel. Annual consumption is estimated at 302,661 gallons.

The proposed project would constitute development within an established community and would not be opening up 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 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.

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 ENERGY-2 Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Impact Analysis
The City's General Plan includes an Energy Objective 10.8.1 to reduce the reliance on nonrenewable energy sources in existing and new commercial, industrial, and public structures through implementation of energy resource policies to encourage the use of renewable energy and decrease energy demand. Additionally, General Plan Objective 7.4.1 includes the Non-Motorized Transportation Objective to maintain a safe, convenient, and continuous network of pedestrian sidewalks, pathways, and bicycle facilities to facilitate bicycling and walking as alternatives to the automobile. The City's Climate Action Plan also includes strategies focused on green building, renewable energy, transportation and land use, education and waste management.

The proposed project would not conflict with the energy objectives of the General Plan nor the strategies in its Climate Action Plan. The proposed project would constitute development within an established community and would not be opening up 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 VMT. The proposed project would not impeded the City's bicycle and pedestrian network; the proposed project would include on-site and off-site improvements of pedestrian infrastructure (sidewalks) and would provide bicycle parking in accordance with the City's Municipal Code. Lastly, the applicant is considering developing rooftop solar on top of the self-storage buildings when the economics are feasible, however, in the near-term, the proposed project would develop a 30 kilowatt (kW) facility to offset the electrical load of the self-storage facility.

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. The impact is 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.

This page left intentionally blank

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:	☐	☒	☐	☐
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?	☐	☒	☐	☐
Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐
Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on strata 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, creating substantial 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

Antioch is in eastern 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 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 2003). 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 2003).

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 2003). 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 2003). 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 2003). 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.

As shown in Figure 4.5-4 in the General Plan, liquefaction potential in the Lowland Area ranges from low to high and there is very low potential for liquefaction in the Upland Area (City of Antioch 2003). In addition, landslide hazards primarily exist in the Upland Area in the southwestern part of the City. The Lowland Area is not prone to landslides and consists of generally stable slopes (City of Antioch 2003).

3.7.1.1 Paleontological Setting

To determine the potential for paleontological resources within the project area, geologic units from maps of the area were analyzed for their potential paleontological sensitivity based on existing literature and known locations of paleontological resources. The paleontological database at the University of California, Berkeley's Museum of Paleontology was consulted, and guidance from the Society of Vertebrate Paleontology (SVP) guidelines was followed while conducting the paleontological review.

Society of Vertebrate Paleontology's Guidance for Assessing the Paleontological Potential of Rock Units

The SVP have identified two phases for identification of potential for paleontological resources: 1) assess the potential that nonrenewable paleontological resources could be directly or indirectly impacted or destroyed by the proposed project activities, and 2) generate and implement measures to mitigate any potential impacts from proposed project activities.

The SVP classifies the potential for paleontological resources within rock units as units having high, undetermined, low, or no potential for containing paleontological resources.

High potential is characterized as "rock units from which vertebrate or significant invertebrate, plant or trace fossils have been recovered, including but not limited to sedimentary formations, some volcaniclastic formations, some low-grade metamorphic rocks which contain significant paleontological resources anywhere within their geographical extent, sedimentary rock units temporally or lithologically suitable for the preservation of fossils, rock units which contain potentially datable organic remains older than late Holocene, and rock units which may contain new vertebrate deposits, traces, or trackways" (SVP 2010).

The SVP classifies underdetermined potential as "rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment" (SVP 2010). Low potential is described as "poorly represented by fossil specimens in institutional collections, or where fossils are only preserved in rare circumstances" (SVP 2010). Rock units with no potential to contain paleontological resources include high-grade metamorphic rock (gneisses, schists) and plutonic igneous rocks (granites, diorite) (SVP 2010).

Known Resources

The paleontological database at the University of California, Berkeley's Museum of Paleontology (2018), soil data from the USDA Natural Resources Conservation Service Web Soil Survey (USDA 2018), the Geologic Map of California (CDC 2010), and the local 1:250,000 geology map (Wagner et al. 1981) were reviewed to determine the potential for paleontological resources within the project site. The project site is located on the western margin of the Sacramento Valley, which is underlain by rock types Qs (CDC 2010). Rock type Qs is classified as being between Pleistocene and Holocene age and is composed of marine sedimentary rocks, and is overlain by alluvium, lake, playa, and terrace deposits. The 1:250,000 geological map for the area (Wagner et al. 1981) indicates mainly Quaternary alluvium and marine sand within the project site.

3.7.1 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the General Plan, General Plan EIR, and United States Department of Agriculture Natural Resources Conservation Service soil reports. The following impact discussions consider the effects of the proposed project related to geology and soils in the City.

A search of the University of California Museum of Paleontology (UCMP 2018) database for mammal fossils did not identify any paleontological resources within the project site. The closest vertebrate fossil sites to the project include an assemblage located approximately 10.52 miles southwest in Concord, within Eocene marine rocks (Paleocene to Oligocene) Formation and an assemblage approximately 11.8 miles to the west in Bay Point, within Eocene marine rocks (Paleocene to Oligocene) Formation (UCMP 2018).

Soils within the project site contain strata known to have a low geologically sensitive for the presence of paleontological resources (e.g., Quaternary sediments); additionally, no mammal fossils have been recovered from or near the project site. Therefore, the project site possesses a low potential for significant paleontological resources.

3.7.2 Environmental Impact Analysis

This section discusses potential impacts on 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

Surface rupture is associated with being located close to an active fault. There are no faults subject to the

Alquist-Priolo Earthquake Fault Zoning Act in the city (City of Antioch 2003). The nearest Alquist-Priolo Earthquake Fault Zones are the Concord-Green Valley Fault, located 15 miles southwest of the project site, and the Marsh Creek-Greenville Fault, located approximately 10 miles southwest of the project site. 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 no impact would occur.

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. 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 southwest of the project site (USGS 2017). 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 City's Municipal Code and General Plan Policies 11.3.2-a and 11.3.2-k, which require new development to prepare site-specific soil reports and incorporate the recommendations and findings of these reports into the project's engineering and geotechnical analysis (City of Antioch 2017; 2003). 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. Liquefaction

According to Figure 4.5.4 in the General Plan, the potential for liquefaction to occur on the project site is moderate (City of Antioch 2003). Soils at the project consist of Delhi sand, which is characterized as excessively drained soil with low shrink-swell potential and has moderate potential for liquefaction (USDA 2018). 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 and 11.3.2-k, which requires site-specific soil reports to be prepared for all new developments in the City (City of Antioch 2017; 2003). 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 liquefaction would be less than significant with Mitigation Measure GEO-1 incorporated.

iv. Landslides

The topography of the project site and the surrounding area are flat, and in an area where slopes are considered very stable (City of Antioch 2003). Therefore, the potential for a landslide to occur is low. No impact would occur.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM GEO-1 **Implement Geotechnical Report Design Measures.** Prior to issuance of grading permits, the applicant shall incorporate all design specifications and recommendations contained within the site-specific soils report into relevant project plans and specifications. These specifications shall pertain

to, but are not limited to, building foundations, backfill of excavations, and grading activities. The project site plans shall be submitted to the City and shall be reviewed during the building permit process.

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
Project construction activities would involve the removal of vegetation, grading, and excavation of soils on approximately 19.75 acres. 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 BMPs to control the discharge of sediment and other pollutants during construction. The proposed project would implement a SWPPP and associated BMPs as part of Mitigation Measure HYD-1 (as described in Section 3.9, Hydrology and Water Quality) to reduce potential erosion impacts. Therefore, soil erosion impacts associated with construction impacts would be less than significant with Mitigation Measure HYD-1.

The proposed project would create approximately 682,208 square feet of new impervious surface. New development projects in the City that create or replace 10,000 square feet or more of impervious surface are required to comply with the Contra Costa County C.3 Stormwater Standards per the Municipal Regional Permit issued by the San Francisco Regional Water Quality Control Board. The City has adopted the C.3 Stormwater Standards as part of its Municipal Code (Chapter 9) to minimize potential post-construction erosion impacts. In accordance with the C.3 Stormwater Standards, the applicant has prepared a Stormwater Control Plan (Appendix D). The Stormwater Control Plan identifies source control measures that would be implemented during operation of the proposed project. Therefore, soil erosion impacts during operation of the proposed project would be less than significant.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures
Mitigation Measure HYD-1 is required. Refer to Section 3.9, Hydrology and Water Quality, for complete details pertaining to the mitigation measure.

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

Impact GEO-3 Be located on strata 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?

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 2003). 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 2003, USGS 2018). Furthermore, the project site is not adjacent to a stream bank, levee, or other open face that would be susceptible to lateral spreading.

The project site consists of Delhi Sand, which is an excessively drained soil with low shrink-swell potential and has moderate potential for liquefaction (USDA 2018). 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 2003, 2017). 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. As such, impacts related to unstable soils 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-4	**Be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code, creating substantial risks to life or property?**

Impact Analysis
The soils at the project site are comprised of Delhi Sand. Delhi Sand is characterized as excessively drained soil with low shrink-swell potential (USDA 2018). 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 2003). 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 existing municipal sewer system and would not require 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
An assessment of the potential for the presence of significant paleontological resources determined that the project site has low potential for paleontological resources. Therefore, it is unlikely that paleontological resources would be encountered during construction.

However, subsurface construction activities such as trenching and grading associated with the project could potentially damage or destroy previously undiscovered paleontological resources. Therefore, Mitigation Measure GEO-2 would require implementation of standard inadvertent discovery procedures to reduce potential impacts to previously undiscovered paleontological resources. With the implementation of Mitigation Measure GEO-2, potential impacts would be reduced to a less than significant level.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures

MM GEO-2 **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.

This page left intentionally blank

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 greenhouse gas emissions (GHG) has been the subject of State legislation (AB 32 and Senate Bill 375). The Governor's Office of Planning and Research 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 (GHGs)

GHGs and climate change are cumulative global issues. The CARB and EPA regulate GHG emissions within the State of California and the United States, 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 back into the atmosphere as infrared radiation (heat). GHGs 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 nitrous oxide), 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). CO_2 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. CH_4 emissions also result from livestock and agricultural practices and the decay of organic waste in municipal solid waste landfills.

Nitrous Oxide

Nitrous oxide 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

California uses the annual statewide GHG emission inventory to track progress toward meeting statewide GHG targets. The inventory for 2016 shows that California's GHG emissions continue to decrease, a trend observed since 2007. In 2016, emissions from routine GHG emitting activities statewide were 429 million metric tons of CO_2 equivalent ($MMTCO_2e$), 12 $MMTCO_2e$ lower than 2015 levels. This puts total emissions just below the 2020 target of 431 million metric tons (CARB 2018).

Potential Environmental Impacts

For California, climate change in the form of warming has the potential to incur/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/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 (EOs) related to the state's evolving climate change policy. Of particular importance are AB 32 and Senate Bill 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 of Antioch 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 Climate Action Plans. The plan included potential programs and actions the City could implement to reach the reduction targets established by Resolution 2009/57. 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 Thresholds

BAAQMD provides multiple options for project-level GHG thresholds in its 2017 CEQA Guidelines. BAAQMD does not presently provide a construction-related greenhouse gas generation threshold but recommends that construction-generated greenhouse gases be quantified and disclosed. BAAQMD also recommends that lead agencies (in this case, the City of Antioch) make a determination of the level of significance of construction-generated greenhouse gas emissions in relation to meeting AB 32 greenhouse gas reduction goals. The lead agency is also encouraged to incorporate BMPs to reduce GHG emissions during project construction, as feasible and applicable.

The project is located within the BAAQMD; therefore, the BAQMD thresholds are the most appropriate to use for the project. The thresholds suggested by BAAQMD for project-level operational greenhouse gas generation are as follows:

- Compliance with a qualified Greenhouse Gas Reduction Strategy, or
- 1,100 $MTCO_2e$/year, or
- 4.6 metric tons of CO_2 equivalent per service population (employees plus residents).

BAAQMD's CEQA Guidelines state that if annual emissions of GHG exceed the thresholds, the project would result in a cumulatively considerable significant impact to global climate change. Therefore, if the project is less than any one of the thresholds identified above, then the project would result in a less than significant cumulative impact to global climate change.

3.8.3 Methodology

The project's GHG emissions were quantified using CalEEMod version 2016.3.2 with the same assumptions used for the air quality analysis (see Appendix A). The analysis in this section is based, in part, on the findings of the CalEEMod analysis completed by Stantec. The modeling data is provided in its entirety in Appendix A.

3.8.4 Environmental Impact Analysis

This section discusses potential impacts concerning greenhouse gases 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

Constructions Emission Inventory

The project would emit greenhouse gas emissions during construction from the off-road equipment, worker vehicles, and any hauling that may occur. As previously indicated, BAAQMD does not presently provide a construction-related greenhouse gas generation threshold but recommends that construction-generated greenhouse gases be quantified and disclosed. Construction emissions would be generated from the exhaust of equipment, the exhaust of construction hauling trips, and worker commuter trips. The construction phases include, site preparation, site grading, paving, building construction, and architectural coating. $MTCO_2e$ emissions during construction of the project are shown in Table 3.8-1.

Table 3.8-1 Construction Greenhouse Gas Emissions

Construction Year	MTCO2e
2019 – Subsection B	361
2020 – Subsection B	73
2020 – Subsections A and C	449
2021- Subsections A and C	398
BAAQMD Operational significance threshold	1,100 per year
Exceed Threshold?	**No**

Source: CalEEMod Output (Appendix A)

As shown in Table 3.8-1, the project's estimated maximum yearly construction emissions would be 847 $MTCO_2e$, which is well below the BAAQMD's operational threshold of 1,100 $MTCO_2e$ per year. Some air districts (Sacramento Air Quality Management District, South Coast Air Quality Management District, and San Luis Obispo County Air Pollution Control District) recommend amortizing construction emissions over the life of the project. Commercial projects are typically amortized over a 30- to 40-year lifespan. To provide a conservative estimate, the 30-year period was used. The amortized construction emissions are expected to be 43 $MTCO_2e$ per year. The proposed project would not have a significant GHG impact during construction.

Operational Emission Inventory

Long-term, operational GHG emissions would result from proposed project generated vehicular traffic, onsite combustion of natural gas, operation of any landscaping equipment, offsite generation of electrical power over the life of the project, the energy required to convey water to and wastewater from the project site, the emissions associated with the hauling and disposal of solid waste from the project site, and any fugitive refrigerants from air conditioning or refrigerators.

Operational GHG emissions by source are shown in Table 3.7-2. The total annualized project emissions are estimated to be 4,301 $MTCO_2e$. Emissions analysis includes regulatory compliance. Because the CalEEMod module used to estimate reductions for certain existing regulatory requirements is termed "mitigation" within the model, the mitigated output from CalEEMod is used; however, those modeling components are not considered mitigation under CEQA, but rather are treated as part of the baseline conditions.

As shown in Table 3.8-2, the project's emissions would be above the bright-line BAAQMD threshold of 1,100 $MTCO_2e$ per year. With a service population (SP) of 1,820, the project would generate approximately 2.36 $MTCO_2e$/SP/year, which is less than the BAAQMD efficiency threshold of 4.6 $MTCO_2e$/SP/year. Therefore, the project would have a less than significant GHG impact during operations.

Table 3.8-2 Operational Greenhouse Gas Emissions

Source Category	$MTCO_2e$
Area	0.02
Energy Consumption	1,034
Mobile (Vehicle)	3,026
Solid Waste Generation	64
Water Usage	133
Total Operational Emissions	4,258
Annualized Construction Emissions	43
Total Project Emissions	4,301
Service Population	1,820[1]
Project Emission Generation	2.36
BAAQMD Operational Threshold	4.60 $MTCO_2e$/SP/year
Significant Impact?	**No**

Notes:
a. Includes CalEEMod "mitigation" for locational features, compliance with regulatory measure
b. Construction emissions annualized over an anticipated 30-year project lifespan.
Source: CalEEMod Output (Appendix A)

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 Climate Action Plans (CAP), 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 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 the California Green Building Standards Code, 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 Renewable Portfolio Standard, which requires utilities to increase its mix of renewable energy sources to 50 percent by 2030. The proposed project would not conflict with the City's Community CAP and 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.

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 for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) 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 the 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, 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 Environmental Protection Agency 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 and the online GeoTracker database from the State Water Resources Control Board. 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 October 2018 revealed the project site is not listed as a hazardous material release site (DTSC 2018, SWRCB 2018).

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 2003). The nearest public airports to the project site are the Byron Airport and the Buchanan Field Airport, located approximately 13.4 miles southeast and 16.1 miles west of the project site, respectively. The nearest private airport is the Funny Farm Airport, approximately 7 miles southeast of the project site in the City of Brentwood. According to the California Department of Forestry and Fire Protection, the City is not located in or adjacent to a local or state fire hazard severity zone (CAL FIRE 2007, 2009).

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. The following impact discussions consider the effects of the proposed project related to hazards and hazardous materials in the City.

3.9.3 Environmental Impact Analysis

This section discusses potential impacts concerning 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?**

Impact Analysis

The proposed project would involve the development of a business park which would include a range of uses such as a hotel, commercial/retail, office, and self-storage facilities. During the construction phase, limited amounts of hazardous materials would be used, including standard construction materials such as concrete, paints, solvents, and heavy construction equipment which would contain diesel fuels and oils. The project contractor would be required to comply with all applicable federal, state, and local regulations related to the transport, use, or disposal of hazardous materials, as overseen by the California Environmental Protection Agency and California Department of Toxic Substances Control. During operation of the proposed project, the use of hazardous materials would be limited to those commonly found at hotel, commercial/retail, office, and self-storage facilities such as, solvents, cleaners, paints, and pesticides for landscape maintenance activities. These common household hazardous materials would be used in limited quantities and would not create a substantial hazard to the public or the environment. Therefore,

impacts related to the routine transport, use, and disposal of hazardous materials during project construction and operation 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-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
The proposed project would involve the development of a business park which would include a range of uses such as a hotel, commercial/retail, office, and self-storage facilities on a vacant site. The proposed project would not include any activities associated with the demolition of structures prior to the 1980s and would not pose a hazard regarding asbestos containing materials and lead-based paints. As discussed in Impact HAZ-1, project construction and operation activities would involve limited use of hazardous materials, including paints, solvents, fuels, oils, cleaners, and pesticides. The use of these substances is not expected to create a significant hazard to the public or the environment through reasonably foreseeable upset or accident. Furthermore, the proposed project would be required to comply with applicable federal, state, and local laws pertaining to the safe handle, storage, and transport of hazardous materials. In addition, during construction activities the applicant would be required to implement a SWPPP to prevent contaminated runoff from leaving the project site. The implementation of the SWPPP would be incorporated into the proposed project as Mitigation Measure HYD-1. Therefore, impacts related to the release of hazardous materials into the environment would be less than significant with the implementation of Mitigation Measure HYD-1.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures
Mitigation Measure HYD-1 is required. Refer to Section 3.9, Hydrology and Water Quality, for complete details pertaining to this mitigation measure.

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 one-quarter mile of an existing or proposed school. The nearest school is the Cornerstone Christian School, approximately one-half mile west of the project site. Furthermore, use of heavy equipment and activities involving potentially hazardous materials would be limited to the construction phase and

confined to construction areas and within existing roadways. The use of potentially hazardous materials would be regulated by health and safety requirements under federal, State, and local regulations including handling, storage, and disposal of the materials, as well as emergency spill response. Additionally, the proposed project would not involve the development of a use that would emit hazardous materials, substances, or waste during operation. As such, the proposed project would have a less than significant impact related to the emission or handle of hazardous materials near a school.

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-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 2018, SWRCB 2018). 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 or excessive noise 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 13.4 miles southeast and 16.1 miles west of the project site, respectively. As such, the project site does not fall within an airport land use plan and would not result in a safety hazard or excessive noise levels for people residing or working in the project area. 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	**For a project located within the vicinity of a private airstrip, 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 the vicinity of a private airstrip. The nearest private airport is the Funny Farm Airport, approximately 7 miles southeast of the project site in the City of Brentwood. As such, the proposed project would not result in a safety hazard for people residing or working in the project area. 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-7	**Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

Impact Analysis
The proposed project would not involve permanent modification of existing roadways. During the construction phase, temporary and/or partial street closures may be needed. However, access to the project site and the surrounding area would be maintained in accordance with a TCP. The TCP 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 a less than significant impact 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 HAZ-8	**Expose people or structures either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?**

Impact Analysis
The California Department of Fire and Forestry Protection does not identify the City in a local or state very high fire hazard severity zone (CAL FIRE 2007, 2009). According to the General Plan EIR, the southern and unincorporated

portions of the city are the most susceptible to wildland fire hazards because these areas contain rural, hilly terrain, and are adjacent to natural grasslands and brush (City of Antioch 2003). The project site is in the northeast portion of the City and located in an urban area near other commercial uses. In addition, the 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. No impact would occur.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

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 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?; 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

Regional Hydrology

The project site is located within the San Joaquin River Hydrologic Region, specifically in the East County Delta Drainages Watershed. The East County Delta Drainages Watershed is approximately 88 square miles and includes the northeastern portion of Antioch, eastern Oakley, Bethel Island, and Knightsen. This watershed includes Contra Costa County's agricultural core along with a mix of grasslands, wetlands, municipal, and industrial uses. There are numerous irrigation canals and channels throughout this area, which drain into Old River and the San Joaquin River. Other principal waterways within the City include East Antioch Creek, West Antioch Creek, Markely Creek, Sand Creek, Marsh Creek, and Deer Creek.

Several reservoirs are also present within the City, such as the Contra Loma Reservoir, Antioch Municipal Reservoir, and Lake Alhambra. The Contra Loma Reservoir and Antioch Municipal Reservoir are key components of the City's water system, as these reservoirs provide emergency water supplies, and ensure sufficient supplies are provided from the Contra Costa Canal (City of Antioch 2003). In addition, the City receives water from the San Joaquin River and the Sacramento-San Joaquin Delta. The City does not pump groundwater for municipal water supplies (City of Antioch 2003).

Regional Flooding

Most flooding within the City is caused by heavy rainfall, high tides from the San Joaquin River, and subsequent runoff volumes that cannot be adequately conveyed by the existing storm drainage system and surface water (City of Antioch 2003). According to the General Plan EIR and as defined by the Federal Emergency Management Agency (FEMA), most of the City is located outside of the 100-year flood hazard zone, except for areas adjacent to the San Joaquin River and tributary creeks. The City has implemented several flood prevention measures, including the construction of several detention basins (City of Antioch 2003).

Site Hydrology and On-Site Drainage

The topography of the project site is relatively flat with the elevation ranging from 37 feet to 25 feet. The project site is undeveloped and not crossed by or adjacent to any of the City's principal water features. Soils at the project site consist of young alluvial sediments with granular material classified as poorly to well-graded sand (BKF Engineers 2018). The project site generally drains in a southwest to northeast direction. The proposed project would create 675,403 square feet of new impervious surface and would connect to existing stormwater drainage facilities. According to the preliminary Stormwater Control Plan, the proposed project would incorporate landscaped areas to serve as bio-treatment, bio-retention areas, and low impact development elements to treat 100 percent of site and to control flow (BKF Engineers 2018).

All municipalities in Contra Costa County are required to comply with the requirements of the Municipal Regional Stormwater NPDES Permit. Specifically, municipalities in Contra Costa County are required to comply with provision C.3 to address stormwater runoff pollutant discharges and prevent increase in runoff flows from new development and redevelopment projects. The City has adopted the County C.3 requirements (Chapter 9: Stormwater Management Discharge Control in the Antioch Municipal Code), which requires new development projects that create or alter 10,000 or more square feet of impervious area to prepare a Stormwater Control Plan to demonstrate how compliance with these requirements would be achieved (City of Antioch 2017). As such, the applicant has prepared a preliminary Stormwater Control Plan in conformance with the Contra Costa County Clean Water Program Stormwater C.3 Guidebook (Appendix D).

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 General Plan EIR, and the preliminary Stormwater Control Plan prepared by BKF Engineers (Appendix D). 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.

3.10.3 Environmental Impact Analysis

This section discusses potential impacts on 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 ground water quality?

Impact Analysis

Construction of the proposed project would involve the disturbance of the entire 19.75-acre site. Construction activities including grading could result in the degradation of water quality by releasing sediment, oil, greases, and other chemicals into the storm drain system. The proposed project would disturb more than 1 acre of land and would be required to comply with the NPDES General Construction Permit. Therefore, to address potential impacts to water quality during construction, the proposed project would be required to implement Mitigation Measure HYD-1 and prepare a SWPPP. The SWPPP would require the applicant and its contractors to incorporate temporary BMPs to control sedimentation, erosion, and hazardous materials contamination of runoff during construction.

In addition, to address water quality impacts during operation of the proposed project and to ensure compliance with the C.3 requirements, the proposed project would implement a Stormwater Control Plan, as required by Chapter 9 of the Antioch Municipal Code. The proposed project would incorporate landscaped areas, bio-retention areas, source control measures, and low impact design strategies to treat 100 percent of stormwater runoff at the site and control flow (BKF Engineers 2018). The bio-retention areas and storm drains would collect, treat, and convey stormwater runoff from the project site to the existing stormwater system. All bio-retention areas would be sized based on the design requirements of the Contra Costa County Clean Water Program Stormwater C.3 Guidebook. The Stormwater Control Plan would be submitted to the City for review and approval. As such, impacts to water quality during construction and operation of the proposed project would be less than significant with the compliance of the Antioch Municipal Code, C.3 requirements, and implementation of Mitigation Measure HYD-1.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM HYD-1 **Prepare a SWPPP.** Prior to the issuance of any construction-related permit, the applicant shall prepare and submit a Notice of Intent to the SWRCB and prepare a SWPPP in compliance with the NPDES General Construction Permit requirements. 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); a 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 on the project site. Control measures are required prior to and throughout the rainy season. 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. Store, cover, and

isolate construction materials, including topsoil and chemicals, 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, which will identify proper storage, collection, and disposal measures for potential pollutants (such as fuel, fertilizers, pesticides, etc.) used on-site. The plan would also require the proper storage, handling, use, and disposal of petroleum products.
- Construction activities shall be scheduled to minimize land disturbance to the immediate area required for construction during peak runoff periods. 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 does not rely on groundwater for water supplies. The proposed project does not plan to draw groundwater from the site, and therefore would not substantially deplete groundwater supplies. However, new construction could result in impacts related to groundwater recharge if areas currently available for the infiltration of rainfall runoff are reduced and permeable areas are replaced by impermeable surfaces. According to the preliminary Stormwater Control Plan, the proposed project would convert approximately 80 percent (675,403 square feet) of undeveloped, permeable land to impermeable surfaces. While the proposed project would increase the amount of impervious surface at the project site, the proposed project would incorporate permeable landscaped areas and bio-retention areas throughout the site to allow for some groundwater recharge to continue. The permeable landscaped areas and bio-retention areas would be designed to treat stormwater and control runoff flow at the site and would not substantially interfere with groundwater recharge or impede sustainable groundwater management of the basin. As such, impacts related to groundwater would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

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 off-site;

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; or

iv) Impede or redirect flood flows?

Impact Analysis

i. Erosion or siltation

The proposed project would not involve the alteration of any natural drainage channels or any watercourse. During construction, the proposed project would be required to comply with Mitigation Measure HYD-1 and implement a SWPPP to control on- or off-site erosion and sedimentation. As required by the Antioch Municipal Code, the proposed project would be required to comply with the C.3 requirements and implement a Stormwater Control Plan. In accordance with these requirements, the proposed project would provide landscaped areas, bio-retention areas, and incorporate permanent source control measures to treat stormwater runoff and control flow during operation. As such, the proposed project would not substantially alter the existing drainage pattern of the site or increase the potential for erosion and siltation. Impacts would be less than significant with implementation of Mitigation Measure HYD-1.

ii. Surface runoff resulting in flooding on- or off-site

The proposed project would not result in the alteration of a stream or river. The proposed project would be required to comply with Mitigation Measure HYD-1 and implement a SWPPP during construction. Implementation of the SWPPP would control the amount of surface runoff from the site and minimize the amount of pollutants entering the stormwater system. In addition, operation of the proposed project would be required to comply with the C.3 requirements and implement a Stormwater Control Plan. The proposed project would provide landscaped areas, bio-retention areas, and incorporate permanent source control measures to treat stormwater runoff and control flow during operation. The bio-retention areas and storm drains would be designed to meet the requirements of the Contra Costa County Clean Water Program Stormwater C.3 Guidebook. Therefore, the proposed project would not substantially alter the existing drainage of the site or increase the potential for flooding on-site of off-site. Impacts would be less than significant with implementation of Mitigation Measure HYD-1.

iii. Exceed capacity of existing or planned stormwater drainage systems/additional sources of polluted runoff

The proposed project would convert approximately 80 percent of the project site with new impervious areas. The increase in impervious surface could potentially increase the volume and velocity of surface water runoff at the site. As discussed in Impact HYD-1 though HYD-4, the proposed project would be required to implement Mitigation Measure HYD-1 to prevent, control, and reduce stormwater pollution at the project site during construction. Operation of the proposed project would be required to comply with the City's

stormwater management and discharge control requirements (Chapter 9 of Antioch Municipal Code), including the implementation of a Stormwater Control Plan in accordance with the C.3 requirements. According to the preliminary Stormwater Control Plan, the proposed project would incorporate landscaped areas, bio-retention areas, permeant source control measures, and low-impact development design elements to treat and control 100 percent of the stormwater runoff during operation of the project. Furthermore, the bio-retention areas and storm drains would be designed to meet the requirements of the Contra Costa County Clean Water Program Stormwater C.3 Guidebook. Therefore, the stormwater runoff would not the capacity of existing stormwater facilities and impacts would be less than significant with implementation of Mitigation Measure HYD-1.

iv. Impede or redirect flood flow

According to FEMA Flood Insurance Rate Map #06013C0144G, the project site and the surrounding area are located in Zone X (FEMA 2018). Zone X is defined as areas not within either a 100-year or 500-year flood hazard zone. As such, the proposed project would not place housing or structures, which would imped potential flood flows. No impact would occur.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures
Mitigation Measure HYD-1 is required. Refer to Impact HYD-1 for complete details pertaining to this mitigation measure.

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
According to FEMA Flood Insurance Rate Map #06013C0144G, the project site and the surrounding area are located in Zone X (FEMA 2018). Zone X is defined as areas not within either a 100-year or 500-year flood hazard zone. The project site is more than 50 miles from the Pacific Ocean and, therefore, is not prone to tsunami hazards. A seiche affects 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, however, located 1 mile south of the San Joaquin River. As identified in the General Plan EIR, this river is not a closed body of water and risk from seiche would be low (City of Antioch 2003). Based on the project location, the proposed project would not risk release of pollutants due to project inundation. No impacts would occur.

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

As discussed in Impact HYD-1, the proposed project would implement a Storm Water Pollution Prevention Plan during construction and a Stormwater Control Plan during operations to address potential water quality issues. As such, impacts to water quality during construction and operation of the proposed project would be less than significant with the compliance of the Antioch Municipal Code, C.3 requirements, and implementation of Mitigation Measure HYD-1.

The Sustainable Groundwater Management Act (SGMA), effective January 1, 2015, established a framework of priorities and requirements to facilitate sustainable groundwater management throughout the State. The intent of SGMA is for groundwater to be managed by local public agencies and newly-formed Groundwater Sustainability Agencies (GSAs) to ensure a groundwater basin is operated within its sustainable yield through the development and implementation of a Groundwater Sustainability Plans (GSP). The Tracy Subbasin, referred to as DWR Basin 5-22.15 San Joaquin Valley, is a Medium priority groundwater basin based on the Groundwater Basin Prioritization by the State Department of Water Resources (DWR) and is located in eastern Contra Costa County as well as in San Joaquin and Alameda Counties.

Eight local agencies that overlay a portion of the Basin in Contra Costa County, referred to at East CC Basin, entered into a Memorandum of Understanding (MOU) on May 9, 2017 to collaborate and develop a single GSP for the East CC Basin. With the exception of Contra Costa Water District, each member agency has become Groundwater Sustainability Agency (GSA) to be the local agency to manage the Basin within their respective areas. The member agencies to the East CC Basin MOU include:

- City of Antioch
- City of Brentwood
- Byron Bethany Irrigation District
- Contra Costa County
- Contra Costa Water District
- Diablo Water District
- Town of Discovery Bay
- East Contra Costa Irrigation District

The GSP for the Tracy Subbasin is due January 31, 2022. The proposed project does not plan to draw groundwater from the site, and therefore would not substantially deplete groundwater supplies. New construction could result in impacts related to groundwater recharge if areas currently available for the infiltration of rainfall runoff are reduced and permeable areas are replaced by impermeable surfaces. The proposed project would incorporate permeable landscaped areas and bio-retention areas throughout the site to allow for some groundwater recharge to continue. The permeable landscaped areas and bio-retention areas would be designed to treat stormwater and control runoff flow at the site and would not substantially interfere with groundwater recharge. As such, impacts related to conflicts with water quality and sustainable groundwater management would be less than significant with the compliance of the Antioch Municipal Code, C.3 requirements, and implementation of Mitigation Measure HYD-1.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure HYD-1 is required. Refer to Impact HYD-1 for complete details pertaining to this mitigation measure.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

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 project site is located within the Eastern Waterfront Employment Focus Area and has a general plan designation of Regional Commercial and Eastern Employment Business Park. The General Plan defines these land use designations as follows:

The primary purpose of areas designated "Regional Commercial" is to provide areas for large-scale retail commercial development and supporting uses. Regional commercial areas typically serve a large population base, with a market area as large as 8 to 20 miles or more. Typically, regional commercial areas have freeway visibility, or are located along major arterials, and linked directly to a freeway. Regional commercial areas typically encompass an integrated shopping center of 30 to 50 acres or more and may also combine surrounding freestanding commercial uses and smaller neighborhood or community centers into a single large-scale shopping district. The maximum allowable development intensity is a Floor Area Ratio (FAR) of 0.50

Areas designated Eastern Employment Business Park are intended for employment-generating uses compatible with a locate adjacent to residential neighborhoods as a transition from other industrial uses. Appropriate land use types are set forth in Table 4.A in the City's General Plan and include administrative and professional offices, automotive uses, eating and drinking establishments, lodging and visitor services, recreational vehicle park, light manufacturing and assembly, research and development, personal storage, storage and distribution – light, and open space. The maximum allowable development intensity is a FAR of 0.5.

The project site is zoned as Planned Business Center (PBC) and Regional Commercial (C-3). Based on the zoning ordinance, the Planned Business Center zoning district is "intended for office centers, research and development facilities, limited industrial activities, limited warehouse type retail and commercial activities, and small-scale warehousing distribution. Individual business centers would have a common architectural and landscape treatment, while architectural variation is encouraged between centers." The intent of the Regional Commercial zoning district is "for retail and service commercial uses of a regional nature, including those in and adjacent to large centers with one or more full-time department stores. This district also provides for highway or travel-oriented functions along freeways, major thoroughfares, and major roadways."

The surrounding land uses include residential, commercial buildings, light industrial uses, and undeveloped land.

3.11.2 Methodology

Evaluation of potential land use impacts are based on a review of documents pertaining to the proposed project, including the General Plan, and Antioch's Municipal Code and Zoning Ordinance.

3.11.3 Environmental Impact Analysis

This section discusses potential impacts concerning 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 proposed project would involve the development of a business park on an undeveloped site. The project site is bordered by East 18th Street to the south, a commercial use to the north, Drive-In Way to the east, and undeveloped land to the west. The proposed project would not introduce an incompatible use in the area and would not include any physical features that would physically divide the community (e.g., blocking of roadways or sidewalks). Therefore, no impacts 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
General Plan Consistency

The proposed project would develop a business park, which could include a range of uses such as, hotel, commercial/retail, office, and self-storage facilities within the City's Eastern Waterfront Employment Focus Area. As discussed above, the uses proposed as part of the project would be consistent with the land use types allowed within the Eastern Employment Business Park and Regional Commercial land use designations as defined by the City's General Plan. The proposed project would also be consistent with the intent of the Eastern Employment Business Park designation and include uses that provide a transition between the residential neighborhoods south of East 18th Street and the industrial development north of the project site. In addition, the proposed project would be consistent with the applicable goals and policies of the Eastern Waterfront Employment Focus Area which is intended to provide uses that generate employment opportunities. Any future land use would be dictated by the approved land uses discussed in Section 2.0, Project Description, or as approved by the City Council. As such, the proposed project would be consistent with the City's General Plan.

Zoning Consistency

As noted in Section 2.0, Project Description, the project site would be rezoned from Planned Business Center and Regional Commercial to Planned Development. Development standards have been proposed for the three subsections that would be approved by the City Council as part of the project approval. Pursuant Section 9-5.2307 of Antioch's Municipal Code, the City Council would review the environmental impacts of the plan, the appropriateness and interrelationship of the proposed uses, any effects on traffic circulation due to development of the plan, the quality of the suggested site plan design, and other details of the proposed district. In addition, all design features of a proposal (e.g., architecture, landscaping, signage) would be subject to design review and any conditions of approval would be imposed. Once approved, the project site would be rezoned as a Planned Development District and so indicated on the zoning map for the city to guide the development of the project site consistent with the project site's General Plan designations of Regional Commercial and Eastern Employment Business Park.

Once the Planned Development District is approved, a use permit would be required prior to the construction of any phase. The applicant is planning to construct the self-storage uses on Subsection B and seeking only entitlements for Subsections A and C. Any future development would be required to comply with the established provisions of the Planned Development zoning district and would be subject to approval by the City Council.

Therefore, pursuant to the requested rezoning, use permit, and design review, the proposed project would not conflict with any applicable land use plans, policies, or regulations of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. As a result, this impact would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
Less Than Significant Impact.

This page left intentionally blank

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 following analysis is based on review of the General Plan, General Plan EIR, and the DOC's Division of Mine Reclamation mineral lands classification map. The following impact discussions consider the impacts of the proposed project related to mineral resources.

3.12.2 Methodology

The following analysis is based on review of the General Plan, General Plan EIR, and the DOC's Division of Mine Reclamation mineral lands classification map. The following impact discussions consider the impacts of the proposed project related to mineral resources.

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 classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the State?**

Impact Analysis

According to the DOC's Mineral Lands Classification map of Aggregate Resources, the project site is in an area designated Mineral Resource Zone-3, indicating that the site contains mineral deposits but the significance of which cannot be evaluated using current data (DOC 1998). No mineral extraction operations exist on or near the project site, and mineral extraction is not included as part of the proposed project. Furthermore, according to the City's General Plan EIR areas in the City that have been identified for new development do not contain known mineral resources that would be of value to the region or residents of the state (City of Antioch 2003). The project site is zoned Regional Commercial and Planned Business Center, neither of which allow mineral extraction uses. Therefore, the proposed project would not result in the loss of availability of a known mineral resource 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

As mentioned under Impact MIN-1, the project site is not identified in the General Plan or by the DOC Division of Mine Reclamation as containing valuable mineral resources. 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.

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 ambient (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 dBA and referred to as A-weighted decibels. There is a strong correlation between A-weighted sound levels (expressed as dBA) 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 defines sound measurements and other terminology used in this Report, and Table 3.13-2 summarizes typical A-weighted sound levels for different noise sources.

With respect to how humans perceive and react to changes in noise levels, a 1-dBA increase is imperceptible, a 3-dBA increase is barely perceptible, a 5-dBA increase is clearly noticeable, and a 10-dBA increase is subjectively perceived as approximately twice as loud (Egan 2007). These subjective reactions to changes in noise levels were developed based on 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 dBA, 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.

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), 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 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.

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 (FHWA 2011). 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 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.

Table 3.13-1 Definition of Sound Measurement

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 (dBA)	An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
C-Weighted Decibel (dBC)	The sound pressure level in decibels as measured using the C- weighting filter network. The C-weighting is very close to an unweighted or flat response. C-weighting is only used in special cases when low-frequency noise is of particular importance. A comparison of measured A- and C-weighted level gives an indication of low frequency content.
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 (Peak Velocity or 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.

Source: FHWA 2006

Table 3.13-2 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
Noisy urban area, daytime	-80-	Garbage Disposal at 3 Feet
Gas lawnmower, 100 Feet		
Commercial area	-70-	Vacuum Cleaner at 10 Feet
Heavy traffic at 300 Feet		Normal Speech at 3 Feet
	-60-	
Quiet urban daytime		Large business office
	-50-	Dishwasher in next room
Quiet urban nighttime		
Quiet suburban nighttime	-40-	Theater, large conference room (Background)
Quiet rural nighttime	-30-	Library
	-20-	Bedroom at night, concert hall (Background)
	-10-	Broadcast/recording studio
	-0-	

Decibel Addition

Because decibels 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 dBA, two identical sources would combine to produce 73 dBA. The cumulative sound level of any number of sources can be determined using decibel 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 measures in terms of peak particle velocities (PPV) in inches per second (in/sec p.p.v.). Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of

PPV. The City does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities and project operations are addressed as potential noise impacts associated with the project implementation.

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 in/sec p.p.v. Table 3.13-4 indicates the threshold for damage to structures ranges from 0.2 to 0.6 in/sec p.p.v.

Table 3.13-3 Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.1
Severe	2.0	0.4

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-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: Caltrans 2004.

Table 3.13-4 Guideline Vibration Damage Potential Criteria

Structure and Condition	Maximum PPV (in/sec)	Transient Sources Continuous/Frequent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structure	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

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-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: Caltrans 2004.

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 earth and downward into the earth. These surface waves can be felt as ground vibration. Vibration from 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. As seismic waves travel outward from a vibration source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in/sec p.p.v) at which these particles move is the commonly accepted descriptor of the vibration amplitude, referred to as the PPV.

Table 3.13-5 summarizes typical vibration levels generated by select construction equipment (FTA 2006).

Table 3.13-5 Vibration Source Levels for Select Construction Equipment

Equipment	PPV at 25 Feet
Pile driver (impact)	0.644 to 1.518
Pile drive (sonic/vibratory)	0.170 to 0.734
Vibratory roller	0.210
Hoe ram	0.089
Large bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Source: FTA 2006.

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 2006). PPVref is the reference PPV from Table 3.12-5:

PPV = PPVref x (25/Distance)^1.5

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 are commercial or industrial activities. Ambient noise levels can also affect the perceived desirability or livability of a development.

As shown in Figure 3.12-1, the project site (blue pin) is surrounded by a mix of land uses, including commercial uses on all sides of the project site, lodging to the south and east of the site, and single family residential to the south. The sensitive receivers (in red pins) include the Riverview Motel across East 18th Street, single family residential homes between Stroer Lane and Almondridge Drive and along Wightman Lane, and the Best Western Plus Delta Inn & Suites and Sandy Point Mobile Home Park just east of SR-160. There is also a proposed future multi-family residential development across East 18th Street from the project site.

Existing 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 relatively quiet, while areas that are more urbanized are noisier as a result of roadway traffic, industrial activities, and other human activities.

In the City of Antioch, major sources include "mobile sources" such as traffic along State Route 4 and State Route 160 freeways, rail lines, and major arterial roadways. Significant "stationary" sources of noise within Antioch include heavier industrial development in the northern portion of the City, and commercial development adjacent to residential neighborhoods and construction activities (City of Antioch 2003).

Stantec reviewed the noise contours contained in the Contra Costa County Noise Element to provide baseline noise conditions at nearby sensitive receptors within the vicinity of the project site. As shown in Figure 3.12-2, the project site is within the Antioch North Quadrangle and shows the project site is located outside of any 60 dBA Ldn / CNEL contours. In addition, Table 11-2 "Future Noise Levels Along Freeways and Major Arterials" in the Contra Costa County Noise Element lists all major roadways in Contra Costa County and shows the Ldn level at 100 ft. and the distance to the 60 dBA Ldn contour line. The Ldn at 100 feet for SR-160 is listed at 70 dBA. The distance from SR-160 to the 60 Ldn contour is 425 feet. The east edge of the project site is located about 739 feet from the southbound lanes of SR-160; or outside the 60 dBA Ldn contour. East 18th Street is not included in the list of freeways and major arterials.

3.13.1 Methodology

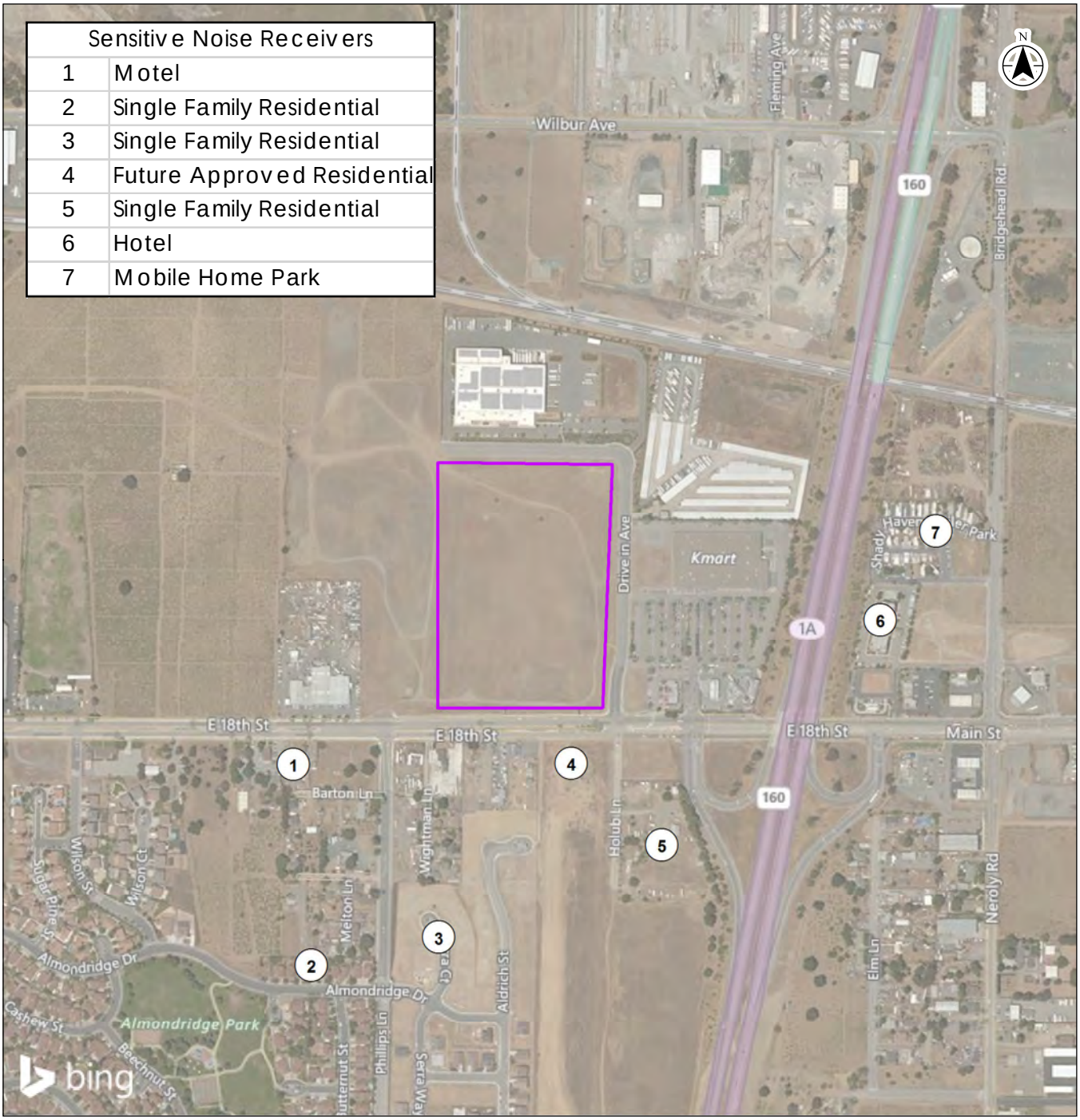
The impact assessment is based upon the noise contours presented in the Contra Costa County General Plan and the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM).The Contra Costa County noise contours were used to provide baseline noise conditions at nearby sensitive receptors 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 predicted traffic counts from the Acorn Business Park Transportation Impact Study prepared by Stantec on November 1, 2018.

Information from the Contra Costa County noise contours were also used as an input to the FHWA RCNM as the existing ambient noise level input. The RCNM is used as the FHWA's national standard for predicting noise generated from construction activities. The RCNM analysis includes the calculation of noise levels (Lmax and Leq) at incremental distances for a variety of construction equipment. The spreadsheet inputs include acoustical use factors, Lmax values, and Leq values at various distances depending on the ambient noise measurement location. For this analysis, it was assumed that a worst-case noise scenario for construction activity would entail the operation of three noisiest pieces of equipment (grader, dozer, and compactor) simultaneously. Additionally, the noise modeling outputs can be found in Appendix H.

This page left intentionally blank.

V:\1857\active\185704284\fig\3.1_2_1.mxd Revised: 2018-10-30 By: lmccandless

Sensitive Noise Receivers	
1	Motel
2	Single Family Residential
3	Single Family Residential
4	Future Approved Residential
5	Single Family Residential
6	Hotel
7	Mobile Home Park



Legend

Project Location

Sensitive Noise Receiver

0 600 1,200 Feet

1:8,000 (at original document size of 8.5x11)

Stantec

Project Location
Antioch
Contra Costa County, CA

Prepared by LMC on 2018-10-30
Technical Review by JD on 2018-10-30
Independent Review by EN on 2018-10-30

Client/Project
City of Antioch
Acorn Business Park Project
Initial Study/Mitigated Negative Declaration

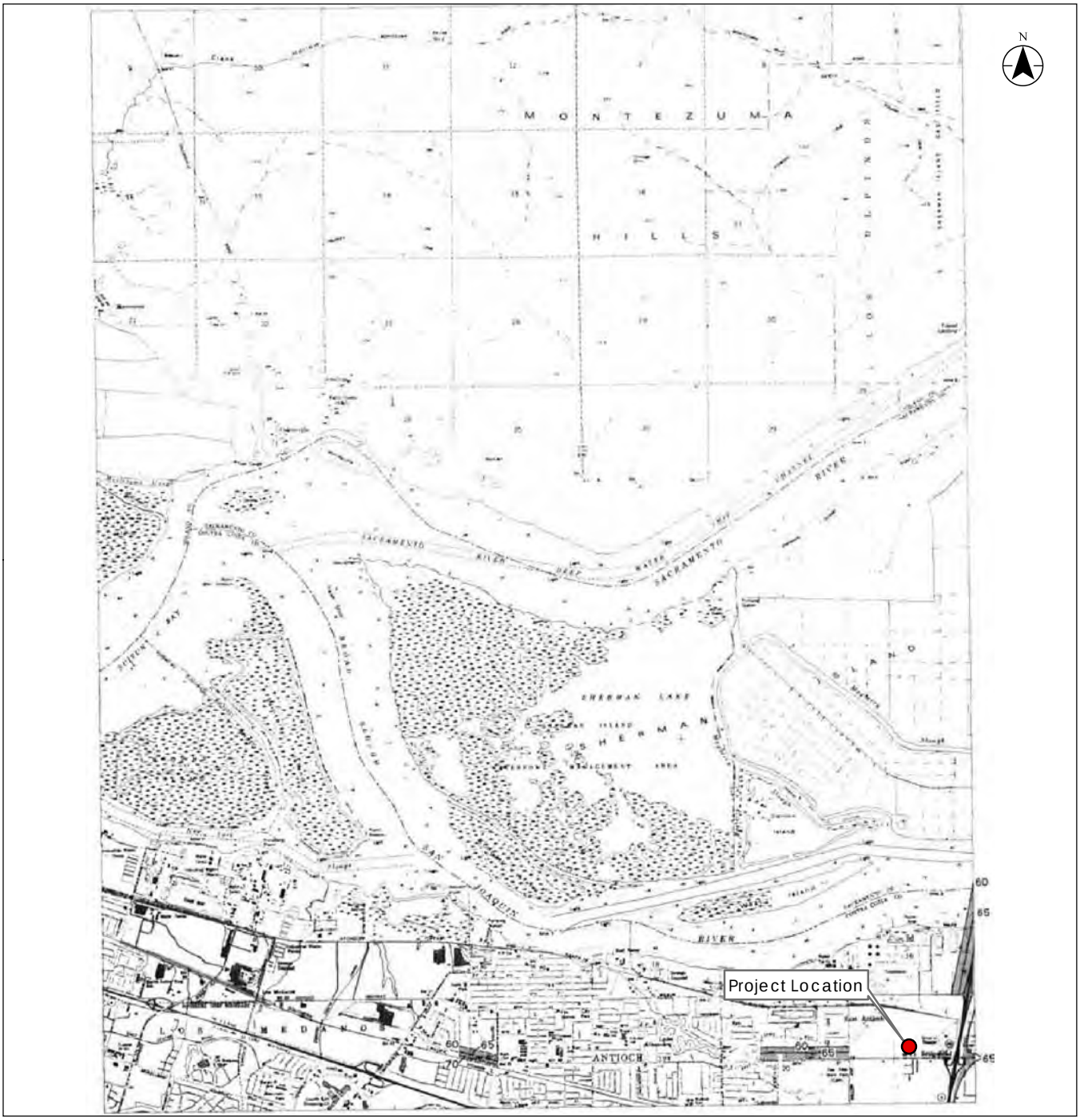
Figure No.
3.1**3**-1

Title
Project Site and Neighboring Noise-Sensitive Receivers

Notes
1. Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
2. Sources: Stantec 2018

This page left intentionally blank.

V:\1857\active\185704284\fig\3.1_2_2.mxd Revised: 2018-10-30 By: lmccandless



Legend

2005 DNL and CNEL NOISE LEVELS (dB)

Roadways are DNL

Trains are DNL

Notes
1. Sources: Stantec 2018, Contra Costa County General Plan

Stantec

Project Location
Antioch
Contra Costa County, CA

Prepared by LMC on 2018-10-30
Technical Review by JD on 2018-10-30
Independent Review by EN on 2018-10-30

Client/Project
City of Antioch
Acorn Business Park Project
Initial Study/Mitigated Negative Declaration

Figure No.
3.1**3**-2

Title
Contra Costa County Noise Element
Antioch North Noise Contours

This page left intentionally blank.

3.13.2 Environmental Impact Analysis

This section discusses the potential impacts on 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

To describe future noise levels due to traffic added from the project, a.m. and p.m. peak hour traffic counts with and without the project provided by Stantec were used to determine the percentage increase of traffic on the roads adjacent to the project site and adjacent sensitive receivers.

Table 3.13-6 shows the cumulative peak hour counts associated with traffic on the local roadway network both with and without the project. The last columns in the table show the overall percentage change and the estimated difference in peak hour noise level.

Table 3.13-6 Traffic Peak Hour Counts and Estimated Noise Increase

Roadway	Cumulative Peak Hour Traffic Count	Cumulative Peak Hour Traffic Count with Project	Percentage Change	Estimated dB Change
Phillips Lane	238 (321)	238 (321)	None	None
Viera Avenue	222 (320)	237 (329)	7% (6%)	0.2 (0.3) dB
Drive-In Way	78 (103)	209 (233)	168% (126%)	Still 1 dB or Less
East 18th Street	1,128 (1,136)	1,268 (1,290)	12% (14%)	0.5 (0.5) dB
Bridgehead Road	723 (829)	723 (829)	None	None
Main Street	2,286 (2,520)	2,315 (2,557)	1% (2%)	0.1 (0.1) dB

Notes:
Numbers in parenthesis are p.m. peak hour traffic volumes.

The proposed project is expected to minimally increase traffic counts along Viera Avenue, East 18th Street, and Main Street and have no increase in traffic counts on Phillips Lane and Bridgehead Road. There will be essentially no change in traffic noise expected along these streets and there will be no impact.

Peak traffic counts are expected to increase with the project along Drive-In Way. Even though the percentage of traffic is expected to increase, the overall traffic counts are still very low. The peak hour traffic counts along Drive-In Way with the project will still be less than the existing traffic counts (without the project) on all the other surrounding roadways. Therefore, future noise levels on Drive-In Way with the project are not expected to significantly increase over the current conditions.

Therefore, the proposed project should not cause increased traffic noise levels over the baseline conditions at the neighboring sensitive receivers and this would be a less than significant impact relative to this topic. The proposed project's contribution to traffic noise is predicted to be minimal and would not permanently result in an increase in ambient noise levels within the project vicinity. Traffic noise after implementation of the proposed project would not

result in a perceptible permanent increase in ambient noise levels at the project site. Therefore, noise levels with implementation of the proposed project would result in a less than significant impact.

Interior Traffic Noise Level Impacts

Alternative A-2 in Subsection A of the project would develop a 4-story, 95-room hotel on the southwest corner of the project site. The California Building Code states the interior noise levels attributable to exterior sources within hotel guestrooms shall not exceed 45 dBA Ldn in any habitable room. The needed sound isolation requirements of a residential building exterior façade system will be dependent on the following conditions:

- The dimensions of the rooms with exterior windows.
- The finishes within the rooms.
- The ratio of clear glass to solid wall in the exterior wall assembly.
- The exterior solid wall construction.

Modern construction with punch windows typically provides a 25-dBA exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dBA Ldn, or less, will typically comply with the code-required interior noise level standard. Modern construction utilizing window walls, curtainwalls, or a high ratio of exterior clear glass will provide less reduction with the windows closed. Buildings using a high amount of glass will typically comply with the code-required interior noise level standard if exposed to exterior noise levels of 67 dBA Ldn or less.

According to the information and contours contained in the Contra Costa County Noise Element, the potential hotel site will be located outside the 60 dBA Ldn noise contour. Therefore, interior noise levels should comply with California Building Code requirements with standard construction.

Project Fixed-Source Noise

Typical lodging and commercial building construction will involve new rooftop mechanical equipment, such as condensing units, air handling units, exhaust fans, and potentially chillers and cooling towers. This equipment will generate noise that will radiate to the neighboring properties. The noise from this equipment will be required to comply with the maximum noise levels listed in Paragraph 11.6.1 “Noise Objective” in the City of Antioch General Plan and Article 19 “Noise Attenuation Requirements” in the City of Antioch Municipal Code. Thus, the on-site equipment would incorporate Mitigation Measure NOI-1 and be designed incorporating measures such as shielding and/or appropriate attenuators to reduce noise levels that may affect nearby properties. With this mitigation measure, the impact of fixed-source noise to the neighboring properties would be less than significant with incorporation of Mitigation Measure NOI-1.

Short-Term Construction Noise Impacts

Two types of short-term noise impacts could occur during construction of the proposed project. First, construction crew commutes and the transport of construction equipment and materials to the project site would incrementally increase noise levels on access roads leading to the project site. This increased traffic would be composed of vehicles, medium trucks, and heavy trucks.

Existing traffic on SR-160 and East 18th Street already includes a component of construction vehicles and commercial vehicles to service the existing commercial facilities, such as the Markstein Sales building and various automotive repair shops. Noise levels along these streets are not expected to increase due to project-related construction traffic.

It is anticipated that construction vehicles would not use the local roads, such as Phillips Lane, as a travel path to and from the project site. Therefore, noise levels along the local roads, which are directly adjacent to the single-family residential homes, are not expected to increase due to project-related construction traffic.

The second type of short-term noise impact is related to noise generated during construction. Construction activities would include excavation activities and grading, foundation work, building construction, and paving. Each construction stage has its own mix of equipment and, consequently, its own noise characteristics. These various construction operations would change the character of the noise generated at the project site and, therefore, the ambient noise level as construction progresses. The loudest phases of construction include excavation, building construction, and grading phases, as the noisiest construction equipment is earthmoving and grading equipment. Table 3.13-7 below lists types of construction equipment that may be used throughout construction and the maximum and average operational noise level as measured at 527 feet from the operating equipment. The 527-foot distance represents the distance between the southwest edge of the project site and the existing Riverview Motel across East 18th Street.

Table 3.13-7 Summary of Federal Highway Administration Roadway Construction Noise Model at Existing Motel Receiver

Source	Distance to Nearest Sensitive Receptor	Sound Level at Motel		
		Lmax	Acoustical Use Factor (%)	Leq
Backhoe	527 feet	57.1	40	53.1
Compactor (ground)	527 feet	62.8	20	55.8
Crane	527 feet	60.1	16	52.1
Concrete Mixer Truck	527 feet	58.3	40	54.4
Compressor (air)	527 feet	57.2	40	53.2
Bulldozer	527 feet	61.2	40	57.2
Excavator	527 feet	60.3	40	56.3
Front End Loader	527 feet	58.7	40	54.7
Flat Bed Truck	527 feet	53.8	40	49.8
Generator	527 feet	60.2	50	57.2
Grader	527 feet	64.5	40	60.6
Paver	527 feet	56.8	50	53.8
Pickup Truck	527 feet	54.5	40	50.6
Pneumatic Tools	527 feet	64.7	50	61.7
Welder / Torch	527 feet	53.5	40	49.6
Tractor	527 feet	63.5	40	59.6

Source: FHWA 2006, AQ/GHG assumptions (Appendix A)

It also may be possible that construction at the project site may occur after the proposed future residential development across East 18th Street. The north edge of the proposed future residential project will be approximately 175 feet from the south edge of the project site. Table 3.13-8 below lists the type of construction equipment that may be used throughout construction and the maximum and average operational noise level as measured at 175 feet from the operating equipment.

Table 3.13-8 Summary of Federal Highway Administration Roadway Construction Noise Model at Potential Future Residential Development

Source	Distance to Nearest Sensitive Receptor	Sound Level at Motel		
		Lmax	Acoustical Use Factor (%)	Leq
Backhoe	175 feet	66.7	40	62.7
Compactor (ground)	175 feet	72.3	20	65.4
Crane	175 feet	69.7	16	61.7
Concrete Mixer Truck	175 feet	67.9	40	63.9
Compressor (air)	175 feet	66.8	40	62.8
Bulldozer	175 feet	70.8	40	66.8
Excavator	175 feet	69.8	40	65.8
Front End Loader	175 feet	68.2	40	64.2
Flat Bed Truck	175 feet	63.4	40	59.4
Generator	175 feet	69.7	50	66.7
Grader	175 feet	74.1	40	70.1
Paver	175 feet	66.3	50	63.3
Pickup Truck	175 feet	64.1	40	60.1
Pneumatic Tools	175 feet	74.3	50	71.3
Welder / Torch	175 feet	63.1	40	59.1
Tractor	175 feet	73.1	40	69.1

Source: FHWA 2006, AQ/GHG assumptions (Appendix A)

A reasonable worst-case noise condition for general construction activity is that a grader, pneumatic tools, and a tractor would operate simultaneously at the same location. This represents a conservative scenario, as it assumes that all three pieces of equipment would be operating at the same time and same place. Construction would occur in sequential phases, thus in reality, it is not likely the three loudest pieces of equipment would be operating simultaneously at the exact location of the project site closest to the nearest noise-sensitive receiver. Nevertheless, the RCNM calculated that this scenario would result in a combined noise level of 69.0 dBA Lmax and 65.5 dBA Leq at the motel receiver 527 feet from the project site and a combined noise level of 78.6 dBA Lmax and 75.0 dBA Leq at the future residential development 175 feet from the project site.

Although noise levels could range just into the “conditionally acceptable” to “normally unacceptable” ranges, as defined in Table 3.13-6, construction activities and increases in noise levels from construction activities would be

temporary and construction activities would be limited to the restrictions set by the City of Antioch General Plan. The "Temporary Construction" section of the City of Antioch General Plan states the following:

a. 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.

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

c. 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.

d. 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 manufacturer's 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.

e. 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.

In addition to the restrictions listed in the City of Antioch documents, the Federal Transit Administration offers construction mitigation measures listed in Section 12.1.3 "Mitigation of Construction Noise" in the Transit Noise and Vibration Impact Assessment document (FTA-VA-90-1003-06 May 2006). This document offers the following applicable measures which are included in Mitigation Measure NOI-2:

"Design Considerations and Project Layout:

- Construct noise barriers, such as temporary walls or piles of excavated material, between noisy activities and noise-sensitive receivers.
- Re-route truck traffic away from residential streets, if possible. Select streets with fewest homes, if no alternatives are available.

- Site equipment on the construction lot as far away from noise-sensitive sites as possible.
- Construct walled enclosures around especially noisy activities, or clusters of noisy equipment. For example, shields can be used around pavement breakers, loaded vinyl curtains can be draped under elevated structures.

Sequence of Operations:

- Combine noisy operations to occur in the same time period. The total noise level produced will not be significantly greater than the level produced if the operations were performed separately.
- Avoid nighttime activities. Sensitivity to noise increases during the nighttime hours in residential neighborhoods.

Alternative Construction Methods:

- Avoid impact pile driving where possible in noise-sensitive areas. Drilled piles or the use of a sonic or vibratory pile driver are quieter alternatives where the geological conditions permit their use.
- Use specially quieted equipment, such as quieted and enclosed air compressors, mufflers, on all engines.
- Select quieter demolition methods, where possible. For example, sawing bridge decks into sections that can be loaded onto trucks results in lower cumulative noise levels than impact demolition by pavement breakers."

In conclusion, construction noise would be short-term and intermittent. Furthermore, implementation of Mitigation Measure NOI-2 would ensure compliance with the City's construction noise standards; therefore, impacts would be less than significant with mitigation incorporated. Long-term and permanent noise sources from traffic would be less than significant. Long-term and permanent noise from fixed stationary sources would be less than significant with the incorporation of Mitigation Measure NOI-1.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures

MM NOI-1 **Noise Attenuation.** The noise from all mechanical equipment associated with the proposed project shall comply with Paragraph 11.6.1 "Noise Objective" in the City of Antioch General Plan and Article 19 "Noise Attenuation Requirements" in the Antioch Municipal Code.

MM NOI-2 **Construction Noise Reduction.** Implementation of the following multi-part mitigation plan is required to reduce the potential construction period noise impacts.

- Follow all construction noise requirements listed in the City of Antioch General Plan.
- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction area.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- Construction activities shall be limited to daylight hours between 7 a.m. and dusk. Limit hours of operation of outdoor noise sources through conditions of approval.
- If construction activities are required outside of the daytime working hours allowed within the conditions of approval, the City would notify residents 48 hours in advance. If after-hours construction is required due to an emergency, the City would notify nearby residents immediately.
- The construction contractor would prohibit unnecessary idling of internal combustion engines.

- Where necessary noise-reducing enclosures or temporary barriers would be used around noise-generating equipment. Where feasible existing barrier features (terrain, structures) would be used to block sound transmission especially where sensitive receptors are located less than 50 feet from construction activities and construction noise levels are expected to exceed the maximum exterior noise standard.
- Post a construction site notice that includes the following information: job site address, permit number, name and phone number of the contractor and owner or owner's agent, hours of construction allowed by code or any discretionary approval for the Site, and City telephone numbers where violations can be reported. The notice shall be posted and maintained at the construction site prior to the start of construction and displayed in a location that is readily visible to the public and approved by the City.

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 project, equipment such as cranes, excavators, graders, loaders, backhoes, and bulldozers may be used as close as 527 feet from the nearest sensitive receptor. Construction equipment that would be used during project construction would generate vibration levels between 0.003 PPV and 0.089 PPV at 25 feet, as shown below in Table 3.13-9. All the groundborne vibration levels are below the Federal Transit Administration vibration threshold at which human annoyance could occur of 0.10 PPV. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours as per the City of Antioch General Plan. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. As such, implementation of the proposed project would have a less than significant impact related to vibration.

Table 3.13-9 Vibration Source Levels for Construction Equipment

Type of Equipment	Peak Particle Velocity at 25 Feet	Peak Particle Velocity at 50 Feet	Peak Particle Velocity at 100 Feet	Threshold at which Human Annoyance Could Occur	Potential for Project to Exceed Threshold
Large Bulldozer	0.089	0.031	0.011	0.10	None
Loaded Trucks	0.076	0.027	0.010	0.10	None
Small Bulldozer	0.003	0.001	0.000	0.10	None
Auger/Drill Rigs	0.089	0.031	0.011	0.10	None
Jackhammer	0.035	0.012	0.004	0.10	None
Vibratory Hammer	0.070	0.025	0.009	0.10	None

Source: FTA 2006

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 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 nearest public airports to the project site are the Byron Airport and the Buchanan Field Airport, located approximately 13.4 miles southeast and 16.1 miles west of the project site, respectively. The proposed project is not located within a land use plan for either of these airports and therefore the proposed project would not expose people residing or working in the project area to excessive noise levels. No impact would occur.

No private airstrips or helipads are located within the proximity of the project site. Therefore, no impacts would occur.

Level of Significance Before Mitigation
No Impact.

Mitigation Measures
No mitigation is necessary.

Level of Significance After Mitigation
No Impact.

This page left intentionally blank

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. As of January 1, 2018, the City had an estimated population of 113,061(California Department of Finance 2018). The City experienced its greatest population increase of 45.6 percent between 1990 and 2000. However, since 2000, the City's rate of population growth has declined and was estimated at 13.1 percent between 2000 and 2010 and 4 percent between 2010 and 2014 (City of Antioch 2017). By the year 2025, it is expected the City's population will increase to approximately 118,800 (City of Antioch 2003).

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 2003). 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 2003). In 2010, the Association of Bay Area Governments estimated there were approximately 21,400 jobs. It is projected the total number of jobs in the City would increase to 29,850 by 2025 (City of Antioch 2003).

3.14.2 Methodology

The evaluation of potential population, housing, and employment impacts of the proposed project is based on review of the General Plan, General Plan EIR, and population data compiled by the California Department of Finance. The following impact discussions consider the effects of the proposed project related to employment, population, and housing in the City.

3.14.3 Environmental Impact Analysis

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

Impact POP-1 **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)?**

Impact Analysis

The proposed project does not include the construction of new residential dwelling units and would not permanently increase the City's residential population. Employment opportunities would be limited to construction workers during

the temporary construction phase and employees associated with the hotel, commercial/retail, office, and self-storage facilities. Construction of the proposed project would require the employment of 147 construction workers. Construction workers would be at the project site temporarily during the construction phase and would not impact the City's population. It is anticipated that the construction workforce would already reside in the City or in nearby cities in the Bay Area, and because of the temporary nature are not expected to relocate their households because of project construction. As such, temporary project construction activities are not expected to increase the demand for housing.

The proposed project is anticipated to employ approximately 635 employees under the assumption that all uses are the most employee intensive (see Appendix F). The hotel component of the proposed project is anticipated to generate approximately 143 hotel guests at full capacity. The proposed project would provide new employment opportunities for City residents and would be consistent with the General Plan's projected employment growth and objectives of providing additional jobs to city residents. It is expected employees generated by the proposed project would already reside in or near the City and would not substantially increase the City's population. Furthermore, the addition of 143 hotel guests would be temporary and would not permanently impact the City's population. As such, the proposed project would not directly or indirectly induce the City's population. 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 POP-2 Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Impact Analysis
The project site is vacant and located near other commercial uses. There are no residential dwelling units on-site. As such, the proposed project would not displace any existing housing and no impact would occur.

The project site is vacant and does not contain any on-site residential dwelling units. As such, the proposed project would not result in the displacement of people or require the construction of replacement housing. No impact would occur.

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 to more than 600,000 residents across 9 cities and the unincorporated areas, serving a population of 600,000 across a 304 square-mile area (Contra Costa County 2018). In 2017, CCCFPD responded to nearly 74,000 fire and EMS emergencies and provided expert medical care in the conduct of more than 75,000 ambulance transports (CCCFPD 2014). The CCCFPD operates 25 fire stations. Station No. 88 is located about 1.5 miles to the south of the project site on 4288 Folsom Drive.

Property taxes are collected, and development impact fees are assessed on new development projects in the CCCFPD's service area. Collection of these fees is the primary source of revenue to fund fire and emergency medical services. According to the City's Municipal Code, Title 3 Section 7.06, development impact fees would be imposed and collected at the time the building permit for a new development is issued. As per Title 3 Section 7.05 of the City's Municipal Code, the fire protection facility fee is $329 per 1,000 square feet of commercial space, $219 per 1,000 square feet of industrial space, and $376 per 1,000 square feet of office space.

Police Protection

The Antioch Police Department (APD) provides police services for the City. The APD is located at 300 L Street approximately 4 miles west of the project site. The department is authorized a sworn staff of 104 officers and 33 non-sworn employees, which includes Dispatchers, Community Services Officers, and Administrative Support staff (City of Antioch 2018). In 2017, the average response time was 8:46 minutes, down from 2014 where the average response time was 10:36 minutes. Call dispatched to officer arrival was down to 5:02 minutes in 2017 (East County Today 2017). Overall calls by volume also dropped by 17 percent in 2017 as compared to 2016. However, calls for service went up to with 89,321 calls in 2017, up from the 87,285 calls in 2016 (East County Today 2017). The project site is located within Beat-2 (northeastern area) that contributed to approximately 18 percent of all service calls in 2017 (East County Today 2017).

Schools

The City is served by the Antioch Unified School District, which provides kindergarten through high school education in the City. The Kimball Elementary School, Antioch Middle School, and Antioch High School serve the area surrounding the project site (AUSD 2018). The Kimball Elementary School had an enrollment of approximately 514 students; Antioch Middle School had an enrollment of 746 students; and, Antioch High School had an enrollment of 1,983 students during the 2017-2018 school year (California Department of Education 2018).

Parks

The City owns and administers 28 parks under two categories: Neighborhood Parks and Community Parks. Neighborhood parks are those parks that serve the immediate neighborhood or are a local attraction. Community Parks are community-oriented, with facilities that attract users from all over the City, such as the Antioch Community Park, Antioch City Park, and Prewett Family Aquatic Park. Almondridge Park is a neighborhood park located about one-quarter mile southwest of the project site. Both the City of Antioch General Plan and the Subdivision Ordinance set a standard of 5 acres of parks and open space per 1,000 residents. The Subdivision Ordinance allows the 5 acres to be unimproved land. As of March 2001, the City provided 3.5 acres of improved parkland per 1,000 residents (City of Antioch 2003).

3.15.2 Methodology

The following analysis is based on a review of documents pertaining to the proposed project, including the General Plan, General Plan EIR, City of Antioch Municipal Code, California Department of Education School, MySchoolLocator, and Section 2.0 Project Description of this ISMND. The following impact discussions consider the effects of the proposed project related to public services in the City.

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

Fire service is currently provided to the project site by the CCCFPD. Development of the project could result in an increased demand for fire protection. As required by the California Fire Code, the proposed project would be required to include site-specific design features such as ensuring appropriate emergency access and requiring structures to be built with approved building materials. Conformance with this code reduces the risks associated with fire hazards. The site plan includes access roads for complete access to all buildings in case of emergencies. In addition, payment of fire protection facilities fee as per Title 3 Section 7.05 of the City's Municipal Code would offset fire protection and paramedic services demands. Therefore, there would be no need for new or expanded fire department facilities to serve the proposed project. Impacts would be less than significant

Police Protection

The proposed project would increase the demand for police protection services as it will result in new commercial and office uses on an undeveloped land. As noted in Section 3.14.1, the average response times for the APD has reduced. As discussed in Section 3.13, Population and Housing, the proposed project would not result in an increased population within the APD service area. In addition, the proposed developments would install private security systems or similar security device. Therefore, the project would have a less than significant impact related to the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts.

Schools

The proposed project would involve the development of a business park. No residential uses are proposed and therefore the proposed project would not directly increase the demand on school facilities. Furthermore, it is anticipated employees generated by the proposed project would already reside in or near the City and would not directly or indirectly increase demand for new or expanded school facilities. As such, impacts to school facilities would be less than significant.

Parks

The proposed project does not involve a residential component and would not introduce a new population that would directly create additional demands on existing or planned park facilities. In addition, it is expected employees generated by the proposed project would already reside in or near the City and therefore would not directly or indirectly increase the use of nearby park facilities. Therefore, the project would not significantly affect the City's parkland ratios and would not result in the need for new or expanded park facilities. No impact would occur.

Other Public Facilities

As previously discussed, the proposed project would not generate a residential population that would substantially increase the demand for libraries or other public facilities. In addition, it is expected employees generated by the proposed project would already reside in or near the City and therefore would not directly or indirectly increase the demand on public facilities. Therefore, impacts to other public 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.

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?	☐	☐	☒	☐
b) 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 Recreation Department and the Parks and Recreation Commission maintain the City's 34 local parks, recreational facilities, and open space areas (City of Antioch 2017). Additionally, the East Bay Regional Park District maintains the City's four regional parks. Over 400 acres of parks and open space areas are in the City, 200 of which are developed, and the remaining 200 acres consist of land awaiting development or are areas managed for open space (City of Antioch 2017). The nearest park to the project site is Almondridge Park, a neighborhood park located one-quarter mile southwest of the project site.

3.16.2 Methodology

The following analysis is based on a review of the General Plan and the General Plan EIR. The following impact discussions consider the effect of the proposed project as it relates to recreation.

3.16.3 Environmental Impact Analysis

This section discusses potential impacts related to recreational facilities 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 would involve the development of a business park which would include a range of uses such as a hotel, commercial/retail, office, and self-storage facilities. The proposed project would not include a residential component and would not permanently increase the City's residential population. The proposed project would generate up to 635 employees based on a "worst-case" analysis for the potential uses with the highest employment generation. In addition, the hotel component of the proposed project is expected to temporarily generate approximately 143 hotel guests at full capacity. It is expected employees would already reside in or near the City and would not substantially increase the use of nearby recreation facilities. Furthermore, employees would be working at the proposed project and would have minimal time to access surrounding recreational facilities. The hotel component of the proposed project would provide on-site amenity areas and recreation facilities, including a swimming pool and

gathering areas which would reduce impacts on existing recreation facilities. Therefore, impacts related to parks and recreation 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 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 would involve the development of a business park which would include a range of uses such as a hotel, commercial/retail, office, and self-storage facilities. The proposed project would not include the construction or expansion of park facilities. The hotel component is anticipated to provide on-site amenity areas and recreation facilities typical of a hotel, including a swimming pool and gathering areas. Impacts related to these recreation facilities are addressed as part of the overall proposed project in this ISMND and are 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.

3.17 TRAFFIC AND TRANSPORTATION

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☒	☐	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

3.17.1 Environmental Setting

The following section includes a description of the study area roadway system and existing level of service (LOS) based on information contained in the Traffic Impact Analysis and included as Appendix G.

Existing Roadway Network

East 18th Street is classified by the City as a Primary arterial. It runs in an east-west direction from L Street to SR 160. It is a four-lane roadway with a landscaped median and left-turn pockets in the vicinity of the project site. East 18th Street is designated as a route of regional significance between A Street and SR 160.

Drive-In Way is a short two-lane street that terminates at the north side of the project site. It runs in a north-south direction from East 18th Street to Sakurai Street. It provides access to the project site and runs along the east side of the site.

Sakurai Street runs in an east-west direction along the north side of the project site and will connect to future development to the west.

Phillips Lane is a local roadway and runs in a north-south direction from Oakley Road to East 18th Street. It has two lanes with a two-way-left turn lane and bicycle lanes.

Viera Avenue runs in a north-south direction from Oakley Road to Wilbur Avenue. It is a two-lane roadway with bicycle lanes to the north of East 18th Street.

Bridgehead Road/Neroly Road is a two-lane roadway that runs in a north-south direction. North of the East 18th Street it is named Bridgehead Road and south of East 18th Street it is named Neroly Road.

SR 160 freeway is located just east of the project site with a full interchange at East 18th Street. It generally runs in a north-south direction and provides regional access with a connection to SR 4 approximately 1 mile south of the project site.

Transit Conditions

Tri Delta Transit provides transit services near the project site. There are three local bus routes that serve the study area directly, which primarily run in the east-west direction on East 18th Street. The bus stop closest to the project is located on the north side of East 18th Street just east of Drive-In Way, approximately 200 feet from the edge of the project site. The closest bus stop on the south side of East 18th Street is located near the freeway overpass and is approximately 800 feet from the edge of the project site.

Bicycle and Pedestrian Facilities

In the project vicinity, a sidewalk is present on the north side of East 18th Street, however there are significant gaps on the south side of East 18th Street between Phillips Lane and Neroly Road including the area around the bus stop.

All the signalized study intersections except the SR 160 northbound ramps and Main Street intersection have marked crosswalks with pedestrian signal heads and push buttons. The unsignalized intersection of Drive-In Way and East 18th Street has a marked crosswalk along the north leg only.

A Class II bike lane is present along both sides of Viera Avenue between East 18th Street and Wilbur Avenue, and a Class II bike lane is present the entire length of Phillips Lane.

Existing Level of Service

Existing intersection LOS analysis under existing conditions are shown in Table 3.17-1. Each of the signalized intersections and the stop-controlled intersection in the study area were analyzed using the Highway Capacity Manual (HCM) delay methodology. The table shows that all the study area intersections currently operate at LOS C or better in both AM peak hour and PM peak hour.

Table 3.17-1: Intersection LOS Summary – Existing Conditions

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
1. Bridgehead Road/Neroly Road & Main Street	Signal	20.7	C	22.4	C
2. SR 160 NB Ramps & Main Street	Signal	11.1	B	17.3	B
3. SR 160 SB Ramps & East 18th Street	Signal	17.5	B	15.2	B
4. Drive-In Way/Holub Ln & East 18th Street	Two-Way Stop	13.1	B	13.8	B
5. Phillips Lane & East 18th Street	Signal	7.0	A	5.7	A
6. Viera Avenue & East 18th Street	Signal	7.4	A	8.1	A

Note:
LOS – Level of Service
Delay – Average Vehicle Delay (seconds)

3.17.2 Methodology

The traffic study evaluated the proposed project in accordance with the standards set forth by the City of Antioch and Contra Costa Transportation Authority (CCTA), which serves as the Congestion Management Agency (CMA) for Contra Costa County. The suburban arterial routes within the study area were evaluated in accordance with the East County Action Plan. The scenarios analyzed in the study area are as follows:

- Existing Conditions (2018)
- Near-Term without-Project (Existing Plus Approved and Pending Development Projects)
- Near-Term with Project (Existing Plus Approved and Pending Development Projects with-Project)
- Cumulative (2040) without-Project
- Cumulative (2040) with-Project

In consultation with the City staff, the following five signalized intersections and one unsignalized intersection in the vicinity of the project site were selected for traffic analysis:

1. Bridgehead Road/Neroly Road & Main Street
2. SR 160 NB Ramps & Main Street
3. SR 160 SB Ramps & East 18th Street
4. Drive-In Way/Holub Ln & East 18th Street (unsignalized)
5. Phillips Lane & East 18th Street
6. Viera Ave & East 18th Street

Peak hour turning movements for AM and PM peak hours were obtained from the 2018 traffic study prepared for the 3530-3560 East 18th Street Project, except for the intersection of Bridgehead Road/Neroly Road and Main Street, which was not included in that study. A new peak hour turning movement count was collected for the Bridgehead Road/Neroly Road and Main Street intersection and 24-hour mid-block ADT counts were collected for key study area roadways in October 2018.

3.17.3 Environmental Impact Analysis

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

Impact TRANS-1	**Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?**

Impact Analysis

Construction

Construction trips would be staggered and spread across the construction duration depending on market conditions. As noted in Section 2.0, Project Description, 147 workers are estimated during the peak construction phase. Assuming all workers are solo driving to the project site, there would be 147 two-way trips. Since construction traffic would be temporary and spread across the construction duration, the proposed project would not cause streets in the project area to exceed LOS thresholds. Additionally, the proposed project includes preparation of a TCP that would include detours, emergency access, and appropriate traffic controls during construction. Therefore, the proposed project construction impact would be less than significant.

Operation

Project Trip Generation

The final land uses on the project site would be based on market conditions. Therefore, for the purpose of the traffic study, the highest combination of traffic generating uses is evaluated as a worst-case scenario that includes 33,600 square feet of commercial and retail space, 122,021 square feet of self-storage with rooftop solar, and 112,896 square feet of office space. As shown in Table 3.17-2, the worst-case scenario would generate approximately 3,862 ADT, with 295 trips occurring during the AM peak hour and 368 trips occurring during the PM peak hour.

Table 3.17-2: Project Trip Generation Summary

Scenario	Amount	Unit	AM Peak Hour			PM Peak Hour			ADT
			In	Out	Total	In	Out	Total	
Trip Rates									
Retail Shopping Center (820)	AM: T = 0.50(X) + 151.78 PM: Ln(T) = 0.74 Ln(X) + 2.89 ADT: Ln(T) = 0.68 Ln(X) + 5.57 Where T = trips and X = project size in TSF					62% IB; 38% OB 48% IB; 52% OB			
Mini Warehouse (151)		TSF	0.06	0.04	0.10	0.08	0.09	0.17	1.51
General Office Building (710)		TSF	1.00	0.16	1.16	0.18	0.97	1.15	9.74
Trip Generation									
Retail Shopping Center (820)	33.60	TSF	105	64	169	116	126	242	2,864
Pass-by trips[1]	10%		11	6	17	12	13	25	286
Total Retail Shopping Trips			94	58	152	104	113	217	2,578

Scenario	Amount	Unit	AM Peak Hour			PM Peak Hour			ADT
			In	Out	Total	In	Out	Total	
Mini Warehouse (151)	122.02	TSF	7	5	12	10	11	21	184
General Office Building (710)	112.90	TSF	113	18	131	21	109	130	1,100
Total			**214**	**81**	**295**	**135**	**233**	**368**	**3,862**

Trip Rate Source: Institute of Transportation Engineers (ITE), 10th Edition, 2017, with ITE code in parentheses
1Pass-by trips assumed to be 10% of the retail trip generation
ADT - Average Daily Trips

Project Trip Distribution

Approximately 30 percent of the project trips are anticipated to be oriented towards the west, 10 percent towards the east on Main Street, 20 percent to the north on SR 160, and 40 percent are anticipated to be oriented towards the south.

Projected Level of Service

The traffic impact study evaluated traffic impacts of the proposed project for without-Project and with-Project scenarios for both near-term and long-range cumulative conditions.

Table 3.17-3 provides a comparison between without-Project and the with-Project conditions for the near-term. As shown in the table, the signalized study area intersections would continue to operate at LOS C or better during both the AM and the PM peak hour under the proposed project's near-term conditions. The unsignalized intersection of Drive-In Way and East 18th Street would operate at LOS F during the PM peak hour and would be a potentially significant impact.

Table 3.17-3: Intersection LOS Summary – Near-Term Conditions

Intersection Name	Traffic Control	Without-Project				With-Project				Increase	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM
1. Bridgehead Road/Neroly Road & Main Street	Signal	20.7	C	22.6	C	22.1	C	23.5	C	1.4	0.9
2. Hwy 160 NB Ramps & East 18th Street	Signal	11.1	B	17.4	B	11.4	B	17.5	B	0.3	0.1
3. Hwy 160 SB Ramps & East 18th Street	Signal	17.6	B	15.0	B	18.1	B	15.8	B	0.5	0.8
4. Drive-In Way/Holub Ln & East 18th Street	Two-Way Stop	13.9	B	16.6	C	26.5	D	**79.6**	**F**	12.6	63.0
5. Phillips Lane & East 18th Street	Signal	7.1	A	5.8	A	7.9	A	7.7	A	0.8	1.9
6. Viera Avenue & East 18th Street	Signal	7.6	A	8.4	A	7.6	A	8.8	A	0.0	0.4

Note:
LOS – Level of Service
Delay – Average Vehicle Delay (seconds)

Significant project impacts are shown in bold

Cumulative conditions without-Project and with-Project traffic are shown in Table 3.17-4. A 2040 horizon year is utilized. As shown in the table, under cumulative conditions, the signalized study area intersections would operate at LOS D or better during AM and PM peak hour conditions and would not be significantly impacted by the proposed project. The unsignalized intersection of Drive-In Way and East 18th Street is forecast to operate at an unacceptable LOS E during the AM peak hour and LOS F during the PM peak hour. Therefore, the additional traffic added by the proposed project results in a potentially significant impact at the intersection of Drive-In Way and East 18th Street.

Table 3.17-4: Intersection LOS Summary – Cumulative Conditions (2040)

Intersection Name	Traffic Control	Without-Project				With-Project				Increase	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM
1. Bridgehead Road/Neroly Road & Main Street	Signal	31.1	C	36.3	D	33.0	C	39.1	D	1.9	2.8
2. Hwy 160 NB Ramps & East 18th Street	Signal	16.6	B	26.6	C	17.1	B	27.6	C	0.5	1.0
3. Hwy 160 SB Ramps & East 18th Street	Signal	21.6	C	16.6	B	23.3	C	18.2	B	1.7	1.6
4. Drive-In Way/Holub Ln & East 18th Street	Two-Way Stop	29.0	D	80.9	F	**141.8**	**F**	**1004.6**	**F**	112.8	923.7
5. Phillips Lane & East 18th Street	Signal	8.9	A	8.9	A	9.7	A	10.5	B	0.8	1.6
6. Viera Avenue & East 18th Street	Signal	8.9	A	45.3	D	9.2	A	50.1	D	0.3	4.8

Note:
LOS – Level of Service
Delay – Average Vehicle Delay (seconds)
Significant project impacts are shown in **bold**

Mitigation measure TRANS-1 requires signalization of 18th Street and Drive-In Way intersection that would reduce impacts to less than significant. A signal warrant analysis was conducted for the intersection, which determined that the traffic volumes meet the peak hour warrant criteria for near-term conditions and cumulative conditions with the proposed project. The identified improvement would fully mitigate the proposed project's significant impact under both the near-term conditions and cumulative conditions as shown in Table 3.17-5 and Table 3.17-6, respectively. Therefore, impacts would be less than significant with mitigation.

Table 3.17-5: Intersection LOS Summary – Near-Term Conditions with Mitigation

	Existing				Cumulative with Project with Mitigation				Net Change with Mitigation	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
Intersection Name	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM
Holub Ln/Drive-In Way & E 18th St	13.9	B	16.6	C	14.0	B	15.9	B	0.1	-0.7

Table 3.17-6: Intersection LOS Summary – Cumulative Conditions with Mitigation

	Existing				Cumulative with Project with Mitigation				Net Change with Mitigation	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
Intersection Name	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM
Holub Ln/Drive-In Way & E 18th St	22.6	C	33.1	D	17.6	B	18.7	V	-5.0	-14.4

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures

MM TRANS-1 **Traffic Signal.** Prior to issuing a certificate of occupancy for any business park use obtaining access from Drive-In Way, the project applicant shall construct or shall pay the City of Antioch to construct a traffic signal at the intersection of Holub Lane/Drive-In Way and East 18th Street. The traffic signal shall be installed when minimum traffic signal warrant criteria is met as determined by the City Traffic Engineer.

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

Impact TRANS-2 Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Impact Analysis
Contra Costa Transportation Authority serves as the CMA for Contra Costa County. As the CMA, the CCTA must, under State law, prepare a CMP and update it every two years. The CMP is meant to outline the CCTA's strategies for managing the performance of the regional transportation within the County. A CMP must contain several components: traffic LOS standards for State highways and principal arterials; multi-modal performance measures to evaluate current and future systems; a seven-year capital program of projects to maintain or improve the performance of the system or mitigate the regional impacts of land use projects; a program to analyze the impacts of land use decisions; and a travel demand element that promotes transportation alternatives to the single-occupant

vehicle. None of the study intersections are part of the CMP network, therefore the proposed project would not conflict with any applicable CMP and would have 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 TRANS-3 Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

Impact Analysis
The nearest public airports to the project site are the Byron Airport and the Buchanan Field Airport, located approximately 13.4 miles southeast and 16.1 miles west of the project site, respectively. The proposed project would not involve use of air transit, nor is it expected to cause any change in air traffic patterns. As such, the proposed project would not result in any changes to air traffic patterns nor would it result in any associated safety risks. 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 TRANS-4 Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Impact Analysis
During construction, the proposed project would use heavy construction equipment on local roadways and major arterials. The use of roadways by heavy construction equipment can increase the risk to drivers, cyclists, and pedestrians in the project area. The proposed project includes preparation of a TCP that would include detours, emergency access, and appropriate traffic controls during construction. An encroachment permit would be obtained from the City for any staging/construction-vehicle parking on adjacent streets, if necessary. Notices regarding closure to the public of street parking would be posted in compliance with City regulations in advance of use. Staging areas would be returned to pre-construction condition upon project completion. Therefore, project construction would not create a transportation hazard, and the impact would be less than significant.

The proposed project would be compatible with the kind of traffic generated by the surrounding commercial developments in the project vicinity. The proposed project does not propose to make changes to a roadway that would create road hazards or alter design features developed to mitigate such hazards.

Vehicular access to the project site would be provided via three driveways on East 18th Street, two driveways on Drive-in Way and a driveway on Sakurai Street as shown in the site plan. The west and center driveways on the East 18th Street provide access to the hotel and/or commercial retail sites which are spaced approximately 350 feet from each other. The east driveway on East 18th Street and the south driveway on Drive-in Way provide access to the self-storage facility and are approximately 40 feet and 500 feet away respectively, from the Drive-in Way and East 18th Street intersection. Based on the site plan, the east driveway on the East 18th Street is the main entrance and provides parking to the self-storage. The Business Park is accessed through the north driveway on Drive-In Way and the driveway on Sakurai Street. The distance between the two driveways on Drive-In Way is approximately 250 feet. Due to the relatively short distance along East 18th Street between the self-storage facility driveway (east driveway) and Drive-In Way (approximately 40 feet); this short distance results in a potential hazard and a potentially significant impact. It is recommended that the driveway be relocated, or access provided to the commercial retail parcel for use of a shared driveway (center driveway), thereby reducing the total number of driveways along East 18th Street to two. This recommendation has been incorporated into the project mitigation measure TRANS-2. With the incorporation of this measure the impact would be less than significant.

All the project driveways would have a width of more than 24 feet which would meet the City's design standards for minimum driveway width of 20 feet. The Fire Department will review the site plan to ensure adequate access for fire trucks. Adequate sight distance should be provided at the project driveways. There are no roadway curves, on-street parking, or landscape features that appear to obstruct the vision of drivers adjacent to the project site. There are no landscape features shown on the site plan that appear to interfere with the sight distance at any of the driveways. To ensure the safety of the drivers, the sight distance triangle should be clear of any objects that would obstruct the vision of exiting drivers.

The site would have north-south and east-west drive aisles that extends the full length of the project site along the edges of each land use area. All drive aisles would have 90-degree perpendicular parking spaces. The drive aisle width (more than 24 feet) provides sufficient space for vehicles to back out of the parking stalls. The plan would provide vehicle traffic with adequate connectivity through the parking areas within each land use area. As mentioned above, the hotel and/or commercial, self-storage and business park areas are all fully separated with their own driveway access. There is no on-site connectivity between the areas, however as noted above, it is recommended that access be provided between the self-storage facility parking lot and the commercial retail parcel for use of a shared driveway.

With the installation of the new traffic signal at the intersection of East 18th Street and Drive-In Way, there are no apparent issues regarding conflicting movements, delay and vehicles queueing on Drive-In Way with the nearby and adjacent business/property that has access via Drive-In way.

Level of Significance Before Mitigation
Potentially Significant Impact.

MM TRANS-2 **Driveway Relocation.** Prior to issuance of grading permits for the self-storage facility, the project applicant shall amend their design review application to relocate the self-storage facility driveway on East 18th Street, or have access provided through a shared driveway from the commercial/retail parcel, thereby reducing the total number of driveways along East 18th Street.

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

Impact TRANS-5 Result in inadequate emergency access?

Impact Analysis

Construction and operation of the proposed project would not affect streets or otherwise affect emergency access routes. The proposed project would be designed to incorporate all required CCCFPD standards to ensure the project would not result in hazardous design features or inadequate emergency access to the project site or areas surrounding the project site. Construction of the project includes preparation of a TCP that would ensure that emergency access is provided at all times. Therefore, 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-6 Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

Impact Analysis

Tri Delta Transit provides transit services near the project site. There are three local bus routes that serve the study area directly, which primarily run in the east-west direction on East 18th Street. In addition, there are Class II bike lanes in the project vicinity. Additionally, the project would be required to install bicycle racks per the City's municipal code. No impact related to alternative modes of transportation would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No 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

Refer to Section 3.5 Cultural Resources for a description of the environmental setting. This section describes potential tribal cultural resources at the project site and includes a preliminary analysis of potential impacts to these resources from the construction and operation of project facilities. Local tribes or tribal representatives are the authority on identifying tribal cultural resources, and a NAHC Sacred Lands Search was requested on October 9, 2018, to identify the appropriate tribal contacts for the purposes of identifying tribal cultural resources. The City of Antioch will also initiate tribal consultation as stipulated in CEQA.

3.18.2 Methodology

To identify previously recorded cultural resources within the project area, a records search was conducted at the NWIC for the project site and a one-quarter-mile radius of it. In addition, archival and background literature research (i.e., archaeological, historic, and ethnographic information) was conducted to determine the potential for cultural resources being encountered within the project area. A pedestrian survey of the project site was also conducted on October 11, 2018, to identify any cultural resources not previously recorded within its boundaries (Appendix C).

The NAHC was contacted on October 9, 2018, to request a search of the Sacred Lands File and a list of Native American contacts who might have knowledge of tribal cultural resources at the project site. The request included a

description of the project as well as a project location map (See Section 3.5 Cultural Resources). The NAHC responded on October 18, 2018, stating negative results. The NAHC included a list of six individuals and tribes affiliated with the area. The NAHC recommended contacting those tribes for additional information about any known tribal resources. Letters to the tribal representatives were sent on October 26, 2018 by certified mail. The letters were received by the recipients on October 29, 2018 and October 30, 2018. No responses from the tribal representatives has been received to date.

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	**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?**

Impact Analysis

The archival records search performed as part of the cultural resources analysis resulted in the identification of no known tribal cultural resources within or near the study area. Furthermore, initial field review of the project area noted that the project site is previously disturbed and did not exhibit any signs of previously unidentified subsurface tribal cultural resources within or adjacent to the project area. Thus, the proposed project is not anticipated to impact any known or potential tribal cultural resources.

However, subsurface construction activities such as trenching and grading associated with the proposed project could potentially damage or destroy previously undiscovered unique tribal cultural resources. Therefore, Mitigation Measure CUL-1 and Mitigation Measure CUL-2 are proposed, requiring implementation of standard inadvertent discovery procedures and worker awareness training to reduce potential impacts to previously undiscovered subsurface unique tribal cultural resources. With the implementation of Mitigation Measure CUL-1 and Mitigation Measure CUL-2, potential impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure CUL-1 and Mitigation Measure CUL-2 are required. Refer to Section 3.5, Cultural Resources, for complete details pertaining to these mitigation measures.

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 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

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 Sanitation District (DDSD) owns and operates the regional interceptors and the WWTP. DDSD is located on the Pittsburg-Antioch border and serves nearly 200,000 residents in the communities of Pittsburg, Antioch and Bay Point (DDSD 2009). 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). In 2015, the average dry weather flow to the WWTP including the City of Pittsburg was 13.2 mgd (City of Antioch 2016).

Water Supply

The City of Antioch provided waster service to 31,798 customers as of 2015. The primary source of raw surface water is the Sacramento-San Joaquin Delta and the water purchased from the Contra Costa Water District (CCWD) through the Contra Costa Canal and Los Vauqueros Reservoir. 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 II. Zone II serves primarily residential and commercial uses with some industrial uses along the eastern end of Wilbur Avenue (City of Antioch 2016). 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. According to the City's Urban Water Management Plan, the single dry year supply would be same as normal year demand; and multiple dry year supply would reduce by 15 percent.

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. 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 cubic yards. The remaining capacity at the landfill in 2004 was 63 million cubic yards (CalRecycle 2018).

Stormwater System

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. These trunk lines are independent from the wastewater collection system. The stormwater trunk lines discharge to channels owned and maintained by both the City of Antioch 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.

3.19.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the General Plan, General Plan EIR, City of Antioch 2015 Urban Water Management Plan, and Section 2.0 Project Description of this ISMND. The following impact discussions consider the effects of the proposed project related to utilities and service systems in the City.

3.19.3 Environmental Impact Analysis

This section discusses potential impacts on 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 proposed project would result in commercial development on an undeveloped site and would generate additional amount of wastewater required to be treated at the WWTP. Based on the City's General Plan wastewater generation rate of 1,000 gallons per acre, the proposed project would generate less than 0.1 mgd of wastewater (City of Antioch 2003). As noted in Section 3.18.1, average dry weather flow to the WWTP is 13.2 mgd with a remaining capacity of approximately 6 mgd. The proposed project would generate a fraction of the available wastewater treatment capacity and therefore, would not exceed the WWTP's capacity. Since the WWTP is operating well below its maximum

capacity, the project would not result in the WWTP's exceeding wastewater treatment requirements; therefore, impacts would be less than significant.

The WWTP has a treatment capacity of 19.5 mgd. The project would generate only a fraction of the WWTP's capacity and would not require construction of new treatment facilities. There are existing sewer lines that are adequately sized that are located in Drive-In Way and East 18th Street that would serve the proposed development.

Water Treatment

The proposed project would generate a demand for approximately 30,000 gallons of water per day upon full buildout. Based on the City's 2015 Urban Water Management Plan (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 2040 (City of Antioch 2016). The project would, therefore, be adequately served by the City's existing infrastructure would not require the construction of new water or wastewater treatment facilities or expansion of existing facilities. Impacts would be less than significant.

Stormwater Drainage

The current topography of the existing site drains from southwest to northeast. The proposed project would include a system of proposed bio-retention areas that will collect, treat, and convey stormwater runoff from the project site to the existing stormwater system. Stormwater runoff from roofs, pavement surface, and landscaping will flow into bio-retention areas to be treated. The bio-retention areas would be sized to function as stormwater treatment and flow control. Therefore, the impacts associated with stormwater drainage facilities would be less than significant.

Electric Power and Natural Gas

As described under Section 3.6 Energy, PG&E is the electric and natural gas provider in the City of Antioch. Although the proposed project will demand additional electricity and natural gas, the City's 2017 General Plan Update found that buildout of the General Plan would not exceed the demand for electricity and natural gas estimated in its 2003 General Plan. 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. PG&E also recently completed system updates to ensure adequate capacity to serve the Delta Distribution Planning Area. 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 AT&T to the project site. There are existing facilities on East Sakurai Street and Drive-In Way that have capacity to serve the project. In addition, there are existing broadband connections to the project site on East Sakurai Street and Drive-In Way. Any additional connections that are deemed necessary during final site design would be placed within utility easements. No expanded capacity would be required for telecommunication facilities that could potentially cause a significant environmental impact.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
No mitigation is necessary.

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 2015 UWMP calculates the city's past, current, and projected water use and water supply through 2040. According to the 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 2040 (City of Antioch 2016). The UWMP contemplated the build out of the uses and densities that were envisioned in the City's 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. 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 WWTP has a permitted treatment capacity of 19.5 mgd. 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. The proposed project would generate 0.1 mgd 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

Based on the CalEEMoD default estimates, the proposed project would generate no more than 1 ton per day of solid waste that 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 63 million cubic yards. 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. Additionally, pursuant to the City's Municipal Code Section 6-3.02 Solid Waste and Recycling; Mandatory Service, future land uses within the Business Park would be required to contract with a provider for solid waste and recycling services. The City's Construction and Demolition (C&D) Debris Recycling Ordinance Waste Management Plan would require that 65 percent of job-site waste is diverted from the landfill through recycling. Pursuant to the City's C&D Ordinance, the construction contractor would be required to prepare and submit a Waste Management Plan. The Waste Management Plan (WMP) shall identify the types of C&D debris materials that will be generated for disposal and recycling.

The City's recycling efforts have been successful as the current per capita disposal rate is 2.9 pounds per person per day and the State mandated target is 4.2 pounds per person per day. 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 statutes and regulations related to solid waste?

Impact Analysis
The proposed project would include solid waste and recycling facilities at a readily available location. State Assembly Bill 939 requires diversion of 65 percent of construction waste materials generated during the project. Title 6, Chapter 3 of the City's Municipal Code also requires the construction contractor to prepare and submit a Waste Management Plan. The Waste Management Plan (WMP) shall identify the types of C&D debris materials that will be generated for disposal and recycling. The 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

The California Department of Fire and Forestry Protection does not identify the City in a local or state very high fire hazard severity zone (CAL FIRE 2007, 2009). According to the General Plan EIR, the southern and unincorporated portions of the city are the most susceptible to wildland fire hazards because these areas contain rural, hilly terrain, and are adjacent to natural grasslands and brush (City of Antioch 2003). The project site is in the northeast portion of the City and located in an urban area near other commercial uses. In addition, the dry, potentially-flammable, vegetation currently on-site would be removed with development of the proposed project.

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 the California Department of Forestry and Fire Protection (CALFIRE) Fire and Resource Assessment Program mapping of Fire Hazard Severity Zones in State Responsibility Areas (SRA) . The following impact discussions consider the effects of the proposed project related to wildfire.

3.20.3 Environmental Impact Analysis

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

Impact WFIRE-1	**Substantially impair an adopted emergency response plan or emergency evacuation plan?**

Impact Analysis

The project site is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones. The proposed project would not impair and adopted emergency response plan or emergency evacuation plan. 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 WFIRE-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 relatively flat with the elevation ranging from 37 feet to 25 feet. The project site is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones. The proposed project would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildifire. 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 WFIRE-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 located in or near state responsibility areas or lands classified as very high fire hazard severity zones. The proposed project would not require the installation of or maintenance of associated infrastructure that would exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. 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 WFIRE-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 topography of the project site is relatively flat with the elevation ranging from 37 feet to 25 feet. The project site is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones. 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. No impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

This page left intentionally blank

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?	☐	☒	☐	☐

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?

Impact Analysis

As evaluated in this ISMND, the 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. Mitigation Measures BIO-1, CUL-1, and CUL-2 are included herein to lessen the significance of potential impacts to special-status species and habitats as well as the impacts of inadvertent discovery of cultural resources to a less-than-significant level.

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 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 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 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.

c) Does the project have environmental impacts which will cause substantial adverse impacts on human beings, either directly or indirectly?

Impact Analysis

The project would not directly or indirectly cause substantial adverse effects on human beings. Air quality, greenhouse gasses, hazardous materials, and/or noise would have the only potential effects through which the project could have a substantial effect on human beings. However, all potential effects of the project related to air quality, greenhouse gases, noise, and hazardous materials are identified as less than significant or less than significant with the implementation of mitigation. The impact analysis included in this ISMND indicates that for all other resource areas, the project would either have no impact, no significant impact, or—for impacts that would not affect human beings—less than significant impact with mitigation incorporated.

4.0 REFERENCES

Multi-Section

City of Antioch. 2003. Antioch General Plan Update EIR. Accessed October 2, 2018. https://www.antiochca.gov/fc/community-development/planning/Draft-General-Plan-EIR.pdf.

City of Antioch. 2017. Citywide General Plan Land Use Element Update. Accessed October 1, 2018. https://www.antiochca.gov/community-development-department/planning-division/environmental-documents/

City of Antioch Municipal Code. http://library.amlegal.com/nxt/gateway.dll/California/antioch/cityofantiochcaliforniacodeofordinances?f=templates$fn=default.htm$3.0$vid=amlegal:antioch_ca. Accessed October 23, 2018

Section 3.1: Aesthetics

Some references are listed under Multi-Section.

California Department of Transportation (Caltrans). 2018. California Scenic Highway Mapping System. Accessed October 2018. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/.

Section 3.2: Agriculture and Forestry Resources

Some references are listed under Multi-Section.

California Department of Conservation (DOC). 2016. California Important Farmland Finder map. Accessed October 1, 2018. https://maps.conservation.ca.gov/DLRP/CIFF/.

City of Antioch. 2018. City of Antioch Interactive GIS Map. Accessed October 1, 2018. http://www.antiochprospector.com/

Contra Costa County. 2016. Contra Costa County 2016 Agricultural Preserves Map. Accessed October 1, 2018. http://www.co.contra-costa.ca.us/DocumentCenter/View/882/Map-of-Properties-Under-Contract?bidId=

Section 3.3: Air Quality

Bay Area Air Quality Management District (BAAQMD). 2016a. About Air Quality. December 2016. http://www.baaqmd.gov/about-air-quality. Accessed October 27, 2018.

_____. 2016b. Planning Healthy Places: A Guidebook for addressing local sources of air pollutants in community planning. May 2016. http://www.baaqmd.gov/~/media/files/planning-and-research/planning-healthy-places/php_may20_2016-pdf.pdf?la=en. Accessed October 27, 2018.

_____. 2017a. 2017 Clean Air Plan, Spare the Air, Cool the Climate. April 2017. http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en. Accessed October 27, 208.

_____.2017b. Air Quality Standards and Attainment Status. January 2017. http://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status#eleven. Accessed October 27, 2018

_____. 2017c. California Environmental Quality Act Air Quality Guidelines. May 2017. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed October 27, 2018.

California Air Resources Board (CARB). 2016. Ambient Air Quality Standards. May 2016. https://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed October 27, 2018.

USGS 2011. Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California. Website: ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ms/59/MS59_Plate.pdf. Accessed October 3, 2018

Section 3.4: Biological Resources

Bechard, M. J., C. S. Houston, J. H. Saransola, and A. S. England. 2010. Swainson's Hawk (*Buteo swainsoni*), version 2.0. In the Birds of North America (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA.

California Department of Fish and Wildlife (CDFW). 2018a. RareFind 5 and Biogeographic Information and Observation System Version 5.66.18. Electronic Database. Available: https://www.wildlife.ca.gov/data/bios. Accessed October 24, 2018.

_____. 2018b. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline. Accessed October 24, 2018.

_____. 2018c. Special Vascular Plants, Bryophytes, and Lichens List. Quarterly publication. 127 pp. Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline. Accessed October 24, 2018.

_____. 2018d. Special Animals List. Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline. Accessed October 24, 2018.

Dunk, J.R. 1995. White-tailed Kite (*Elanus leucurus*), version 2.0. In The Birds of North America (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA.

East Contra Costa County Habitat Conservancy. 2006. Final East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan. October 2007. Available: http://www.co.contra-costa.ca.us/depart/cd/water/HCP/archive/final-hcp-rev/final_hcp_nccp.html. Accessed October 24, 2018.

Harris, L. D. and Gallagher, P. B. 1989. New initiatives for wildlife conservation: the need for movement corridors. In Preserving communities and corridors: 11–34. MacKintosh, G. (Ed.). Washington, DC: Defenders of Wildlife.

U.S Fish and Wildlife Services (USFWS). 2018. Information for Planning and Consultation. https://ecos.fws.gov/ipac/ Accessed October 25, 2018.

Yosef, R. 1996. Loggerhead Shrike (*Lanius ludovicianus*), version 2.0. In The Birds of North America (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA.

Section 3.5: Cultural Resources

Beck and Haase. 1974. Historical Atlas of California. University of Oklahoma Press, Norman.

Contra Costa County. 2010. General Plan, Chapter 9. Open Space Element. http://www.co.contra-costa.ca.us/DocumentCenter/View/30919/Ch9-Open-Space-Element?bidId=, Accessed October 11, 2018.

Erlandson, Jon M., Torben C. Rick, Terry L. Jones, and Judith F. Porgasi. 2007. One If by Land, Two If by Sea: Who Were the First Californians? In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn A. Klar, pp. 53-62. Altamira Press A Division of Rowman & Littlefield Publishers, Inc., Lanham, MD.

Golla, V, 2011. California Indian Languages. University of California Press, Berkeley.

Kyle, D. E. 2002. Historic Spots in California. Stanford University Press, Stanford, California.

Levy, R. 1978. Eastern Miwok. In California, edited by Robert F. Heizer, pp. 398-413. Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Moratto, M.J. 1984. California Archeology. Academic Press, Orlando.

Nationwide Environmental Title Research (NETR). Historic Aerials. 2018. http://www.historicaerials.com, accessed October 19, 2018.

Rosenthal, J., White, G., and M. Sutton. 2007. The Central valley: A View from the Catbird's Seat. In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn A. Klar, pp. 147-163. Altamira Press A Division of Rowman & Littlefield Publishers, Inc., Lanham, MD.

Samuelson, Ann, Carolyn Rice, and William Self. 1994. William Self Associates. Archaeological Survey Report, Future Urban Area 1, Antioch, Contra Costa County, California.

Schoenherr, A.A. 1992. A Natural History of California. University of California Press, Berkeley.

Smallwood, J. 2004. Primary Record for P-07-000806. On file at the NWIC, Sonoma State University, Rohnert Park, CA.

Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee (SVP). 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Electronic document. Available: https://vertpaleo.org/Membership/Member-Resources/SVP_Impact_Mitigation_Guidelines.aspx.

United States Department of Agriculture Natural Resources Conservation Service. 2017. Web Soil Survey. Electronic document. Available: https://casoilresource.lawr.ucdavis.edu/soil_web/ssurgo.php?action=explain_mapunit&mukey=455786&ogc_fid=1423988.

United States Department of the Interior, Geological Survey (USGS). Retrieved from https://mrdata.usgs.gov/geology/state/sgmc-unit.php?unit=CAQs2;0

_____. 1908. Antioch, CA Quadrangle, 1:62500 (reprinted 1943). Washington, D.C.

_____. 1908. Pittsburg, CA Quadrangle, 1:62500 (reprinted 1943). Washington, D.C.

_____. 1953. Pittsburg, CA Quadrangle, 1:62500. Washington, D.C.

_____. 1918. Antioch North, Quadrangle, 1:31680. Washington, D.C.

_____. 1953. Antioch North, CA Quadrangle, 7.5-minute Series (surveyed, reprinted 1968, and 1978). Washington, D.C.

Section 3.6: Energy

Some references are listed under Multi-Section.

Pacific Gas and Electric (PG&E). PG&E Clean Energy Deliveries Already Meet Future Goals. https://www.pge.com/en/about/newsroom/newsdetails/index.page?title=20180220_pge_clean_energy_deliveries_already_meet_future_goals. Accessed January 21, 2019.

PG&E. 2007. Pacific Gas & Electric Company's Delta DPA Capacity Increase Substation Project. http://www.cpuc.ca.gov/environment/info/aspen/deltasub/deltasub.htm. Accessed January 21, 2019.

Section 3.7: Geology and Soils

Some references are listed under Multi-Section.

California Department of Conservation (DOC). 2010. Geologic Map of California. Available: http://maps.conservation.ca.gov/cgs/gmc/

United States Geological Survey (USGS). 2017. U.S. Quaternary Faults and Folds Database. Accessed October 5, 2018. https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=db287853794f4555b8e93e42290e9716.

_____. 2018. Areas of Land Subsidence in California. Accessed October 8, 2018. https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html.

University of California Museum of Paleontology. 2018. Neogene Mammal Mapping Portal (Neomap). Electronic document. Available: http://www.ucmp.berkeley.edu/neomap/.

Wagner, D.L., C.W. Jennings, T.L. Bedrossian, and E.J. Bortugno (compilers). 1981. Geologic Map of the Sacramento Quadrangle. California Geological Survey, Regional Geologic Map No. 1A, 1:250,000 scale.

Section 3.8: Greenhouse Gases

Some references are listed under Multi-Section.

BAAQMD. 2017a. 2017 Clean Air Plan, Spare the Air, Cool the Climate. April 2017. http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en. Accessed October 27, 208.

CARB. 2018 Edition, California Greenhouse Gas Emission Inventory: 2000-2016. 2018. https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2016/ghg_inventory_trends_00-16.pdf. Accessed October 28, 2018.

Section 3.9: Hazards and Hazardous Materials

Some references are listed under Multi-Section.

California Department of Fire and Forestry Protection (CAL FIRE). 2007. Fire Hazard Severity Zones in State Responsibility Area map. Accessed October 3, 2018. http://frap.fire.ca.gov/webdata/maps/contra_costa/fhszs_map.7.pdf

_____. 2009. Very High Fire Hazard Severity Zones in Local Responsibility Areas map. Accessed October 3, 2018. http://frap.fire.ca.gov/webdata/maps/contra_costa/fhszl_map.7.pdf

Department of Toxic and Substances Control (DTSC). 2018. EnviroSTOR Data Management System. Accessed October 3, 2018. https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=antioch%2C+ca.

State Water Resources Control Board (SWRCB). 2018. GeoTracker Data Management System. Accessed October 3, 2018. https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=antioch%2C+ca

Tollfree Airline. 2018. Contra Costa County Public and Private Airports, California. Accessed October 3, 2018. http://www.tollfreeairline.com/california/contracosta.htm.

Section 3.10: Hydrology and Water Quality

Some references are listed under Multi-Section.

BKF Engineers. 2018. Preliminary Stormwater Control Plan For Acorn Business Park Development Plans.

East Contra Costa County Integrated Regional Water Management. 2018. Sustainable Groundwater Management Planning for the Tracy Subbasin. https://www.eccc-irwm.org/sgma.html. Accessed January 21, 2019.

Flood Emergency Management Agency (FEMA). 2018. FEMA Flood Map Service Center: Flood Insurance Rate Map #06013C0144G. Accessed October 26, 2018. https://msc.fema.gov/portal/search?AddressQuery=antioch.

Section 3.11: Land Use

References are listed under Multi-Section.

Section 3.12: Mineral Resources

Some references are listed under Multi-Section.

California Department of Conservation (DOC). 1998. DOC Mineral Land Classification map of Aggregate Resources, USGS 7.5 Minute Antioch North Quadrangle map. Accessed October 2, 2018. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sr/SR_146-2/SR-146_Plate_2.25.pdf.

_____. 2015. DOC Mineral Land Classification map. Accessed October 2, 2018. https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps.

_____. 2018. DOC Division of Mine Reclamation Assembly Bill 3098 list. Accessed October 2, 2018. ftp://ftp.consrv.ca.gov/pub/omr/AB3098%20List/AB3908List.pdf

Section 3.13: Noise

Some references are listed under Multi-Section.

California Department of Transportation (Caltrans). 2004. Transportation-and Construction-Induced Vibration Guidance Manual. 2004. http://www.dot.ca.gov/hq/env/noise/pub/vibrationmanFINAL.pdf. Last Accessed October 23, 2018

_____. 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol. http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf. Last Accessed October 23, 2018

Contra Costa County General Plan. http://www.co.contra-costa.ca.us/DocumentCenter/View/30921/Ch11-Noise-Element?bidId=. Accessed October 23, 2018

Contra Costa County Municipal Code. https://library.municode.com/ca/contra_costa_county/codes/ordinance_code. Accessed October 23, 2018

Egan, David M. Architectural Acoustics. J. Ross Pub., Pub 2007

Federal Highway Administration (FHWA). 2006. Construction Noise Handbook. http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/. Last Accessed October 23, 2018

_____. 2011. Highway Traffic Noise. http://www.fhwa.dot.gov/environment/noise/noise_barriers/design_construction/keepdown.cfm. Last Accessed October 23, 2018

Federal Transit Administration (FTA). 2006. Transit Noise and Vibration Impact Assessment. May 2006. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf. Accessed October 23, 2018

State of California. Governor's Office of Planning and Research. 2003. General Plan Guidelines. http://opr.ca.gov/docs/General_Plan_Guidelines_2003.pdf. Last Accessed October 23, 2018

Section 3.14: Population and Housing

Some references are listed under Multi-Section.

California Department of Finance. 2018. Report E-1 Population Estimates for Cities, Counties, and the State January 1, 2017 and 2018. Accessed October 3, 2018. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/.

Section 3.15: Public Services

Antioch Unified School District (AUSD). 2018. Antioch Unified School District – My School Locator. https://betalocator.decisioninsite.com/?studyID=85002. Accessed, October 24, 2018.

California Department of Education. 2018. 2017-18 Enrollment by Grade – Antioch Unified District Report (07-61648). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdLevels.aspx?cds=0761648&agglevel=district&year=2017-18. Accessed, October 24, 2018.

_____. 2018. About APD. https://www.antiochca.gov/police/about-apd/. Accessed, October 23, 2018.

Contra Costa County. 2018. Fire Protection Districts. http://www.co.contra-costa.ca.us/1550/Fire-Protection-Districts. Accessed October 23, 2018.

Contra Costa County Fire Protection District. 2014. Deputy Fire Chief's Message. https://www.cccfpd.org/deputy-chiefs-message.php. Accessed October 23, 2018.

East County Today. 2017. Antioch Police Chief Reports Violent Crime Down 20% in 2017, Calls for Service Increase. https://eastcountytoday.net/antioch-police-chief-reports-violent-crime-down-20-in-2017-calls-for-service-increase/. Accessed October 24, 2018.

Section 3.16: Recreation

Some references are listed under Multi-Section.

Section 3.17: Transportation and Traffic

Stantec. 2018. Traffic Impact Analysis. November 2018.

Section 3.18: Tribal Cultural Resources

References are listed under Multi-Section.

Section 3.19: Utilities and Service Systems

Some references are listed under Multi-Section.

CalRecycle. 2018. SWIS Facility Detail Keller Canyon Landfill (07-AA-0032). https://www2.calrecycle.ca.gov/swfacilities/Directory/07-AA-0032. Accessed, October 25, 2018.

City of Antioch. 2016. Final 2015 Urban Water Management Plan, May 2016.

Delta Diablo Sanitation District (DDSD). 2009. Transforming Wastewater to Resources. https://www.deltadiablo.org/about-us/latest-news/delta-diablo-sanitation-district-receives-national-platinum-award. Accessed, October 24, 2018.

San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2014. Order No. R2-2014-0030 NPDES No. CA0038547. file://us1304-f02/workgroup/1857/active/185704284/07_CEQA/Reference%20Library/Utilities/SFRWQCB_2014_R2-2014-0030.pdf. Accessed, October 24, 2018.

Section 3.20: Wildfire

Some references are listed under Multi-Section.

California Department of Forestry and Fire Protection (CAL FIRE). 2007. Contra Costa County Fire Hazard Safety Zones in State Responsibility Areas. http://frap.fire.ca.gov/webdata/maps/contra_costa/fhszs_map.7.pdf. Accessed January 21, 2019.

California Department of Forestry and Fire Protection (CAL FIRE). 2009. Contra Costa County Very High Fire Hazard Severity Zones in Local Responsibility Areas. http://frap.fire.ca.gov/webdata/maps/contra_costa/fhszl_map.7.pdf. Accessed January 21, 2019.

This page left intentionally blank

5.0 LIST OF PREPARERS

Principal / Project Manager ..... Trevor Macenski

Senior Project Manager/ Senior Air Quality Analyst ..... Elena Nuño

Principal Traffic Engineer ..... Daryl Zerfass

Senior Archaeologist ..... Esme Hammerle

Senior Biologist ..... Loni Cooper

Senior Noise Analyst ..... Tracie Ferguson

Senior Environmental Planner ..... Tina Garg

Senior Transportation Planner ..... Sandhya Perumalla

Environmental Planner / GIS Analyst ..... Kaela Johnson

Environmental Planner/Biologist ..... Katelyn Peterson

Environmental Scientist ..... Anna Radonich

Environmental Scientist ..... Willow Campbell

Technical Editor ..... Donna Watson

This page left intentionally blank.

APPENDICES

This page left intentionally blank

Appendix A AIR QUALITY AND GREENHOUSE GAS ASSUMPTIONS AND CALEEMOD RESULTS

Appendix B BIOLOGICAL RESOURCES

C.1 BIOLOGICAL RESOURCES ASSESSMENT

C.2 ADDITIONAL SPECIES ANALYZED LIST

P

Appendix C CULTURAL RESOURCES

C.1 TECHNICAL REPORT

C.2 ADDITIONAL CITY OF ANTIOCH HISTORY

Appendix D STORMWATER CONTROL PLAN

Appendix E NOISE MODELING RESULTS

Appendix F EMPLOYMENT ESTIMATES

Appendix G TRAFFIC IMPACT ANALYSIS