CITY OF ANTIOCH
COMMUNITY DEVELOPMENT DEPARTMENT

Delta Fair Village Project

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

May 2020

RANEY PLANNING & MANAGEMENT, INC. 20 years
1501 Sports Drive, Suite A, Sacramento, CA 95834

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Appendices

INITIAL STUDY

May 2020

A. BACKGROUND

1. Project Title: Delta Fair Village Project

2. Lead Agency Name and Address: City of Antioch
Community Development Department
P.O. Box 5007
Antioch, CA 94531

3. Contact Person and Phone Number: Alexis Morris
Planning Manager
(925) 779-7035

4. Project Location: 3000 Delta Fair Boulevard
Antioch, CA 94509
Assessor's Parcel Numbers (APNs) 076-440-029, -030-, and -031

5. Project Sponsor's Name and Address: Gabriel Chiu
Chiu Family LLC
1767 Garmano Way
Pleasanton, CA 94566

6. Existing General Plan Designation: Somersville Road Corridor Focus Area

7. Focus Area Designation: Regional Commercial

7. Proposed General Plan Designation: Mixed Use

8. Existing Zoning Designation: Regional Commercial (C-3)

9. Proposed Zoning Designation: Planned Development

10. Required Approvals from Other Public Agencies: None

11. Surrounding Land Uses and Setting:

The project site consists of 13.4 acres located at 3000 Delta Fair Boulevard in the City of Antioch, northeast of the intersection of Buchanan Road and Delta Fair Boulevard. State Route (SR) 4 is located approximately 500 feet north. The site is currently developed with three commercial buildings totaling 147,081 square feet (sf) and associated parking, known as the Delta Village Shopping Center. Surrounding existing land uses include a multi-family development to the east, commercial and retail development to the north and west, and office buildings, a church, and single-family residences to the south, across Buchanan Road.

12. Project Description Summary:

    The proposed project would include demolition of 73,546 sf of the 147,081 sf Delta Fair Village Shopping Center to develop the site with approximately 210 multi-family residential units, which would be located in five four-story buildings above a single-story parking garage. The apartment complex would include a courtyard with a clubhouse, pool, and playground. Additionally, a new 4,174-sf retail building would be constructed on the western portion of the site. The new development would total 411,511 sf.

13. Status of Native American Consultation Pursuant to Public Resources Code Section 21080.3.1:

    In compliance with Assembly Bill (AB) 52 (Public Resources Code Section 21080.3.1), a project notification letter was distributed to the Indian Canyon Mutsun Band of Costanoan, the Ohlone Indian Tribe, the Wilton Rancheria, and the Ione Band of Miwok Indians. The letters were distributed on April 26, 2019. Requests to consult were not received within the required response period.

B. SOURCES

The following documents are referenced information sources used for the purposes of this Initial Study/Mitigated Negative Declaration (IS/MND):

1. Bay Area Air Quality Management District. *California Environmental Quality Act Air Quality Guidelines*. May 2017.
2. California Air Resources Board. *The 2017 Climate Change Scoping Plan Update.* January 20, 2017.
3. California Department of Conservation. *Contra Costa County Important Farmland Map 2016.* Published August 2018.
4. California Department of Forestry and Fire Protection. *Contra Costa County, Very High Fire Hazard Severity Zones in LRA*. January 7, 2009.
5. California Department of Toxic Substances Control. *Hazardous Waste and Substances Site List.* Available at: https://calepa.ca.gov/sitecleanup/corteselist/section-65962-5a/. Accessed October 23, 2019
6. California Department of Transportation. *California Scenic Highway Mapping System*. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed September 2019.
7. California Energy Commission. *Title 24 2019 Building Energy Efficiency Standards FAQ*. November 2018.
8. City of Antioch. *2015 Urban Water Management Plan*. May 2016.
9. City of Antioch. *About APD*. Available at: http:// www.antiochca.gov/police/about-apd/. Accessed September 2019.
10. City of Antioch. *City of Antioch General Plan Update EIR.* July 2003.
11. City of Antioch. *City of Antioch General Plan*. Updated November 24, 2003.
12. City of Antioch. *Citywide Design Guidelines Manual.* October 2009.
13. City of Antioch. *Citywide Engineering and Traffic Survey.* February 6, 2015.
14. City of Antioch. *Housing Element*. Adopted April 14, 2015.
15. Contra Costa Clean Water Program. *Stormwater C.3. Guidebook, Stormwater Quality Requirements for Development Applications*. May 17, 2017.

16. Delta Diablo. *Quick Facts*. Available at: https://www.deltadiablo.org/about-us/organization/quick-facts. Accessed October 2019.
17. Contra Costa County Department of Conservation and Development. *Notice of Preparation and Public Scoping Meeting for the Supplemental Environmental Impact Report for Keller Canyon Landfill.* October 15, 2015.
18. Fehr and Peers. *Transportation Assessment Delta Fair Village.* December 2019.
19. j.c. brennan & associates, Inc. *Environmental Noise Analysis Delta Fair Village*. August 26, 2019.
20. Ridgeline Engineering. *Stormwater Control Plan: Delta Fair Village*. July 24, 2019.
21. Sam Harned Landscape Architecture. *Delta Fair Village Existing Tree Survey.* August 24, 2018.
22. San Francisco Bay Regional Water Quality Control Board. *Order No. R2-2014-0030, NPDES No. CA00.8547.* Adopted August 13, 2014.
23. U.S. Department of Agriculture Natural Resources Conservation Service. *Web Soil Survey.* Available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed October 2019.
24. U.S. Green Building Council. *Building Area Per Employee by Business Type*. May 13, 2008.

C. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

D. DETERMINATION

On the basis of this IS/MND:

☐ I find that the Proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the Proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Alexis Morris, Planning Manager	City of Antioch
Printed Name	For

E. BACKGROUND AND INTRODUCTION

This IS/MND identifies and analyzes the potential environmental impacts of the Delta Fair Village Project (proposed project). The information and analysis presented in this document is organized in accordance with the order of the California Environmental Quality Act (CEQA) checklist in Appendix G of the CEQA Guidelines. Where the analysis provided in this document identifies potentially significant environmental effects of the project, mitigation measures are prescribed.

The mitigation measures prescribed for environmental effects described in this IS/MND would be implemented in conjunction with the project, as required by CEQA. The mitigation measures would be incorporated into the project through project conditions of approval. The City would adopt findings and a Mitigation Monitoring/Reporting Program for the project in conjunction with approval of the project.

In 2003, the City of Antioch completed a comprehensive update of the City's General Plan and adopted an Environmental Impact Report (EIR) for the updated General Plan. The General Plan EIR is a program EIR, prepared pursuant to Section 15168 of the CEQA Guidelines (Title 14, California Code of Regulations, Sections 15000 *et seq*.). The General Plan EIR analyzed full implementation of the General Plan and identified measures to mitigate the significant adverse impacts associated with the General Plan.

The project site is located within the Somersville Road Corridor Focus Area with a Regional Commercial designation. The Somersville Road Corridor Focus Area encompasses the commercial area along Somersville Road from SR 4 north to Fourth Street, as well as the commercial areas south of the freeway along Somersville Road. The Focus Area is included as part of the General Plan to guide development of the area.

F. PROJECT DESCRIPTION

The following provides a description of the project site's current location and setting, as well as the proposed project components and the discretionary actions required for the project.

Project Location and Setting

The project site consists of approximately 13.4 acres located at 3000 Delta Fair Boulevard in the City of Antioch, Contra Costa County, California (see Figure 1 and Figure 2). Regional access to the area is provided by SR 4, located approximately 500 feet north of the project site. The site is identified by APNs 076-440-029, -030, and -031 and is zoned Regional Commercial (C-3). Per the City of Antioch General Plan, the site is located in the Somersville Road Corridor Focus Area, and is designated as Regional Commercial within the Focus Area.

Currently, the project site is developed with three commercial buildings and associated parking area, known as the Delta Village Shopping Center. The parking area contains several planter boxes containing a mixture of trees and shrubs.

The project site is bounded by Buchanan Road to the south, Delta Fair Boulevard to the west, San Jose Drive to the north, and multi-family housing to the east. Surrounding land uses also include a shopping area to the west, across Delta Fair Boulevard, and a commercial center to the north, across San Jose Drive. Commercial development also exists south of the project site, across Buchanan Road. The existing multi-family housing to the east is separated from the project site by a six-foot tall masonry wall that spans the length of the eastern project site boundary.

Figure 1
Regional Project Location

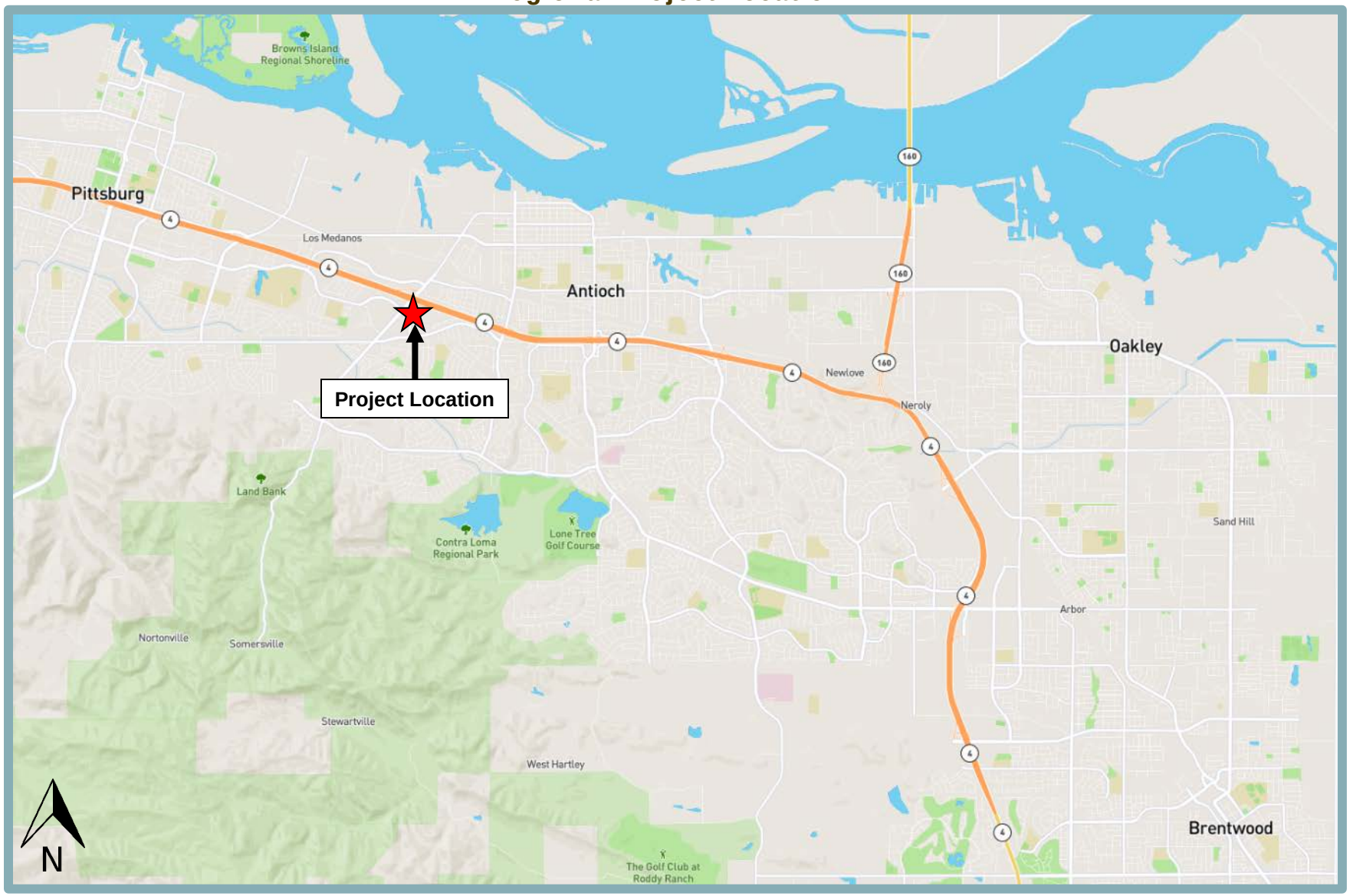


Figure 2
Project Vicinity Map

Project Components

The proposed project would include demolition of approximately 73,546 sf of the existing Delta Fair Shopping Center. The area of demolition would be developed with a 210-unit multi-family apartment complex and a new 4,174-sf retail building (see Figure 3). The apartment complex would consist of five buildings all located above a ground-level parking structure. The five buildings would be cohesively centered around a common courtyard area. The new retail building would be constructed north of the proposed apartment structure. The square footage of the proposed project would total 411,511 sf. In addition, the project would include renovation of the remaining existing 73,535 sf of retail space. The proposed project would include new drive aisles and associated improvements, such as landscaping, utility connections, and parking development. The sections below describe the following project components in further detail: apartment buildings; circulation and parking; landscaping, common area and fencing; utilities; Rezone; Use Permit and Design Review; and Discretionary Actions.

Apartment Buildings

Figure 4 designates the individual buildings within the apartment complex as Buildings A through E. Buildings A and B would be three floors above the parking garage with a maximum height of 54 feet, and Buildings C, D, and E would be four floors above the garage with a maximum height of 65 feet. Each building would have two sets of stairs, an elevator, and a trash room. The number and size of each proposed unit is listed in Table 1. Building A would contain 34 units, while Building B would contain 32 units, and Buildings C through E would contain 48 units.

Table 1
Proposed Unit Mix

Unit Type	Unit Size (sf)	Number of Units
Studio	792 or 832	36
1 Bed 1 Bath	992 or 814	82
2 Bed 2 Bath	1,200 or 1,174	66
3 Bed 2 Bath	1,451	26

Every apartment unit would have a balcony (at least 60 sf), as well as an in-unit washer and dryer. Each balcony would have a 42-inch black, wrought-iron railing and solar privacy screen. The typical balcony would be six by 12 feet, with some larger on the first floor and above pop-out areas. Additionally, the apartment complex would provide 250 sf of private storage per unit. All units with enlarged balconies would have room for storage on the balcony.

Each apartment building would be 90-feet by 200-feet. The exterior wall of the parking garage would be constructed of split-face concrete blocks with stucco stone veneer at the pop outs. The apartment buildings would have stucco exterior walls with accent stucco on some units and stucco stone on others, and the roof would be constructed of concrete tiles.

Circulation and Parking

Development of the proposed project would include new drive aisles with access to the apartment complex and circulation around the proposed retail area. Vehicle entrance to the apartment complex would be provided by existing driveways along Buchanan Road and Delta Fair Boulevard.

Figure 3
Overall Site Plan

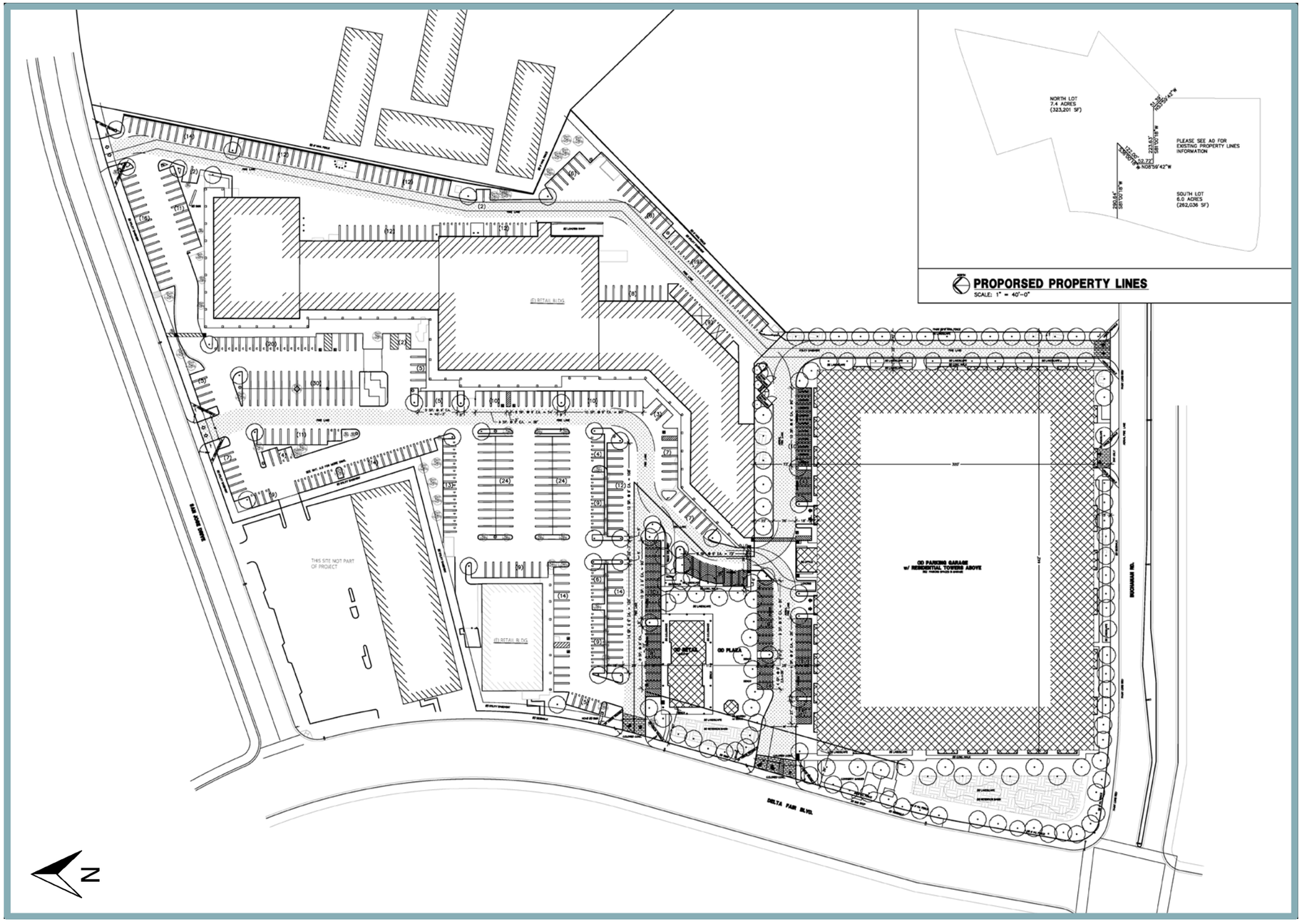
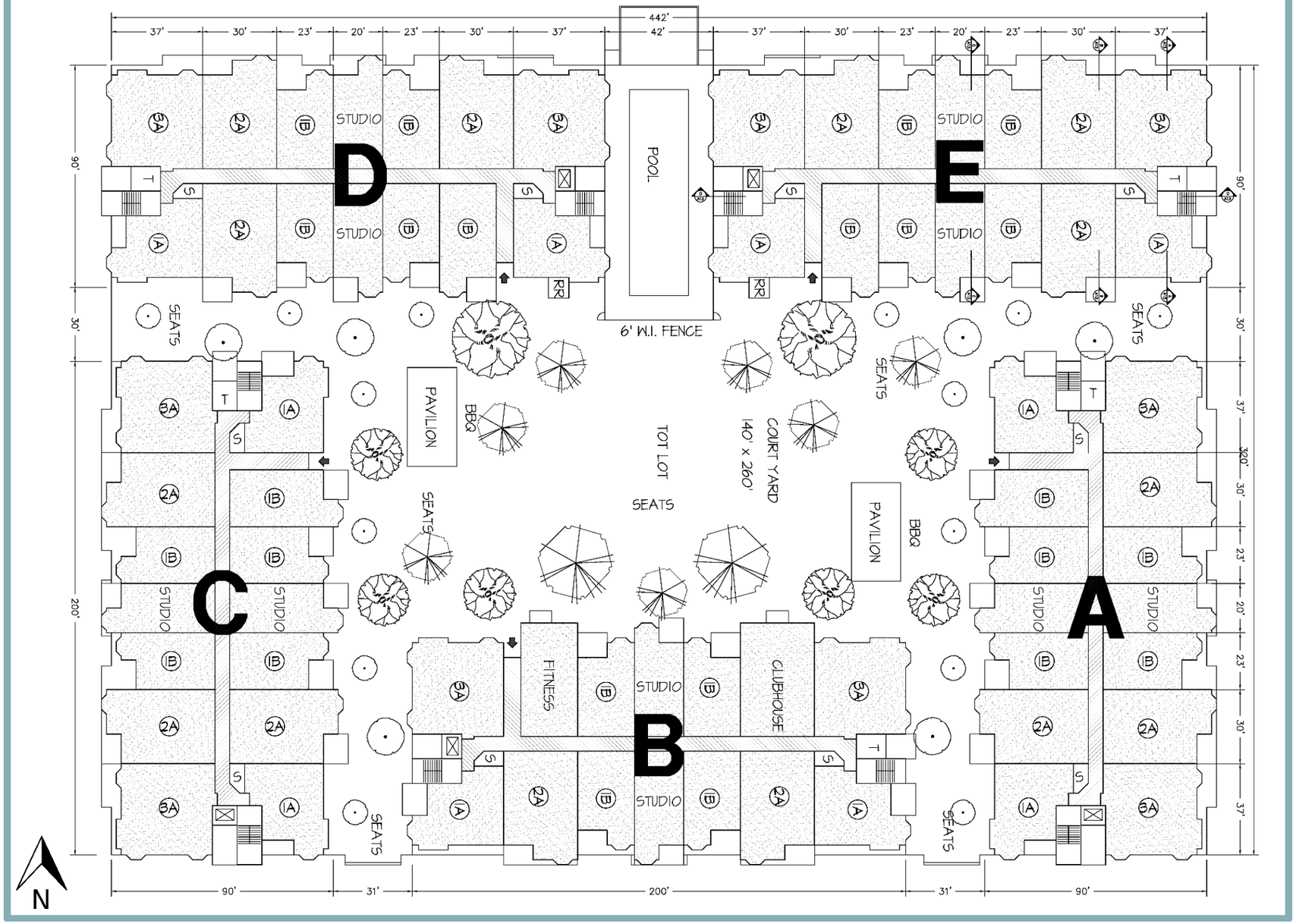


Figure 4
Proposed Arrangement of Residential Buildings



Entrance from Buchanan Road would circulate the east border of the complex and provide access to the garage, exterior guest spaces, and retail development. The two entrances from Delta Fair Boulevard would provide access to the north side of the apartment complex and also lead to the parking garage, exterior guest spaces, and retail development. Each drive aisle would then converge and move north to circulate the remainder of the existing shopping area. In addition, the existing driveways on San Jose Boulevard would be relocated to align with the parking aisles.

The proposed parking garage would provide 328 parking spaces for residents. Of the 328 spaces, 42 tandem parking spaces would be provided for the three-bedroom units and 16 for the two-bedroom units. The garage would be designed with one entrance and exit access point on the north side of the residential building, and one exit-only access point onto Buchanan Road. Ten stairwells and five elevators would provide connection to the residences. A total of 42 guest parking spaces would be provided along the exterior of the garage entrance.

Pedestrian access to the buildings would be provided by card-controlled entrances. Each entrance door would contain a phone entry system that visitors could use to contact residents. The parking garage vehicle access would be opened by a sensor in residents' cars within 20 feet. Elevator and stair access would connect the garage to the apartment buildings.

In addition, the project would include 110 bicycle parking spaces in the garage and five spaces in the courtyard area.

Landscaping, Common Area, and Fencing

Figure 5 and Figure 6 provide an overview of the proposed landscaping, common areas, and fencing elements that would be included as part of the proposed apartment complex. As shown in the figures, new trees and shrubs would be planted in the guest parking area and around the perimeter of the buildings. The existing 10-foot wide landscape along Buchanan Road and Delta Fair Boulevard would be expanded to be 15 feet. Additionally, a new lawn with a gazebo and patio-style seating would be constructed outside of the new retail building. A community garden would be located in the landscape area west of the garage, near Delta Fair Boulevard. Bioretention basins would also be designed within the landscaped area. Additional planters would be placed around the retail parking area to provide shade.

The common area of the apartment complex would consist of approximately 52,000 sf and would be surrounded by a six-foot tall fence with key card-controlled access points. The common area would include various amenities for future residents, including, but not limited to: a clubhouse, fitness center, two picnic pavilions, swimming pool, playground, barbecue grills and seating areas.

A six-foot wrought iron fence would be constructed to secure the landscape area along Delta Fair Boulevard and the courtyard. The fence would include several key card-controlled access gates. The existing six-foot tall concrete fence along the northern border of the site would remain. Security cameras and flood lighting would be provided throughout the apartment complex area.

Utilities

The proposed utility plan is shown in Figure 7. Wastewater generated at the project site would flow through a new four-inch sanitary sewer connection from the retail building and a new six-inch sanitary sewer connection from the residences to an existing eight-inch sewer line within the drive aisle along the eastern portion of the site.

Figure 5
Preliminary Landscape Plan

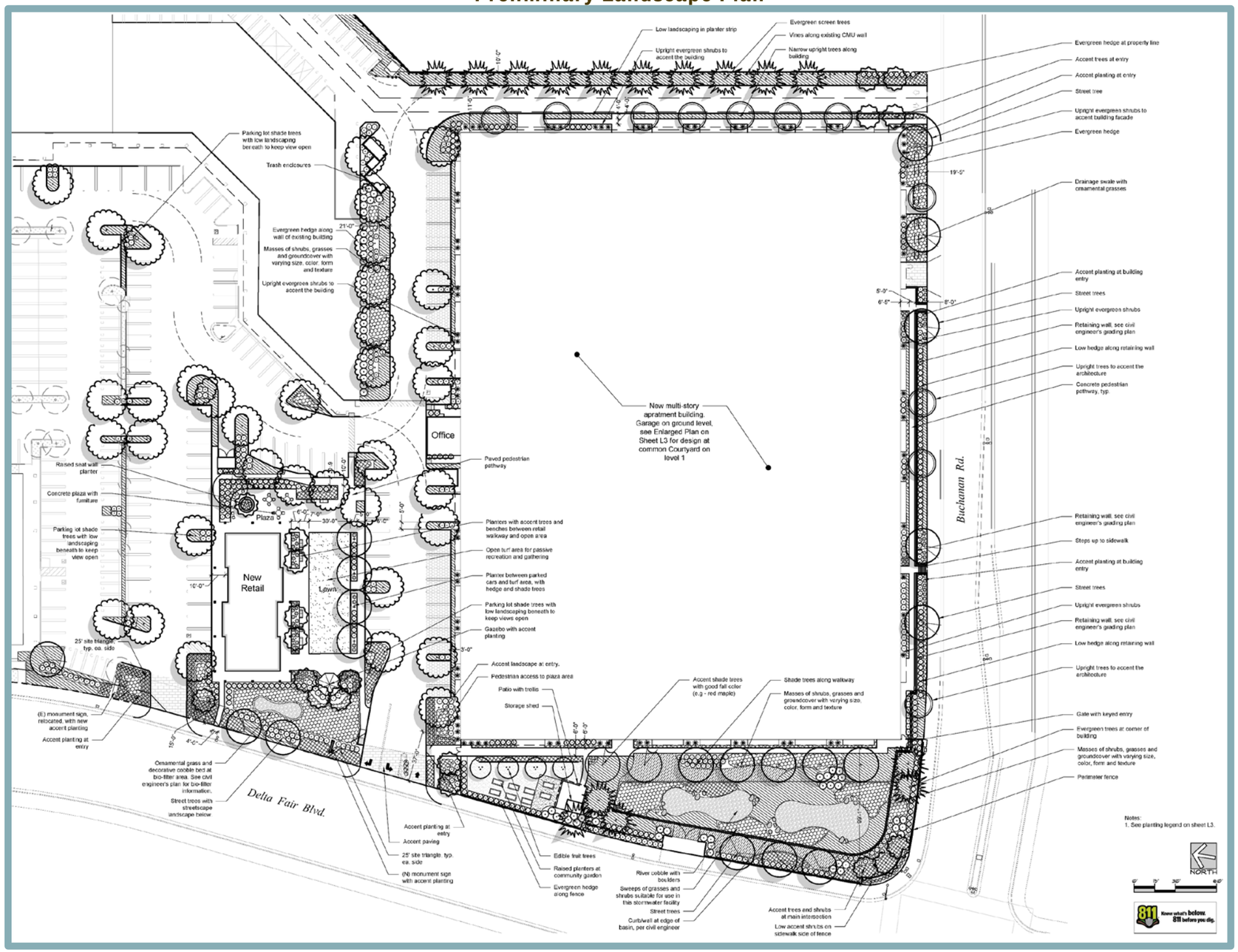


Figure 6
Landscape and Common Space Plan

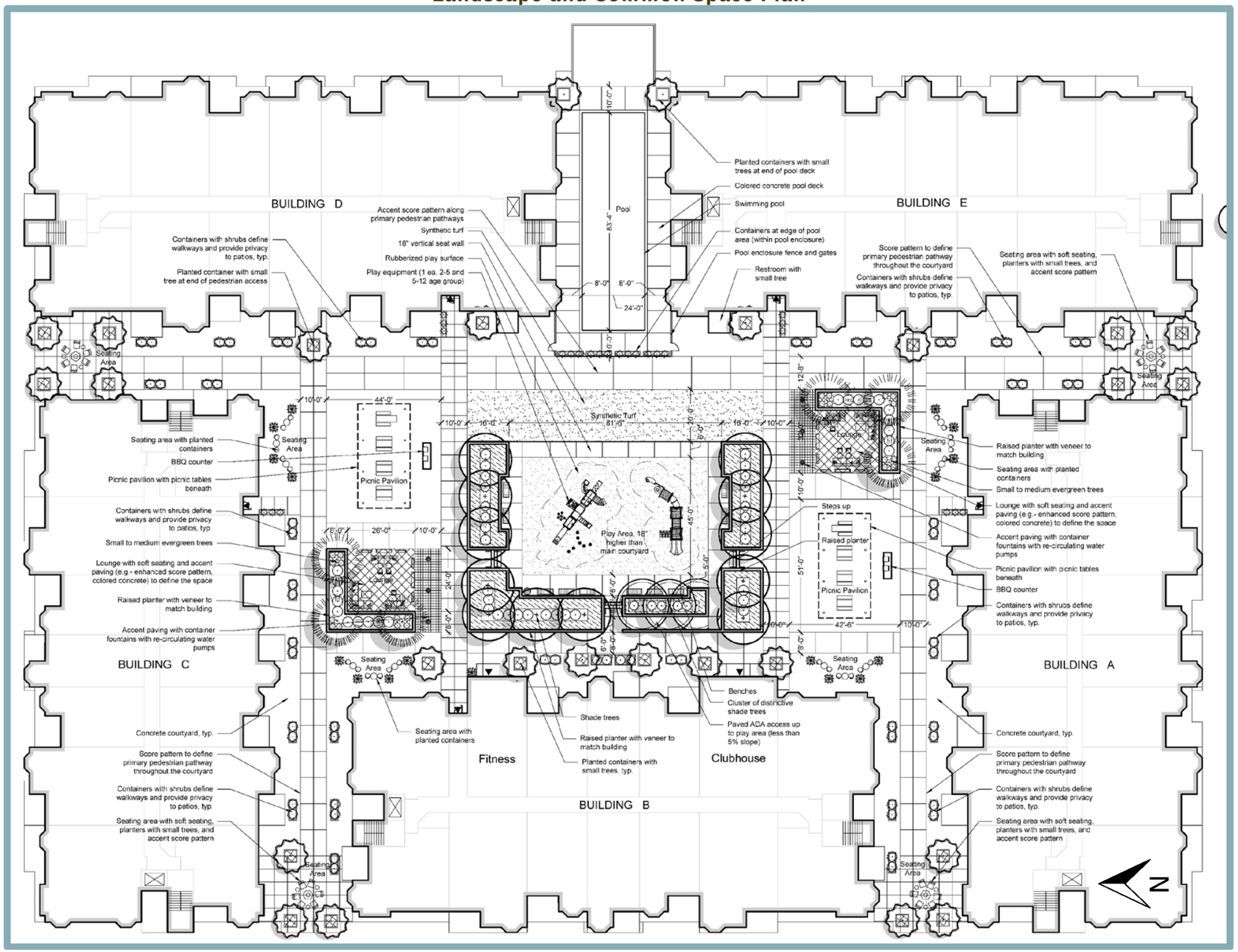
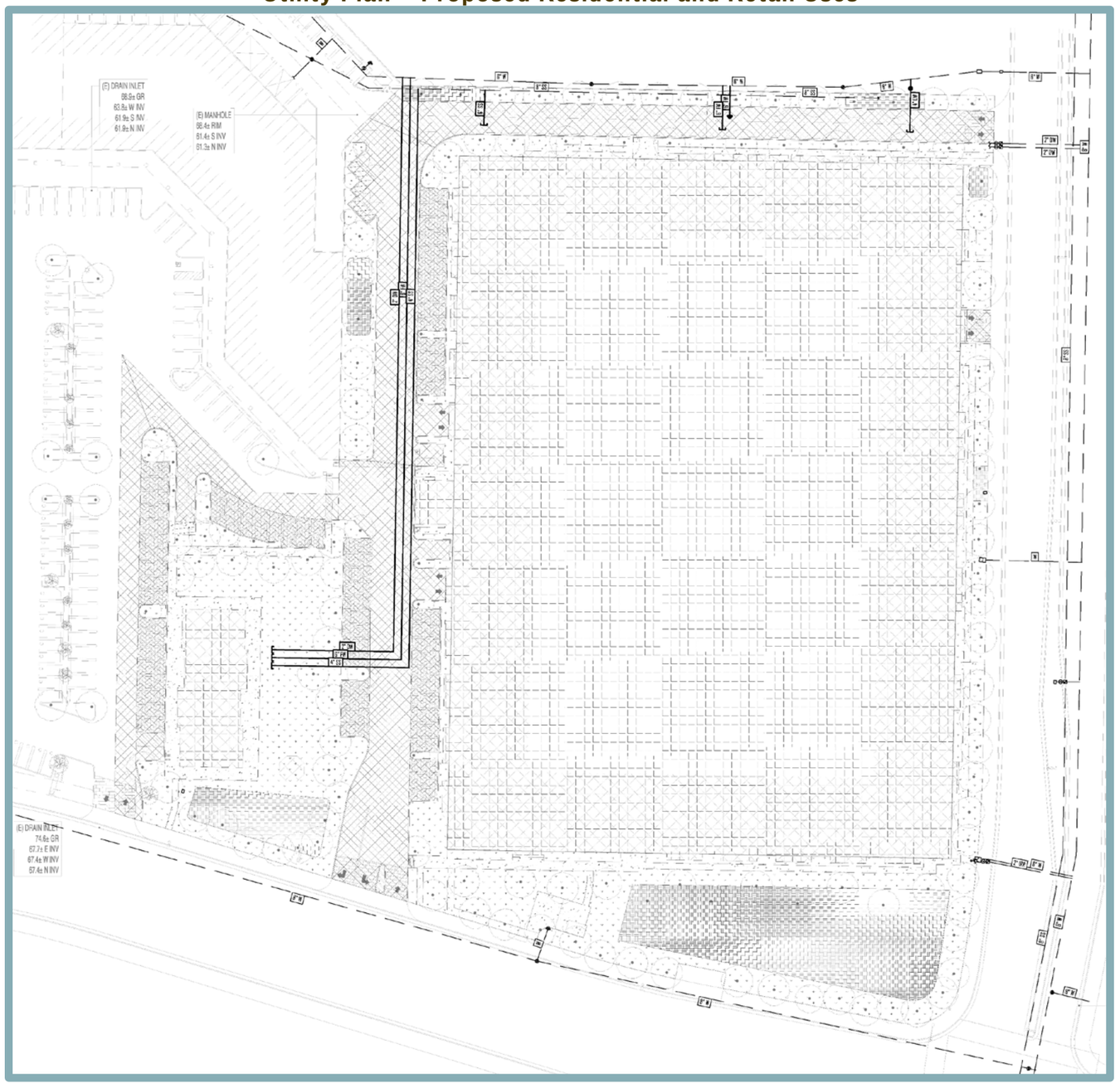


Figure 7
Utility Plan – Proposed Residential and Retail Uses



Domestic water and fire supply for the proposed development would be provided by the City by way of a new two-inch connection to service the retail building, as well as a new four-inch connection to service the residences. Both would connect to an existing eight-inch water line within the drive aisle along the eastern portion of the site.

Stormwater runoff would be routed to a series of bio-retention basins throughout the site. The bio-retention basins would remove pollutants primarily by filtering runoff slowly through an active layer of soil. Treated runoff would be captured by a perforated underdrain, which would route flows to the City's existing stormwater mains.

General Plan Amendment

A General Plan Amendment would be required for the project site to change the Focus Area designation from Regional Commercial to Mixed Use. The Mixed Use designation would allow for multi-family attached and retail use. Thus, development of the project would be in keeping with the goals of the designation.

Rezone

The proposed project would include a Rezone to change the site's zoning from C-3 to Planned Development (P-D). The P-D district is intended to accommodate a wide range of residential, commercial, and industrial land uses which are mutually supportive and compatible with existing and proposed development on surrounding properties. As per Section 9-5.2302 of the Municipal Code, a P-D district may possibly include mixed uses of residential and commercial within either the same or adjacent buildings that share a similar architectural theme and maximize pedestrian access between the two. The proposed project would include both features and be consistent with the Planned Development designation.

Use Permit and Design Review

According to Section 9-5.2607 of the Municipal Code, all new development within the City is subject to Design Review approval. The purpose of the Design Review process is to promote the orderly development of the City, encourage high quality site design and planning, protect the stability of land values and investments, and ensure consistency with the Citywide Design Guidelines. A Use Permit is required to clarify the details of each development phase in the P-D District.

Discretionary Actions

Implementation of the proposed project would require the following discretionary actions by the City of Antioch:

- General Plan Amendment to redesignate the site from Regional Commercial to Mixed Use;
- Rezone of the site from C-3 to Planned Development (P-D);
- Lot Line Adjustment; and
- Use Permit and Design Review for the development of a new retail building and a multi-family residential development at a density of 35 du/ac within a P-D zoning district.

G. ENVIRONMENTAL CHECKLIST

The following Checklist contains the environmental checklist form presented 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, as part of the proposed project.

For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Less Than Significant with Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than-significant level.

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

No Impact: The project would not have any impact.

I. 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?	☐	☐	✖	☐

Discussion

a,b. Examples of typical scenic vistas would include mountain ranges, ridgelines, or bodies of water as viewed from a highway, public space, or other area designated for the express purpose of viewing and sightseeing. In general, a project's impact to a scenic vista would occur if development of the project would substantially change or remove a scenic vista. The City's General Plan does not specifically identify any scenic vistas. In addition, the project site is located within a developed area of the City. The site is not located within the vicinity of any mountain ranges, ridgelines, or bodies of water.

According to the California Scenic Highway Mapping System, the project site is located approximately 12 miles east of the nearest officially designated State Scenic Highway, Interstate 680 (I-680). It should be noted that while not officially designated, a portion of SR 4 is designated as an Eligible State Scenic Highway.[1] However, the project site is not visible from the eligible portion of the highway. Thus, the proposed project would not impact any scenic resources within the eligible or officially designated scenic highway.

Therefore, the project site is not located within the vicinity of a designated scenic vista. In addition, the site is not located within view of any official State Scenic Highway. Therefore, the proposed project would not have a substantial adverse effect on a scenic vista and would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway. Thus, a ***less-than-significant*** impact would occur.

c. The project site is located in an urbanized area and is currently developed with existing commercial structures ranging from single-story stores and shops to two-story large warehouse structures. General Plan Policy 5.4.2.c states that view corridors from public spaces to natural ridgelines and landmarks, such as Mt. Diablo and distant hills, local ridgelines, the San Joaquin River, and other water bodies (such as Sand Creek), should

[1] California Department of Transportation. *California Scenic Highway Mapping System*. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed September 2018.

be preserved. Specific view corridors identified in Policy 5.4.2.c include Somersville Road, Lone Tree Way, Hillcrest Avenue, SR 4, SR 160, James Donlon Boulevard, Deer Valley Road, and Empire Mine Road. While the project site is located to the west of Somersville Road, the proposed project would not block any views of Mt. Diablo from the roadway. Additionally, the proposed project would be located behind existing development visible from Somersville Road. Furthermore, Policy 5.4.2.c also recognizes that new development will inevitably result in some loss of existing views.

In the current condition, the project site consists of several small shops as well as larger warehouse type buildings. Some of the buildings are currently vacant and not maintained, while the design of the structures is outdated. The proposed project would update the existing design of the site with modern architecture and associated landscaping, which would improve the visual quality of the site. Consistent with the City's Zoning Ordinance, landscaping would include drought-tolerant trees, shrubbery, and groundcover in order to provide for an aesthetically pleasing streetscape. Additionally, the proposed building heights would not exceed 65 feet, while under the existing C-3 zoning, buildings could reach a height of 70 feet. Finally, the project would be subject to Design Review by the City of Antioch per Section 9-5.2607 of the Municipal Code. The purpose of the Design Review process is to promote the orderly development of the City, encourage high quality site design and planning, protect the stability of land values and investments, and ensure consistency with the Citywide Design Guidelines. The Design Review process would help to ensure that the proposed residential and retail buildings would be visually compatible with the existing development in the area.

Figure 8 shows the existing views from the Buchanan Road and Delta Fair Boulevard intersection. As seen in the figure, the existing views from the intersection only consist of commercial structures. Figure 9 shows a rendering of the proposed project at the same intersection. While development of the proposed project would alter the views in the area, the development of the site with modern, well-designed architecture and well-maintained landscaping, would improve the visual character and quality of the site.

Based on the above, impacts related to degrading the existing visual character of the site and its surroundings or a conflict with applicable zoning and other regulations governing scenic quality would be ***less-than-significant***.

d. The proposed project would include construction of new residential and retail uses, which would include exterior lighting, as well as lighting from vehicles traveling to and from the project site and interior lighting spilling from windows. However, the project site is currently developed with commercial uses, which generate similar light sources related to exterior lighting. While the project would generate slightly more trips to the project site than the existing use, the incremental increase would not generate a substantial change to the existing vehicle light conditions.

Although the proposed project would develop a new residential use and generate new light sources from windows, the project site is currently bordered by existing development that generates light and glare in the area. Furthermore, exterior lights along the east and west sides of the building would be shielded by landscape or fences, and would not spill beyond the project site. Interior lighting from the apartment complex could spill from windows to the west side of the project site; however, the multi-family development would be consistent with the surrounding uses. Lighting along the southern side of the building would be separated from nearby residences by Buchanan Road.

Figure 8
Existing View of Project from Buchanan Road and Delta Fair Boulevard

Figure 9
Proposed View of Project from Buchanan Road and Delta Fair Boulevard

All components of the proposed project would be subject to Design Review by the City to ensure light and glare do not obstruct day or nighttime views in the area. Citywide design guidelines for landscaping, common space, and lighting prohibit the use of flood lights to light entire structures or yards and state that any exterior night lighting installed shall be of a low intensity, low-glare design, and shall be hooded to direct light downward onto the subject parcel and prevent spillover onto adjacent parcels.[2] Compliance with such standards would ensure that on-site lighting would be directed within the project site and would not substantially illuminate adjacent properties. Given the consistency of the proposed project with surrounding development, the evaluation of the lighting plan, and the added assurance of the Design Review process, implementation of the project would result in a ***less-than-significant*** impact with respect to creating a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

[2] City of Antioch. *Citywide Design Guidelines Manual* [pg 6-43]. October 2009

II. AGRICULTURE AND FOREST RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	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 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, forest land (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 forest land or conversion of forest land to non-forest use?	☐	☐	☐	✖
e. Involve other changes in the existing environment which, due to their location or nature, could individually or cumulatively result in loss of Farmland to non-agricultural use?	☐	☐	☐	✖

Discussion

a,e. The project site is currently developed with a commercial shopping center and associated parking area. The site has not been used recently for agricultural production and is currently designated as "Urban and Built-Up Land" and "Other Land" on the Contra Costa County Important Farmland map.[3] Furthermore, the site is not zoned or designated in the General Plan for agriculture uses, and such uses would be incompatible with surrounding land uses in the area. Given the Urban and Built-Up Land and Other Land designation of the site, development of the proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use, or otherwise result in the loss of Farmland to non-agricultural use. Therefore, the proposed project would have ***no impact***.

b. The proposed project site is not under a Williamson Act contract and is not designated or zoned for agricultural uses. Therefore, buildout of the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract, and ***no impact*** would occur.

c,d. The project area is not considered forest land (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code section 4526), and is not zoned Timberland Production (as defined by Government Code section 51104[g]). In addition, the site is designated C-3 and would be rezoned to Planned Development, which is not compatible with timberland production. Therefore, the proposed project would have ***no impact*** with regard to conversion of forest land or any potential conflict with forest land, timberland, or Timberland Production zoning.

[3] California Department of Conservation. *Contra Costa County Important Farmland Map 2016.* Published August 2018.

III. AIR QUALITY. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	✖	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	✖	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	✖	☐	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	✖	☐

Discussion

a,b. The City of Antioch is located in the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The SFBAAB area is currently designated as a nonattainment area for the State and federal ozone, State and federal fine particulate matter 2.5 microns in diameter ($PM_{2.5}$), and State respirable particulate matter 10 microns in diameter (PM_{10}) ambient air quality standards (AAQS). The SFBAAB is designated attainment or unclassified for all other AAQS. It should be noted that on January 9, 2013, the U.S. Environmental Protection Agency (USEPA) issued a final rule to determine that the Bay Area has attained the 24-hour $PM_{2.5}$ federal AAQS. Nonetheless, the Bay Area must continue to be designated as nonattainment for the federal $PM_{2.5}$ AAQS until such time as the BAAQMD submits a redesignation request and a maintenance plan to the USEPA, and the USEPA approves the proposed redesignation.

In compliance with regulations, due to the nonattainment designations of the area, the BAAQMD periodically prepares and updates air quality plans that provide emission reduction strategies to achieve attainment of the AAQS, including control strategies to reduce air pollutant emissions through regulations, incentive programs, public education, and partnerships with other agencies. The current air quality plans are prepared in cooperation with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG).

The most recent federal ozone plan is the 2001 Ozone Attainment Plan, which was adopted on October 24, 2001 and approved by the California Air Resources Board (CARB) on November 1, 2001. The plan was submitted to the USEPA on November 30, 2001 for review and approval. The most recent State ozone plan is the 2017 Clean Air Plan (CAP), adopted on April 19, 2017. The 2017 CAP was developed as a multi-pollutant plan that provides an integrated control strategy to reduce ozone, PM, toxic air contaminants (TACs), and greenhouse gases (GHGs). Although a plan for achieving the State PM_{10} standard is not required, the BAAQMD has prioritized measures to reduce PM in developing the control strategy for the 2017 CAP. The control strategy serves as the backbone of the BAAQMD's current PM control program.

The aforementioned air quality plans contain mobile source controls, stationary source controls, and transportation control measures to be implemented in the region to attain the State and federal AAQS within the SFBAAB. Adopted BAAQMD rules and regulations, as well as the thresholds of significance, have been developed with the intent to ensure

continued attainment of AAQS, or to work towards attainment of AAQS for which the area is currently designated nonattainment, consistent with applicable air quality plans. The BAAQMD's established significance thresholds associated with development projects for emissions of the ozone precursors reactive organic gases (ROG) and oxides of nitrogen (NO_x), as well as for PM_{10}, and $PM_{2.5}$, expressed in pounds per day (lbs/day) and tons per year (tons/yr), are listed in Table 2. Thus, by exceeding the BAAQMD's mass emission thresholds for operational emissions of ROG, NO_X, PM_{10}, or PM_{25} a project would be considered to conflict with or obstruct implementation of the BAAQMD's air quality planning efforts.

Table 2
BAAQMD Thresholds of Significance

Pollutant	Construction	Operational	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10} (exhaust)	82	82	15
$PM_{2.5}$ (exhaust)	54	54	10

Source: BAAQMD, CEQA Guidelines, May 2017.

The proposed project's construction and operational emissions were quantified using the California Emissions Estimator Model (CalEEMod) software version 2016.3.2 - a Statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions, including GHG emissions, from land use projects. The model applies inherent default values for various land uses, including construction data, vehicle mix, trip length, average speed, etc. Where project-specific information is available, such information should be applied in the model. Accordingly, the proposed project's modeling assumed the following:

- Land uses include Apartments Mid-Rise and Retail;
- Construction would occur over an approximately 18-month period;
- A total of 73,546 sf of existing building would be demolished;
- Four acres would be disturbed during grading;
- A total of 50 cubic yards of material would be exported during site prep and 100 cubic yards would be exported during grading;
- Average daily trip rates of 5.44 trips per residential unit and 43.78 trips per thousand sf (ksf) of retail, were assumed based on the Transportation Impact Assessment (TIA) prepared for the proposed project by Fehr & Peers;
- The nearest transit station is located 0.01-mile away; and
- Pedestrian connection is provided on-site.

The proposed project's estimated emissions associated with construction and operations are presented and discussed in further detail below. A discussion of the proposed project's contribution to cumulative air quality conditions is provided below as well. All CalEEMod results are included in Appendix A to this IS/MND.

Construction Emissions

According to the CalEEMod results, the proposed project would result in maximum unmitigated construction criteria air pollutant emissions as shown in Table 3. As shown in the table, the proposed project's construction emissions would be below the applicable thresholds of significance for ROG, NO_X, PM_{10}, and $PM_{2.5}$.

Table 3
Maximum Unmitigated Construction Emissions (lbs/day)

Pollutant	Proposed Project Emissions	Threshold of Significance	Exceeds Threshold?
ROG	24.39	54	**NO**
NO_X	50.40	54	**NO**
PM_{10} (exhaust)	2.20	82	**NO**
PM_{10} (fugitive)	18.22	None	**N/A**
$PM_{2.5}$ (exhaust)	2.02	54	**NO**
$PM_{2.5}$ (fugitive)	9.97	None	**N/A**

Source: CalEEMod, October 2019 (see Appendix A).

Although thresholds of significance for mass emissions of fugitive dust PM_{10} and $PM_{2.5}$ have not been identified by the City of Antioch or BAAQMD, the proposed project's estimated fugitive dust emissions have been included for informational purposes. All projects within the jurisdiction of the BAAQMD are required to implement all of the BAAQMD's Basic Construction Mitigation Measures, which include the following:

1. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
2. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
3. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
4. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
5. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
6. 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.
7. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

The proposed project's required implementation of the BAAQMD's Basic Construction Mitigation Measures listed above would help to further minimize construction-related emissions. Even without consideration of BAAQMD's Basic Construction Mitigation Measures, as shown in Table 3, construction of the proposed project would result in emissions of criteria air pollutants below BAAQMD's thresholds of significance.

Consequently, the proposed project would not conflict with or obstruct implementation of the applicable air quality plans during project construction.

Operational Emissions

Operations of the existing Delta Fair Shopping Center within the project site currently involve emissions of criteria pollutants. In the absence of the proposed project, existing operations of the Delta Fair Shopping Center would be anticipated to continue, which would continue to result in emissions of criteria pollutants. The proposed project would involve redevelopment of the site for retail and residential uses. Considering that the existing operations of the Delta Fair Shopping Center involve criteria air pollutant emissions, and the emissions would continue in the absence of the proposed project, the analysis of operational emissions presented in this section focuses on the net change in emissions that would occur when emissions resulting from existing operations are compared to emissions estimated for operation of the proposed project.

Table 4 shows the emissions of the proposed project as well as the emissions from the existing Delta Fair Shopping Center. The net new emissions are compared to the BAAQMD significance threshold. As shown in the table, the proposed project's net new operational emissions would be below the applicable thresholds of significance. As such, the proposed project would not result in a significant air quality impact during operations.

Table 4
Unmitigated Maximum Operational Emissions

Pollutant	Proposed Project Emissions		Existing Delta Fair Shopping Center		Net New Emissions	
	lbs/day	tons/yr	lbs/day	tons/yr	lbs/day	tons/yr
ROG	14.5	2.43	7.35	1.25	**7.15**	**1.18**
NO_X	27.9	4.99	14.2	2.55	**13.7**	**2.44**
PM_{10} (exhaust)	0.31	0.05	0.10	0.02	**0.21**	**0.03**
PM_{10} (fugitive)	16.5	2.90	8.85	1.55	**7.65**	**1.35**
$PM_{2.5}$ (exhaust)	0.30	0.05	0.10	0.02	**0.20**	**0.03**
$PM_{2.5}$ (fugitive)	4.41	0.78	2.37	0.42	**2.04**	**0.36**
Exceeds Thresholds?					**NO**	**NO**

Source: CalEEMod, November 2019 (see Appendix A).

Cumulative Emissions

Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By nature, air pollution is largely a cumulative impact. A single project is not sufficient in size to, by itself, result in nonattainment of AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. The thresholds of significance presented in Table 2 represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions. If a project exceeds the significance thresholds presented in Table 2, the proposed project's

emissions would be cumulatively considerable, resulting in significant adverse cumulative air quality impacts to the region's existing air quality conditions. As presented above, the proposed project would be below all applicable thresholds for criteria pollutants during construction and operation. Thus, the project would not result in a cumulatively considerable contribution to the region's existing air quality conditions.

Conclusion

As stated previously, the applicable regional air quality plans include the 2001 Ozone Attainment Plan and the 2017 CAP. Because the proposed project would not result in construction-related or operational emissions of criteria air pollutants in excess of BAAQMD's thresholds of significance, conflicts with or obstruction of implementation of the applicable regional air quality plans would not occur. In addition, the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State AAQS. Thus, a ***less-than-significant*** impact would result.

c. 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. Sensitive receptors are typically defined as facilities where sensitive receptor population groups (i.e., children, the elderly, the acutely ill, and the chronically ill) are likely to be located. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. The nearest existing sensitive receptors would be the multi-family apartments located immediately to the east of the site. In addition, the proposed project would include the construction of housing and, thus, would be considered a sensitive receptor.

The major pollutant concentrations of concern are localized carbon monoxide (CO) emissions and toxic air contaminant (TAC) emissions, which are addressed in further detail below.

Localized CO Emissions

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. High levels of localized CO concentrations are only expected where background levels are high, and traffic volumes and congestion levels are high. Emissions of CO are of potential concern, as the pollutant is a toxic gas that results from the incomplete combustion of carbon-containing fuels such as gasoline or wood.

In order to provide a conservative indication of whether a project would result in localized CO emissions that would exceed the applicable threshold of significance, the BAAQMD has established screening criteria for localized CO emissions. According to BAAQMD, a proposed project would result in a less-than-significant impact related to localized CO emission concentrations if all of the following conditions are true for the project:

- 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;
- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; and
- 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, underpass, etc.).

As discussed in Section XVII, Transportation, of this IS/MND, the proposed project would not conflict with the Contra Costa Transportation Authority (CCTA) Congestion Management Program (CMP). Additionally, traffic counts completed for the City of Antioch as part of a Citywide Engineering and Traffic Survey showed that all of the City roadways experienced traffic volumes far below 44,000 vehicles per hour.[4] Thus, the proposed project would not increase traffic volumes at an affected intersection to more than 44,000 vehicles per hour. Furthermore, areas where vertical and/or horizontal mixing is limited due to tunnels, underpasses, or similar features do not exist in the project area. As such, the proposed project would not be expected to result in substantial levels of localized CO at surrounding intersections or generate localized concentrations of CO that would exceed standards.

TAC Emissions

Another category of environmental concern is TACs. The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) provides recommended setback distances for sensitive land uses from major sources of TACs, including, but not limited to, freeways and high traffic roads, distribution centers, and rail yards. The CARB has identified diesel particulate matter (DPM) from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. DPM is the solid material in diesel exhaust, more than 90 percent of such material is less than one micrometer in diameter, and, thus, DPM is a subset of the $PM_{2.5}$ category of pollutants. Health risks associated with TACs are a function of both the concentration of emissions and the duration of exposure, where the higher the concentration and/or the longer the period of time that a sensitive receptor is exposed to pollutant concentrations would correlate to a higher health risk.

The proposed project would not involve any land uses or operations that would be considered major sources of TACs, including DPM. As such, the proposed project would not generate any substantial pollutant concentrations during operations. However, short-term, construction-related activities could result in the generation of TACs, primarily DPM, from on-road haul trucks and off-road equipment exhaust emissions. Although DPM emissions from on-road haul trucks would be widely dispersed throughout the project area, as haul trucks move goods and material to and from the site, exhaust from off-road equipment would primarily occur within the project site. Consequently, the operation of off-road equipment within the project site during project construction could result in exposure of nearby residents to DPM.

BAAQMD has established thresholds for local community risk and hazard impacts that may be used when siting new sources of pollution. The BAAQMD's thresholds for analyzing health risks from new sources of emissions are presented below:

[4] City of Antioch. *Citywide Engineering and Traffic Survey* [pg. 7]. February 6, 2015.

- Non-compliance with a qualified risk reduction plan;
- An excess cancer risk level of more than 10 in one million, or a non-cancer (i.e., chronic or acute) hazard index greater than 1.0 would be a cumulatively considerable contribution; or
- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$ would be a cumulatively considerable contribution.

As stated above, the foregoing thresholds are generally intended for use when analyzing the operation of new proposed sources of TACs. However, the proposed project would not involve the on-going operation of any permanent sources of TACs. Although the proposed project would not involve the siting or operation of any permanent sources of TACs, in the absence of specific thresholds for use when analyzing health risks from short-term projects, the foregoing BAAQMD thresholds are applied to the project, for construction specifically.

To analyze potential health risks to nearby residents that could result from DPM emissions from off-road equipment at the project site, total DPM emissions from project construction were estimated. DPM is considered a subset of $PM_{2.5}$, thus, the CalEEMod estimated $PM_{2.5}$ emissions from exhaust during construction was conservatively assumed to represent all DPM emitted on-site. The CalEEMod estimated $PM_{2.5}$ exhaust emissions were then used to calculate the concentration of DPM at the maximally exposed sensitive receptor near the project site. DPM concentrations resulting from project implementation were estimated using the American Meteorological Society/Environmental Protection Agency (AMS/EPA) Regulatory Model (AERMOD) dispersion model. The associated cancer risk and non-cancer hazard index were calculated using the CARB's Hotspot Analysis Reporting Program Version 2 (HARP 2) Risk Assessment Standalone Tool (RAST), which calculates the cancer and non-cancer health impacts using the risk assessment guidelines of the 2015 Office of Environmental Health Hazard Assessment (OEHHA) Guidance Manual for Preparation of Health Risk Assessments.[5] The modeling was performed in accordance with the USEPA's User's Guide for the AERMOD[6] and the 2015 OEHHA Guidance Manual.

Based on the foregoing methodology, and the methodology presented in response to questions 'a' and 'b' regarding the estimation of construction emissions, the cancer risk and non-cancer hazard indices were estimated and are presented in Table 5.

Table 5
Maximum Unmitigated Cancer Risk and Hazard Index Associated with Project Construction DPM

	Cancer Risk (per million persons)	Acute Hazard Index	Chronic Hazard Index
Construction DPM Health Risks	28.98	0.00	0.02
Thresholds of Significance	10	1.0	1.0
Exceed Thresholds?	**YES**	**NO**	**NO**

Source: AERMOD and HARP 2 RAST, December 2019 (see Appendix A).

[5] Office of Environmental Health Hazard Assessment. *Air Toxics Hot Spots Program Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments* [pg. 8-18]. February 2015.

[6] U.S. Environmental Protection Agency. *User's Guide for the AMS/EPA Regulatory Model (AERMOD)*. December 2016.

As shown in Table 5, construction of the proposed project would not result in acute or chronic hazards in excess of BAAQMD's standards. However, project construction would conservatively have the potential to result in cancer risks in excess of BAAQMD's 10 cases per million threshold. Thus, construction of the proposed project could result in exposure of nearby receptors to substantial pollutant concentrations.

Criteria Pollutants

The BAAQMD thresholds of significance were established with consideration given to the health-based air quality standards established by the NAAQS and CAAQS, and are designed to aid the district in achieving attainment of the NAAQS and CAAQS. [7] Although the BAAQMD's thresholds of significance are intended to aid achievement of the NAAQS and CAAQS for which the SFBAAB is in nonattainment, the thresholds of significance do not represent a level above which individual project-level emissions would directly result in public health impacts. Nevertheless, a project's compliance with BAAQMD's thresholds of significance provides an indication that criteria pollutants released as a result of project implementation would not inhibit attainment of the health-based regional NAAQS and CAAQS. Because project-related emissions would not exceed the BAAQMD's thresholds, and, thus, would not inhibit attainment of regional NAAQS and CAAQS, the criteria pollutants emitted during project implementation would not be anticipated to result in measurable health impacts to sensitive receptors. Accordingly, the proposed project would not expose sensitive receptors to excess concentrations of criteria pollutants.

Conclusion

Based on the above discussion, the proposed project would not expose any sensitive receptors to excess concentrations of localized CO or criteria pollutants during construction or operation. However, construction of the project could result in exposure of nearby receptors to cancer risks in excess of the BAAQMD's standards. Consequently, the proposed project would result in a ***potentially significant*** impact related to the exposure of sensitive receptors to substantial pollutant concentrations.

Mitigation Measure(s)

As shown in Table 6, implementation of the following mitigation measure would ensure that emissions from construction equipment do not result in increased health risks to nearby receptors in excess of BAAQMD's standards. Consequently, with implementation of the following mitigation measure, the proposed project would not have the potential to expose sensitive receptors to substantial pollutant concentrations and a *less-than-significant* impact would occur.

III-1 *Prior to approval of any grading plans, the project applicant shall demonstrate that emissions from all off-road diesel-powered equipment to be used in the construction of the project (including owned, leased, and subcontractor equipment) shall not exceed 0.038517 tons of $PM_{2.5}$ per year of construction. The Sacramento Metropolitan Air Quality Management District's (SMAQMD's) Construction Mitigation Tool, or another method deemed acceptable by the City, may be used to calculate the anticipated emissions resulting from construction of the proposed project. Emissions estimates for project construction shall be submitted for review and approval by the Planning Manager for the City of Antioch.*

[7] Bay Area Air Quality Management District. *California Environmental Quality Act Air Quality Guidelines*. May 2017.

Table 6
Maximum Mitigated Cancer Risk and Hazard Index Associated with Project Construction DPM

	Cancer Risk (per million persons)	Acute Hazard Index	Chronic Hazard Index
Construction DPM Health Risks	9.64	0.00	0.01
Thresholds of Significance	10	1.0	1.0
Exceed Thresholds?	**NO**	**NO**	**NO**

Source: AERMOD and HARP 2 RAST, December 2019 (see Appendix A)

SMAQMD's Construction Mitigation Tool requires the user to input the type and number of pieces of equipment used, as well as the total amount of time the equipment would be used for each day and throughout the entire construction period. During the course of project construction, should the project contractor determine that changes to the anticipated equipment list are needed, an update to the SMAQMD's Construction Mitigation Tool shall be submitted to the City demonstrating that the proposed changes to equipment usage would not result in project construction emitting in excess of 0.038517 tons of $PM_{2.5}$ per year.

In addition, all off-road equipment working at the construction site must be maintained in proper working condition according to manufacturer's specifications. Idling shall be limited to five minutes or less in accordance with the Off-Road Diesel Fueled Fleet Regulation as required by CARB.

Portable equipment over 50 horsepower must have either a valid District Permit to Operate (PTO) or a valid statewide Portable Equipment Registration Program (PERP) placard and sticker issued by CARB.

d. Pollutants of principal concern include emissions leading to odors, emission of dust, or emissions considered to constitute air pollutants. Air pollutants have been discussed in section "a" through "d" above. Therefore, the following discussion focuses on emissions of odors and dust.

Per the BAAQMD CEQA Guidelines, odors are generally regarded as an annoyance rather than a health hazard.[8] Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The presence of an odor impact is dependent on a number of variables including: the nature of the odor source; the frequency of odor generation; the intensity of odor; the distance of odor source to sensitive receptors; wind direction; and sensitivity of the receptor.

Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantitative analysis to determine the presence of a significant odor impact is difficult. Typical odor-generating land uses include, but are not limited to, wastewater treatment plants, landfills, and

[8] Bay Area Air Quality Management District. *California Environmental Quality Act Air Quality Guidelines* [pg. 7-1]. May 2017.

composting facilities. The proposed project would not introduce any such land uses and is not located in the vicinity of any such existing or planned land uses.

Construction activities often include diesel fueled equipment and heavy-duty trucks, which could create odors associated with diesel fumes that may be considered objectionable. However, construction activities would be temporary and operation of construction equipment would be restricted to the hours of 7:00 AM to 6:00 PM, Monday through Friday, and 9:00 AM to 5:00 PM on weekends and holidays, per the City's Municipal Code. Project construction would also be required to comply with all applicable BAAQMD rules and regulations, particularly associated with permitting of air pollutant sources. The aforementioned regulations would help to minimize air pollutant emissions as well as any associated odors. Accordingly, substantial objectionable odors would not be expected to occur during construction activities.

It should be noted that BAAQMD regulates objectionable odors through Regulation 7, Odorous Substances, which does not become applicable until the Air Pollution Control Officer (APCO) receives odor complaints from ten or more complainants within a 90-day period. Once effective, Regulation 7 places general limitation on odorous substances and specific emission limitations on certain odorous compounds, which remain effective until such time that citizen complaints have been received by the APCO for one year. The limits of Regulation 7 become applicable again when the APCO receives odor complaints from five or more complainants within a 90-day period. Thus, although not anticipated, if odor complaints are made after the proposed project is developed, the BAAQMD would ensure that such odors are addressed and any potential odor effects reduced to less than significant.

As noted previously, all projects under the jurisdiction of BAAQMD are required to implement the BAAQMD's Basic Construction Mitigation Measures. The aforementioned measures would act to reduce construction-related dust by ensuring that haul trucks with loose material are covered, reducing vehicle dirt track-out, and limiting vehicle speeds within project site, among other methods, which would ensure that construction of the proposed project does not result in substantial emissions of dust. Following project construction, the project site would not include any exposed topsoil. Thus, project operations would not include any substantial sources of dust.

For the aforementioned reasons, construction and operation of the proposed project would not result in emissions (such as those leading to odors) adversely affecting a substantial number of people, and a ***less-than-significant*** impact would result.

IV. 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 identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or 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 and Wildlife or US Fish and Wildlife Service?	☐	☐	☐	✖
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	✖
d. Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☐	✖	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	✖	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	✖

Discussion

a. Currently, the project site is developed with commercial uses and impervious surfaces. With the exception of landscaping, the site does not contain any vegetation. The site does not contain any wetland features or waterways.

Special-status species include those plant and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal and State Endangered Species Acts. Both acts afford protection to listed and proposed species. In addition, California Department of Fish and Wildlife (CDFW) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, sensitive species included in USFWS Recovery Plans, and CDFW special-status invertebrates are all considered special-status species. Although CDFW Species of Special Concern generally do not have special legal status, they are given special consideration under CEQA. In addition to regulations for special-status species, most birds in the U.S., including non-status species, are protected by the Migratory Bird Treaty Act (MBTA) of 1918. Under the MBTA, destroying active nests, eggs, and young is illegal. In addition, plant species on California Native Plant Society (CNPS) Lists 1 and 2 are considered special-status plant species and are protected under CEQA.

A search of published records of special-status plant and wildlife species was conducted for the Antioch South USGS 7.5" quadrangle, in which the project site occurs, and for the eight surrounding quadrangles (Antioch North, Honker Bay, Jersey Island, Brentwood, Clayton, Diablo, Tassajara and Byron Hot Springs), using the California Natural Diversity Data Base (CNDDB) Rarefind 5 application. The intent of the database review was to identify documented occurrences of special-status species in the vicinity of the project area and to determine their locations relative to the project site. It should be noted that plant and wildlife species that are not considered special-status, as defined above, were excluded from the analysis, as such species are not protected under CEQA. The results of the CNDDB search and other queries are discussed below.

Special-Status Plants

Based on the results of the CNDDB search, a total of 55 special-status plant species have been recorded within the project region. Of the 55 species, most are considered absent from or unlikely to occur on the site due to a lack of suitable habitat, such as vernal pools, cismontane woodland, and chaparral. In addition, any species for which the site provides marginal habitat has never been observed in the project vicinity or have not been observed for many decades and most have been considered presumed extirpated. Finally, given that the site is covered primarily in impervious surfaces and in a developed area, special-status plants would not have the possibility of occurring on the project site.

Special-Status Wildlife

Based on the results of the CNDDB search, at total of 45 special-status wildlife species have been recorded within the project region. Of the 45 species, 43 would be absent from or unlikely to occur on the site due to a lack of suitable habitat, including grassland, riparian woodland, vernal pools, and wetlands. The remaining two special-status wildlife species may potentially be transients to the site or may occur within areas adjacent to the site. Such species include the Townsend's big-eared bat and the Swainson's hawk. In addition, ground-nesting raptors and nesting migratory birds protected under the MBTA have the potential to occur within trees on or adjacent to the site.

Townsend's Big-Eared Bat

The project site and surrounding area contain suitable trees for Townsend's big-eared bat to roost. However, the site does not contain any suitable foraging habitat. Therefore, while unlikely, special-status bat species could roost in trees within or near the project site. Thus, a significant impact related to special-status bats could occur.

Swainson's Hawk

Swainson's hawks are known to occur within approximately 0.5-mile of the site and could reside in trees on or adjacent to the project site. As suitable nesting and foraging habitat exists in the grassland approximately 0.75-mile south of the project site, Swainson's hawks could travel through the site or reside in on-site or nearby trees. Thus, construction noise on the project site could disrupt surrounding nests, and a potentially significant impact could occur.

Nesting and Migratory Birds

The grassland south of the project site may support nesting birds and ground-nesting raptors, including species protected by the MBTA. In addition, some of the trees on-site could provide roosting habitat for migratory birds. Buildout of the project during the nesting period for migratory birds (i.e., typically between February 1 to August 31), including initial

site grading and soil excavation, could disrupt the travel pattern or disturb nearby nests of birds protected under the MBTA. Thus, a potentially significant impact could occur.

Conclusion

Based on the above, implementation of the proposed project could potentially affect Townsend's big-eared bat, Swainson's hawk, and nesting birds and ground-nesting raptors protected by the MBTA. Thus, the proposed project could have an adverse effect, either directly or through habitat modifications, on species identified as special-status species in local or regional plans, policies, or regulations, or by the CDFW or the USFWS. Therefore, a ***potentially significant*** impact could result.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level. It should be noted that in July 2007, the East Contra Costa County (ECCC) Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) was adopted by Contra Costa County, other member cities, the USFWS, and the CDFW. The City of Antioch, however, declined to participate in the HCP/NCCP. Nonetheless, the mitigation measures include language to reflect the possibility that the City may, in the future, enter into an agreement with the Conservancy for coverage of impacts to ECCC HCP/NCCP covered species or otherwise adopt a different HCP/NCCP.

Townsend's Big-Eared Bat

IV-1 *Prior to initiation of demolition activities, the project applicant shall retain a qualified biologist to conduct a detailed bat survey of the site. If a non-breeding and non-wintering bat colony is found, the individuals shall be humanely evicted by way of the partial dismantlement (two-step removal) of the buildings or trees one to two days prior to demolition/tree removal. Partial dismantlement shall occur under the direction of a qualified biologist to ensure that no harm or "take" would occur to any bats as a result of demolition/tree removal activities. Should the biologist not be able to visually access all potential roost areas, a night emergence survey shall be required. If special-status bats are not observed during pre-construction surveys, demolition/tree removal may continue. Results of the pre-construction survey shall be submitted to the Planning Manager for the City of Antioch.*

IV-2 *If a maternity colony or overwintering colony is detected in the buildings or trees within the project site, a construction-free buffer shall be established around the structure and remain in place until it has been determined that the nursery is not active. In addition, in the event of detection, demolition shall preferably occur between March 1st and April 15th or between August 15th and October 15th.*

Swainson's Hawk

IV-3. *Prior to any project-related ground disturbance that occurs during the nesting season (March 15th to September 15th), a qualified biologist shall conduct a preconstruction survey at least two survey periods prior to the start of construction. Surveys shall follow the protocol in the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory*

Committee 2000), including the survey period lengths identified therein. A written summary of the survey results shall be submitted to the Planning Manager for the City of Antioch. If Swainson's hawk are not found on-site, further mitigation is not necessary.

If an active nest is found within any off-site trees, a minimum buffer distance of 600 feet shall be established for a nest that is already active prior to construction, and a minimum buffer distance of 150 feet shall be used for a nest that starts after construction has already initiated. Such minimum distances are based on potential impact distances stated in the Swainson's Hawk Technical Advisory Committee's Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (2000). Appropriate buffer distances shall be determined on the ground by a qualified biologist and shall be based on actual observations of the nest and parent behavior, the stage of nesting, and level of potential disturbance. The buffer(s) shall be identified on the ground with flagging or fencing, and shall be maintained until a qualified biologist has determined that the young have fledged and the nest is inactive. The biologist shall have the authority to stop construction if construction activities are likely to result in nest abandonment.

IV-4. *As an alternative to completion of Mitigation Measure IV-3, the project applicant could comply with one of the following:*

1) *Comply with the applicable terms and conditions of the ECCC HCP/NCCP, as determined in written "Conditions of Coverage" by the East Contra Costa County Habitat Conservancy (Conservancy), provided that the City has first entered into an agreement with the Conservancy for coverage of impacts to ECCCHCP/NCCP Covered Species; or*
2) *Comply with a habitat conservation plan and/or natural community conservation plan developed and adopted by the City, including payment of applicable fees, provided that CDFW and USFWS have approved the conservation plan.*

Nesting Migratory Birds

IV-5. *Pre-construction surveys for nesting birds shall be conducted by a qualified biologist within on-site ground-nesting habitat and a 250-foot buffer around the project site boundaries, if feasible, not more than 14 days prior to site disturbance during the breeding season (February 1st to August 31st). Results of the survey shall be submitted to the Planning Manager for the City of Antioch. If site disturbance commences outside the breeding season, pre-construction surveys for nesting birds are not required. If active nests of migratory birds are not detected within approximately 250 feet of the project site, further mitigation is not required.*

If nesting raptors or other migratory birds are detected on or adjacent to the site during the survey, an appropriate construction-free buffer shall be established around all active nests. Actual size of buffer would be determined by the project biologist, and would depend on species,

topography, and type of activity that would occur in the vicinity of the nest. Typical buffers are 25 feet for non-raptors and up to 250 feet for raptors. The project buffer would be monitored periodically by the project biologist to ensure compliance. After the nesting is completed, as determined by the biologist, the buffer would no longer be required. Buffers shall remain in place for the duration of the breeding season or until a qualified biologist has confirmed that all chicks have fledged and are independent of their parents.

Alternatively, the project applicant could comply with one of the following:

1) *Comply with the applicable terms and conditions of the ECCC HCP/NCCP, as determined in written "Conditions of Coverage" by the East Contra Costa County Habitat Conservancy (Conservancy), provided that the City has first entered into an agreement with the Conservancy for coverage of impacts to ECCCHCP/NCCP Covered Species; or*
2) *Comply with a habitat conservation plan and/or natural community conservation plan developed and adopted by the City, including payment of applicable fees, provided that CDFW and FWS have approved the conservation plan.*

b,c. The project site consists of impervious surfaces and existing structures. Thus, based on the developed nature of the site and the surrounding area, jurisdictional waters, streambeds, and sensitive plant communities do not exist on or near the site. The project site does not contain riparian habitat or other sensitive natural communities, including wetlands. Therefore, the proposed project would not have a substantial adverse effect on riparian habitat, sensitive natural communities, or State or federally protected wetlands, and ***no impact*** would occur.

d. Currently, the project site is developed with a commercial shopping center and parking areas and is surrounded by existing development. Thus, the project site does not act as a migratory wildlife corridor. As noted above, the project site does not contain streams or other waterways that could be used by migratory fish or as a wildlife corridor for other wildlife species. Because the proposed project would be generally consistent with the developed nature of the existing conditions, the development of the proposed project would not interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites. Thus, a ***less-than-significant*** impact would occur.

e. Section 9-5.1205 of the City's Zoning Ordinance regulates the preservation and removal of heritage trees. Currently, the project site contains only ornamental landscaping trees located in planter boxes throughout the parking area and along the frontage of the site. A tree survey was performed on the project site to evaluate the location and sizes of existing trees, and is included in the site plans. While a total of 156 trees were inventoried within the entire project site, only approximately 50 trees would require removal as part of the project. However, as determined by the tree survey, none of the on-site trees meet the City's criteria for consideration as a landmark, indigenous, mature, or established tree. As such, a tree removal permit would not be required, and the proposed project would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, and a ***less-than-significant*** impact could occur.

f. As noted previously, in July 2007, the ECCC HCP/NCCP was adopted by Contra Costa County, other member cities, the USFWS, and the CDFW. The City of Antioch, however, declined to participate in the HCP/NCCP. While the City is currently considering drafting a new HCP/NCCP, the document has not yet been finalized or adopted. Therefore, the project site is not located in an area with an approved HCP/NCCP, or local, regional, or State habitat conservation plan. As a result, ***no impact*** would occur regarding a conflict with the provisions of such a plan.

V. 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 defined in Section 15064.5?	☐	☐	✖	☐
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?	☐	✖	☐	☐
c. Disturb any human remains, including those interred outside of dedicated cemeteries.	☐	✖	☐	☐

Discussion

a. Historical resources are features that are associated with the lives of historically important persons and/or historically significant events, that embody the distinctive characteristics of a type, period, region or method of construction, or that have yielded, or may be likely to yield, information important to the pre-history or history of the local area, California, or the nation. Examples of typical historical resources include, but are not limited to, buildings, farmsteads, rail lines, bridges, and trash scatters containing objects such as colored glass and ceramics. Per CEQA Guidelines, buildings constructed over 50 years ago which possess architectural or historical significance may be considered historic resources. The existing building that would be demolished was constructed in 1987 as part of the Delta Fair Shopping Center. Thus, the building would not be eligible to be considered a historic resource. Therefore, the project would not cause a substantial adverse change in the significance of a historical resource, and a ***less-than-significant*** impact would occur.

b-c. The Northwest Information Center performed a search of the California Historic Resources Information System for the proposed project. During the search, the State Office of Historic Preservation Historic Property Directory, which includes listings of the California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and the National Register of Historic Places, did not list any recorded buildings or structures within or adjacent to the project area. Review of historical literature and maps did not give indication of the possibility of historic-period activity within the project area. Additionally, the results of the Sacred Lands File Search conducted through the Native American Heritage Commission were negative. Thus, the site has a low potential for unrecorded historic-period archaeological or cultural resources to be discovered.

Based on evaluation of the environmental setting and features associated with known sites, Native American resources in Contra Costa County have been found in areas marginal to the San Joaquin River Delta, inland ridges, and near intermittent and perennial watercourses. Given that the project site is currently developed, Native American archaeological resources would have likely been discovered during past grading and development. However, because the project site is located approximately 1.25 miles south of the San Joaquin River Delta and is in an area of alluvial fan deposits, the potential for buried unrecorded Native American resources to be discovered is moderate to high.

If previously unknown resources are encountered during construction activities, the proposed project could cause a substantial adverse change in the significance of a unique archaeological resource pursuant to CEQA Guidelines Section 15064.5 and/or disturb

human remains, including those interred outside of dedicated cemeteries, during construction. Therefore, impacts could be considered ***potentially significant***.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

V-1. *In the event of the accidental discovery or recognition of any human remains, further excavation or disturbance of the find or any nearby area reasonably suspected to overlie adjacent human remains shall not occur until compliance with the provisions of CEQA Guidelines Section 15064.5(e)(1) and (2) has occurred, and the Community Development Department shall be notified immediately. The Guidelines specify that in the event of the discovery of human remains other than in a dedicated cemetery, no further excavation at the site or any nearby area suspected to contain human remains shall occur until the County Coroner has been notified to determine if an investigation into the cause of death is required. If the coroner determines that the remains are Native American, then, within 24 hours, the Coroner must notify the Native American Heritage Commission, which in turn will notify the most likely descendants who may recommend treatment of the remains and any grave goods. If the Native American Heritage Commission is unable to identify a most likely descendant or most likely descendant fails to make a recommendation within 48 hours after notification by the Native American Heritage Commission, or the landowner or his authorized agent rejects the recommendation by the most likely descendant and mediation by the Native American Heritage Commission fails to provide a measure acceptable to the landowner, then the landowner or his authorized representative shall rebury the human remains and grave goods with appropriate dignity at a location on the property not subject to further disturbances. Should human remains be encountered, a copy of the resulting County Coroner report noting any written consultation with the Native American Heritage Commission shall be submitted as proof of compliance to the Planning Manager for the City of Antioch.*

V-2. *If any prehistoric or historic artifacts, or other indications of cultural deposits, such as historic privy pits or trash deposits, are found once ground disturbing activities are underway, all work within the vicinity of the find(s) shall cease and the find(s) shall be immediately evaluated by a qualified archaeologist. If the find is determined to be a historical or unique archaeological resource, contingency funding and a time allotment to allow for implementation of avoidance measures or appropriate mitigation shall be made available (CEQA Guidelines Section 15064.5). Work may continue on other parts of the project site while historical or unique archaeological resource mitigation takes place (Public Resources Code Sections 21083 and 21087).*

VI. 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?	☐	☐	✖	☐

Discussion

a,b. The main forms of available energy supply are electricity, natural gas, and oil. A description of the California Green Building Standards Code and the Building Energy Efficiency Standards, with which the proposed project would be required to comply, as well as discussions regarding the proposed project's potential effects related to energy demand during construction and operations are provided below.

California Green Building Standards Code

The California Green Building Standards Code, otherwise known as the CALGreen Code (CCR Title 24, Part 11), is a portion of the California Building Standards Code (CBSC), which became effective with the rest of the CBSC on January 1, 2017. The purpose of the CALGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices. The provisions of the code apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure throughout California. Requirements of the CALGreen Code include, but are not limited to, the following measures:

- Compliance with relevant regulations related to future installation of Electric Vehicle charging infrastructure in residential and non-residential structures;
- Indoor water use consumption is reduced through the establishment of maximum fixture water use rates;
- Outdoor landscaping must comply with the California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), or a local ordinance, whichever is more stringent, to reduce outdoor water use;
- Diversion of 65 percent of construction and demolition waste from landfills;
- Mandatory use of low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particle board; and
- For some single-family and low-rise residential development developed after January 1, 2020, mandatory on-site solar energy systems capable of producing 100 percent of the electricity demand created by the residence(s). Certain residential developments, including those developments that are subject to substantial shading, rendering the use of on-site solar photovoltaic systems infeasible, are exempted from the foregoing requirement.

Building Energy Efficiency Standards

The 2019 Building Energy Efficiency Standards is a portion of the CBSC which expands upon energy-efficiency measures from the 2016 Building Energy Efficiency Standards. The 2019 Building Energy Efficiency Standards will go into effect for building permit

applications submitted on or after January 1, 2020. The 2019 standards provide for additional efficiency improvements beyond the current 2016 standards. Non-residential buildings built in compliance with the 2019 standards are anticipated to use approximately 30 percent less energy compared to the 2016 standards, primarily due to lighting upgrades.[9]

Construction Energy Use

Construction of the proposed project would involve on-site energy demand and consumption related to use of oil in the form of gasoline and diesel fuel for construction worker vehicle trips, hauling and materials delivery truck trips, and operation of off-road construction equipment. In addition, diesel-fueled portable generators may be necessary to provide additional electricity demands for temporary on-site lighting, welding, and for supplying energy to areas of the sites where energy supply cannot be met via a hookup to the existing electricity grid. Project construction would not involve the use of natural gas appliances or equipment.

Even during the most intense period of construction, all construction equipment and operation thereof would be regulated by the CARB In-Use Off-Road Diesel Vehicle Regulation. The In-Use Off-Road Diesel Vehicle Regulation is intended to reduce emissions from in-use, off-road, heavy-duty diesel vehicles in California by imposing limits on idling, requiring all vehicles to be reported to CARB, restricting the addition of older vehicles into fleets, and requiring fleets to reduce emissions by retiring, replacing, or repowering older engines, or installing exhaust retrofits. The In-Use Off-Road Diesel Vehicle Regulation would subsequently help to improve fuel efficiency and reduce GHG emissions. Technological innovations and more stringent standards are being researched, such as multi-function equipment, hybrid equipment, or other design changes, which could help to reduce demand on oil and emissions associated with construction.

The CARB has recently prepared the *2017 Climate Change Scoping Plan Update* (2017 Scoping Plan),[10] which builds upon previous efforts to reduce GHG emissions and is designed to continue to shift the California economy away from dependence on fossil fuels. Appendix B of the 2017 Scoping Plan includes examples of local actions (municipal code changes, zoning changes, policy directions, and mitigation measures) that would support the State's climate goals. The examples provided include, but are not limited to, enforcing idling time restrictions for construction vehicles, utilizing existing grid power for electric energy rather than operating temporary gasoline/diesel-powered generators, and increasing use of electric and renewable fuel-powered construction equipment. The regulations described above, with which the proposed project must comply, would be consistent with the intention of the 2017 Scoping Plan and the recommended actions included in Appendix B of the 2017 Scoping Plan.

Based on the above, the temporary increase in energy use occurring during construction of the proposed project would not result in a significant increase in peak or base demands or require additional capacity from local or regional energy supplies. In addition, the proposed project would be required to comply with all applicable regulations related to energy conservation and fuel efficiency, which would help to reduce the temporary increase in demand.

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9 California Energy Commission. *Title 24 2019 Building Energy Efficiency Standards FAQ*. November 2018.
10 California Air Resources Board. *The 2017 Climate Change Scoping Plan Update.* January 20, 2017.

Operational Energy Use

Following implementation of the proposed project, PG&E would provide electricity and natural gas to the project site. Energy use associated with operation of the proposed project would be typical of residential and retail uses, requiring electricity and natural gas for interior and exterior building lighting, heating, ventilation, and air conditioning (HVAC), electronic equipment, machinery, refrigeration, appliances, security systems, and more. Maintenance activities during operations, such as landscape maintenance, would involve the use of electric or gas-powered equipment. In addition to on-site energy use, the proposed project would result in transportation energy use associated with vehicle trips generated by the proposed residential development.

The proposed residential portion of the project would be subject to all relevant provisions of the most recent update of the CBSC, including the Building Energy Efficiency Standards. Adherence to the most recent CALGreen Code and the Building Energy Efficiency Standards would ensure that the proposed structures would consume energy efficiently through the incorporation of such features as efficient water heating systems, high performance attics and walls, and high efficacy lighting. Required compliance with the CBSC would ensure that the building energy use associated with the proposed project would not be wasteful, inefficient, or unnecessary. In addition, electricity supplied to the project by PG&E would comply with the State's Renewables Portfolio Standard (RPS), which requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020 and to 60 percent by 2030. Thus, a portion of the energy consumed during project operations would originate from renewable sources.

With regard to transportation energy use, the proposed project would comply with all applicable regulations associated with vehicle efficiency and fuel economy. In addition, as discussed in Section XVII, Transportation, of this IS/MND, the project site is located within the vicinity of existing transit facilities, as well as resident-serving commercial uses. The proposed mixed use development would increase the diversity of uses on the project site. The site's proximity to existing transit facilities and commercial uses uses would reduce VMT and, consequently, fuel consumption associated with the proposed project. Furthermore, the proposed project would include connections to the existing sidewalks along Delta Fair Boulevard and Buchanan Road. Pedestrian walkways would also be provided throughout the project site. Therefore, the project would provide for increased pedestrian connectivity with the surrounding area, potentially resulting in reduced vehicle use.

Conclusion

Based on the above, construction and operation of the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Thus, a ***less-than-significant*** impact would occur.

VII. GEOLOGY AND SOILS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of a known fault?	☐	☐	✖	☐
ii. Strong seismic ground shaking?	☐	☐	✖	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	✖	☐
iv. Landslides?	☐	☐	✖	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	✖	☐	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	✖	☐
d. Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code, creating substantial direct or indirect risks to life or property?	☐	☐	✖	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	✖
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	✖	☐	☐

Discussion

ai-ii. According to the City of Antioch General Plan, seismicity at the proposed project site is influenced by the San Andreas Fault System, as well as the proximate Great Valley Fault System located at the eastern foot of the Coast Ranges. The Marsh Creek-Greenville-Clayton Fault is the closest active fault, located approximately three miles west of the site. Active or potentially active faults are not known to intersect with the project site. In addition, the site is not mapped within an Alquist-Priolo Earthquake Fault Zone. Thus, the potential for surface rupture due to faulting occurring beneath the site during the design life of the proposed development would be low.

Due to the site's proximity to the nearest active fault, the potential exists for the proposed industrial buildings to be subject to seismic ground shaking. However, the proposed buildings would be properly engineered in accordance with the California Building Code, which includes engineering standards appropriate for the seismic area in which the project site is located. Conformance with the design standards is enforced through building plan review and approval by the City of Antioch Building Division prior to the issuance of building permits. Proper engineering of the proposed project would ensure that seismic-

related effects would not cause adverse impacts. Therefore, a ***less-than-significant*** impact would occur related to seismic surface rupture and strong seismic ground shaking.

aiii,aiv, c,d. The proposed project's potential effects related to liquefaction, subsidence, landslides, lateral spreading, and expansive soils are discussed in detail below.

Liquefaction

Liquefaction is a phenomenon in which saturated cohesionless soils are subject to a temporary loss of shear strength due to pore pressure buildup under the cyclic shear stresses associated with intense earthquakes. Primary factors that trigger liquefaction are: moderate to strong ground shaking (seismic source), relatively clean, loose granular soils (primarily poorly graded sands and silty sands), and saturated soil conditions (shallow groundwater).

According to the General Plan EIR, the project site is in an area of very low liquefaction risk. Additionally, the site is underlain with loamy clay soils, which would not be subject to liquefaction because clayey soils are not considered loose soil, and are not sensitive to liquefaction.

Landslides

Seismically-induced landslides are triggered by earthquake ground shaking. The risk of landslide hazard is greatest in areas with steep, unstable slopes. The project site is not located on or near any unstable slopes. Thus, landslides are not likely to occur on- or off-site as a result of the proposed project.

Expansive Soils

Expansive soils can undergo significant volume changes with changes in moisture content. Specifically, such soils shrink and harden when dried and expand and soften when wetted. If structures are underlain by expansive soils, foundation systems must be capable of withstanding the potential damaging movements of the soil. Per the U.S. Department of Agriculture Natural Resources Conservation Service, the existing on-site soils have a Plasticity Index of 6.9.[11] According to the 2016 CBSC, soils are considered expansive if the Plasticity Index is above 15. Thus, the project site does not contain expansive soil, as defined in Table 18-1B of the Uniform Building Code.

Other Unstable Soil Conditions

Lateral spreading is associated with terrain near free faces such as excavations, channels, or open bodies of water. As discussed above, liquefaction is a type of seismic-related ground failure in which the strength and stiffness of a soil is reduced by earthquake shaking or other rapid loading. Subsidence occurs when loose, sandy soils settle during earthquake shaking. The project site is currently developed with commercial uses and located in close proximity to other development. The site is not located near any open faces or bodies of water; thus, the site would not be impacted by lateral spreading. Additionally, because the project site is underlain with clay soils, which are not generally considered loose, the project site would not be likely be impacted by liquefaction or subsidence during a seismic event. Therefore, the proposed project would not expose any

[11] U.S. Department of Agriculture Natural Resources Conservation Service. *Web Soil Survey.* Available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed October 2019.

people or structures to risks associated with other unstable soil conditions, including lateral spreading, subsidence, and collapse.

Conclusion

Based on the above discussion, the proposed project would not result in on- or off-site landslides, liquefaction, unstable, or expansive soils. Therefore, the project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving liquefaction, landslides, or being located on unstable or expansive soil. Therefore, the impact would be ***less-than-significant***.

b. During grading activities associated with development of the proposed project, and prior to overlaying of the ground with impervious surfaces and landscaping elements, topsoil would temporarily be exposed. Thus, the potential exists for wind and water to erode portions of the exposed topsoil during construction, which could adversely affect downstream storm drainage facilities. Impacts related to substantial soil erosion or the loss of topsoil during construction of the proposed project would be ***potentially significant.***

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

VII-1. *Prior to issuance of grading and building permits, the project applicant shall submit, for the review and approval by the City Engineer, an erosion control plan that utilizes standard construction practices to limit the erosion effects during construction of the proposed project. Measures shall include, but are not limited to, the following:*

- *Hydro-seeding;*
- *Placement of erosion control measures within drainage ways and ahead of drop inlets;*
- *The temporary lining (during construction activities) of drop inlets with "filter fabric" (a specific type of geotextile fabric);*
- *The placement of straw wattles along slope contours;*
- *Directing subcontractors to a single designation "wash-out" location (as opposed to allowing them to wash-out in any location they desire);*
- *The use of siltation fences; and*
- *The use of sediment basins and dust palliatives.*

e. The proposed project would connect to the existing City sanitary sewer lines located in Buchanan Road and San Jose Drive. The construction or operation of septic tanks or other alternative wastewater disposal systems is not included as part of the proposed project. Therefore, ***no impact*** regarding the capability of soil to adequately support the use of septic tanks or alternative wastewater disposal systems would occur.

f. Per the City of Antioch General Plan, numerous fossils have been collected from the Antioch Planning Area. A fossil locality search was conducted at the California Academy of Sciences, Golden Gate Park (CAS). CAS identified marine pelecypod and gastropod

fossils collected from almost all of the sedimentary formations located in the City. Literature review indicated that all of the formations north of Mt. Diablo contain fossils. At least eight fossil localities occur within and immediately adjacent to the City's Planning Area and another five are within a one-mile radius of the Planning Area. Fossils in the Planning Area identified by California Museum of Paleontology, UC Berkeley include mammoths, primitive horses, bison, rats, beaver-type creatures, and sloths. As noted in the General Plan EIR, buildout of vacant parcels within the City's Planning Area will involve ground-disturbing activities and, thus, could potentially destroy, directly or indirectly, unique paleontological resources or sites.

The City has not identified any unique geologic features within the Planning Area, and thus, the project site does not contain any known unique geologic features. However, based on the above, paleontological resources could exist within the project site. Should previously unknown paleontological resources exist within the project site, ground-disturbing activity, such as grading, trenching or excavating, associated with implementation of the proposed project would have the potential to disturb or destroy such features. Therefore, the proposed project could result in the direct or indirect destruction of a unique paleontological resource, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

VII-2. *Prior to initiation of ground-disturbing activities, the applicant shall retain the services of a professional paleontologist to educate the construction crew that will be conducting grading and excavation at the project site. The education shall consist of an introduction to the geology of the project site and the kinds of fossils that may be encountered, as well as what to do in case of a discovery. Should any vertebrate fossils (e.g., teeth, bones), an unusually large or dense accumulation of intact invertebrates, or well-preserved plant material (e.g., leaves) be unearthed by the construction crew, then ground-disturbing activity shall be diverted to another part of the project site and the paleontologist shall be called on-site to assess the find and, if significant, recover the find in a timely matter. Finds determined significant by the paleontologist shall then be conserved and deposited with a recognized repository, such as the University of California Museum of Paleontology. The alternative mitigation would be to leave the significant finds in place, determine the extent of significant deposit, and avoid further disturbance of the significant deposit. Proof of the construction crew awareness training shall be submitted to the Planning Manager for the City of Antioch in the form of a copy of training materials and the completed training attendance roster.*

VIII. GREENHOUSE GAS EMISSIONS. *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 an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?	☐	✖	☐	☐

Discussion

a,b. Emissions of greenhouse gases (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. An individual project's GHG emissions are at a micro-scale level relative to global emissions and effects to global climate change; however, an individual project could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. As such, impacts related to emissions of GHG are inherently considered cumulative impacts.

Implementation of the proposed project would cumulatively contribute to increases of GHG emissions. Estimated GHG emissions attributable to future development would be primarily associated with increases of carbon dioxide (CO_2) and, to a lesser extent, other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O) associated with area sources, mobile sources or vehicles, utilities (electricity and natural gas), water usage, wastewater generation, and the generation of solid waste. The primary source of GHG emissions for the project would be mobile source emissions. The common unit of measurement for GHG is expressed in terms of annual metric tons of CO_2 equivalents ($MTCO_2e$/yr).

The proposed project is located within the jurisdictional boundaries of BAAQMD. The BAAQMD threshold of significance for project-level operational GHG emissions is 1,100 $MTCO_2e$/yr or 4.6 $MTCO_2e$/yr per service population (population + employees). BAAQMD's approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions needed to move towards climate stabilization. If a project would generate GHG emissions above the threshold level, the project would be considered to generate significant GHG emissions and conflict with applicable GHG regulations. It should be noted that the City of Antioch approved Community and Municipal Climate Action Plans, which include city-wide goals and strategies for the reduction of GHG emissions. However, a quantitative threshold of significance for GHG emissions for individual development projects has not been established by the City and is not set forth in the Climate Action Plans. As such, the City has determined that BAAQMD's established thresholds are appropriate for analysis of the proposed project.

The proposed project's GHG emissions were quantified with CalEEMod using the same assumptions as presented in the Air Quality section of this IS/MND, and compared to the applicable thresholds of significance. The proposed project's required compliance with the

current California Building Energy Efficiency Standards Code was assumed in the modeling. In addition, the CO_2 intensity factor within the model was adjusted to reflect the Pacific Gas & Electric Company's anticipated progress towards statewide RPS goals. All CalEEMod results are included in Appendix A to this IS/MND.

Construction GHG emissions are a one-time release and are, therefore, not typically expected to generate a significant contribution to global climate change. Nonetheless, the proposed project's construction-related GHG emissions have been estimated and are presented in Table 7 below. The construction modeling assumptions are described in the Air Quality section of this IS/MND and included in the appendix.

Emissions modeling for construction showed that the most intensive year of construction of the proposed development would result in GHG emission of 590.08 $MTCO_2e$/yr. Neither the City nor BAAQMD has adopted a threshold of significance for construction-related emissions. In order to provide a conservative estimate of emissions, the proposed project's construction GHG emissions have been amortized over the anticipated construction period of the project. As shown in Table 7, total amortized unmitigated construction emissions would equate to 572.9 $MTCO_2e$/yr over the assumed two year construction period of the project.

Table 7
Unmitigated Annual Project Construction GHG Emissions

Year	Annual GHG Emissions ($MTCO_2e$/yr)
2020	590.08
2021	555.75
Total Construction Emissions	**1,145.83**
Amortized Annual Construction Emissions	**572.9**

Source: CalEEMod, November 2019 (Appendix A).

As noted previously, the BAAQMD threshold of significance for project-level operational GHG emissions is 1,100 $MTCO_2e$/yr or 4.6 $MTCO_2e$/yr per service population (population + employees). According to the CalEEMod results, the proposed project would result in total annual GHG emissions as shown in Table 8, including the amortized construction emissions. Additionally, the GHG emissions associated with the current operations of the existing Delta Fair Shopping Center are also presented in the table. In the absence of the proposed project, the emissions would continue unabated. Considering that existing GHG emissions resulting from the current operations at the Delta Fair Shopping Center would continue in the absence of the proposed project, the analysis of operational GHG emissions presented in this IS/MND focuses on the net change in emissions from existing Delta Fair Shopping Center operations and the proposed project operations.

Per the City's Housing Element, the City of Antioch had an average household size of 3.15 persons per household.[12] Consequently, the proposed project could provide housing for up to approximately 661 people (210 proposed households X 3.15 persons per household = 661 new residents). In addition, because the proposed project would include retail use, the service population would also include employees working on the site. Given the square footage of the retail space, the estimated service population would include 11 employees.[13] Thus, the service population for the proposed project would total 672

[12] City of Antioch. *Housing Element* [pg. 2-9]. Adopted April 14, 2015.
[13] U.S. Green Building Council. *Building Area Per Employee by Business Type*. May 13, 2008.

people.
Based on the total annual GHG emissions shown in the table, including amortized annual construction emissions, and a total service population of 661 residents and 11 employees, the proposed project would result in annual per service population emissions of approximately 3.31 $MTCO_2e$/yr (2,227.2 $MTCO_2e$/yr / 672 residents and employees = 3.31 $MTCO_2e$/yr-resident and employees). Thus, implementation of the proposed project would result in emissions below the applicable 4.6 $MTCO_2e$/yr per service population threshold of significance, and the proposed project would not be expected to have a significant impact related to GHG emissions.

Table 8
Unmitigated Operational GHG Emissions Year ($MTCO_2e$/yr)

Emission Source	Proposed Project Annual GHG Emissions	Existing Delta Fair Center Annual GHG Emissions	Net New Annual GHG Emissions
Area	2.62	0.00	2.62
Energy	421.0	268.6	152.4
Mobile	3,163.6	1,686.4	1,477.2
Solid Waste	90.0	85.0	5.0
Water	44.5	27.3	17.1
Amortized Construction Emissions	572.9	-	572.9
Total Annual GHG Emissions	**4,294.6**	**2,067.3**	**2,227.2**
Total Annual GHG Emissions Per Service Population	**--**	**--**	**3.31**
BAAQMD Threshold			4.6
Exceeds Threshold?			**NO**

Source: CalEEMod, November 2019 (Appendix A).

It should be noted that the City's Climate Action Plans were established to ensure the City's compliance with the statewide GHG reduction goals required by AB 32. Although the Climate Action Plans do not include quantitative thresholds to assess a project's compliance, projects that are in compliance with the Climate Action Plans would be considered compliant with the GHG reduction goals required by AB 32. For instance, projects showing emissions reductions as required by the Climate Action Plans, or projects incorporating reduction strategies from the Climate Action Plans are understood to be in compliance with the Climate Action Plans' GHG emissions reductions goals, and, thus, in compliance with AB 32.

The proposed project would comply with several emissions reductions strategies included in the City's Community Climate Action Plans. For instance, the proposed project would include renovation of the existing structures within the project site. Such renovations are anticipated to improve the energy efficiency of the existing facilities in compliance with Strategy E3 and E14 of the Community Climate Action Plan. Furthermore, the proposed project would include planting of low-maintenance landscaping, including trees throughout the project site, which would be generally consistent with policy E4 and L5 of the Community Climate Action Plan.

Based on the above, the proposed project would not be considered to generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs; and impacts would be considered ***less than significant***.

IX. 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 likely release of hazardous materials into the environment?	☐	☐	✖	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	✖	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	✖
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	✖
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	✖	☐
g. Expose people or structures, either directly or indirectly, to the risk of loss, injury or death involving wildland fires?	☐	☐	✖	☐

Discussion

a. Residential land uses are not typically associated with the routine transport, use, disposal, or generation of substantial amounts of hazardous materials. Future residents may use common household cleaning products, fertilizers, and herbicides on-site, any of which could contain potentially hazardous chemicals; however, such products would be expected to be used in accordance with label instructions. Similarly, the retail operations associated with the project would not result in the disposal or transport of hazardous materials, but may require the use of common cleaning products. Due to the regulations governing use of such products and the amount utilized on the site, routine use of such products would not represent a substantial risk to public health or the environment. Therefore, the project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and a ***less-than-significant*** impact would occur.

b. The following discussion provides an analysis of potential hazards and hazardous materials associated with upset or accident conditions related to the proposed construction activities and existing on-site conditions.

Construction activities associated with the proposed project would involve the use of heavy equipment, which would contain fuels and oils, and various other products such as concrete, paints, and adhesives. Small quantities of potentially toxic substances (e.g., petroleum and other chemicals used to operate and maintain construction equipment) would be used at the project site and transported to and from the site during construction. However, the project contractor would be required to comply with all California Health and Safety Codes and local City ordinances regulating the handling, storage, and transportation of hazardous and toxic materials.

The project site is currently occupied by the Delta Fair Shopping Center. With the exception of landscaping elements throughout the existing parking areas and along the site frontages, the project site consists primarily of impervious surfaces. Features such as stressed vegetation, septic systems, wells, above-ground storage tanks (ASTs), and underground storage tanks (USTs) do not exist on the site. While the proposed project would include demolition of 73,546 sf of the existing Shopping Center, the buildings to be demolished were constructed in 1987, which is after the year that lead-based paint was banned by the Federal Government. Therefore, demolition of the structures as part of the project would not expose people to risks associated with lead-based paint. Additionally, the Code of Federal Regulations states that surface materials and thermal systems constructed after 1980 are presumed to not have any asbestos-containing materials. Because the structures were developed in 1987, the risk of asbestos exposure is low.

Given that the site is currently developed and covered in impervious surfaces, the site does not contain any known hazardous conditions, nor do the existing structures to be demolished pose a risk of exposure to hazardous materials. Additionally, hazardous materials used on the project site would be typical of residential and commercial uses and would not result in large quantities of hazardous material which could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment. Therefore, a ***less-than-significant*** impact would occur.

c. The project site is located approximately 0.22-mile west of Mission Elementary School However, because the project would not involve routine disposal or transport of hazardous waste and any hazardous waste would be regulated and used according to the recommendations of the supplier, nearby schools would not be at risk of exposure to hazardous materials. Therefore, the proposed project would have a ***less-than-significant*** impact related to hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

d. The project site is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.[14] Therefore, the project would not create a significant hazard to the public or the environment associated with such, and ***no impact*** would occur.

e. The nearest airport to the site is the Funny Farm private airstrip, located approximately 11 miles southeast of the site in Byron. As such, the project site is not located within two miles of any public airports or private airstrips, and does not fall within an airport land use plan

[14] California Department of Toxic Substances Control. *Hazardous Waste and Substances Site List.* Accessed October 23, 2019. Available at: https://calepa.ca.gov/sitecleanup/corteselist/section-65962-5a/.

area. Therefore, ***no impact*** related to a safety hazard for people residing or working in the project area related to such would occur.

f. In 1996, the City of Antioch approved an Emergency Plan that addresses response to disasters, including, but not limited to, earthquakes, floods, fires, hazardous spills or leaks, major industrial accidents, major transportation accidents, major storms, airplane crashes, environmental response, civil unrest, and national security emergencies. The plan outlines the general authority, organization, and response actions for City of Antioch staff when disasters happen. Implementation of the proposed project would not result in any substantial modifications to the existing roadway system and, thus, would not physically interfere with the Emergency Plan, particularly with identified emergency routes. Furthermore, the proposed project would not include land uses or operations that could impair implementation of the plan. Therefore, would not interfere with an emergency evacuation or response plan, and a ***less-than-significant*** impact would occur.

g. Issues related to wildfire hazards are discussed in Section XX, Wildfire, of this IS/MND. As noted therein, according to the City of Antioch General Plan EIR, the areas of the City most susceptible to wildland fire hazards exist within the southern, unincorporated portions of the General Plan study area.[15] The project site is surrounded by existing development in all directions, and is located within a developed urban area within the City. Thus, the potential for wildland fires to reach the project site would be relatively limited. According to the California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program, the proposed project site is not located within a Very High Fire Hazard Severity Zone.[16] Therefore, the proposed project would not expose people or structures, either directly or indirectly, to the risk of loss, injury or death involving wildland fires, and a ***less-than-significant*** impact would occur.

[15] City of Antioch. *General Plan Update EIR* [page 4.6-9]. July 2003.
[16] California Department of Forestry and Fire Protection. *Contra Costa County, Very High Fire Hazard Severity Zones in LRA*. January 7, 2009.

X. 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 ground water quality?	☐	✖	☐	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	✖	☐
c. Substantially alter the existing drainage pattern of 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?	☐	☐	✖	☐

Discussion

a. The following discussion provides a summary of the proposed project's potential to violate water quality standards/waste discharge requirements or otherwise degrade water quality during construction and operation.

Construction

During the early stages of construction activities, topsoil would be exposed due to grading and excavation of the site. After grading and prior to overlaying the ground surface with impervious surfaces and structures, the potential exists for wind and water erosion to discharge sediment and/or urban pollutants into stormwater runoff, which could adversely affect water quality downstream.

The State Water Resources Control Board (SWRCB) regulates stormwater discharges associated with construction activities where clearing, grading, or excavation results in a land disturbance of one or more acres. The City's National Pollutant Discharge Elimination System (NPDES) permit requires applicants to show proof of coverage under the State's General Construction Permit prior to receipt of any construction permits. The State's General Construction Permit requires a Storm Water Pollution Prevention Plan (SWPPP) to be prepared for the site. A SWPPP describes Best Management Practices (BMPs) to

control or minimize pollutants from entering stormwater and must address both grading/erosion impacts and non-point source pollution impacts of the development project. Because the proposed project would disturb greater than one acre of land, the proposed project would be subject to the requirements of the State's General Construction Permit.

Operation

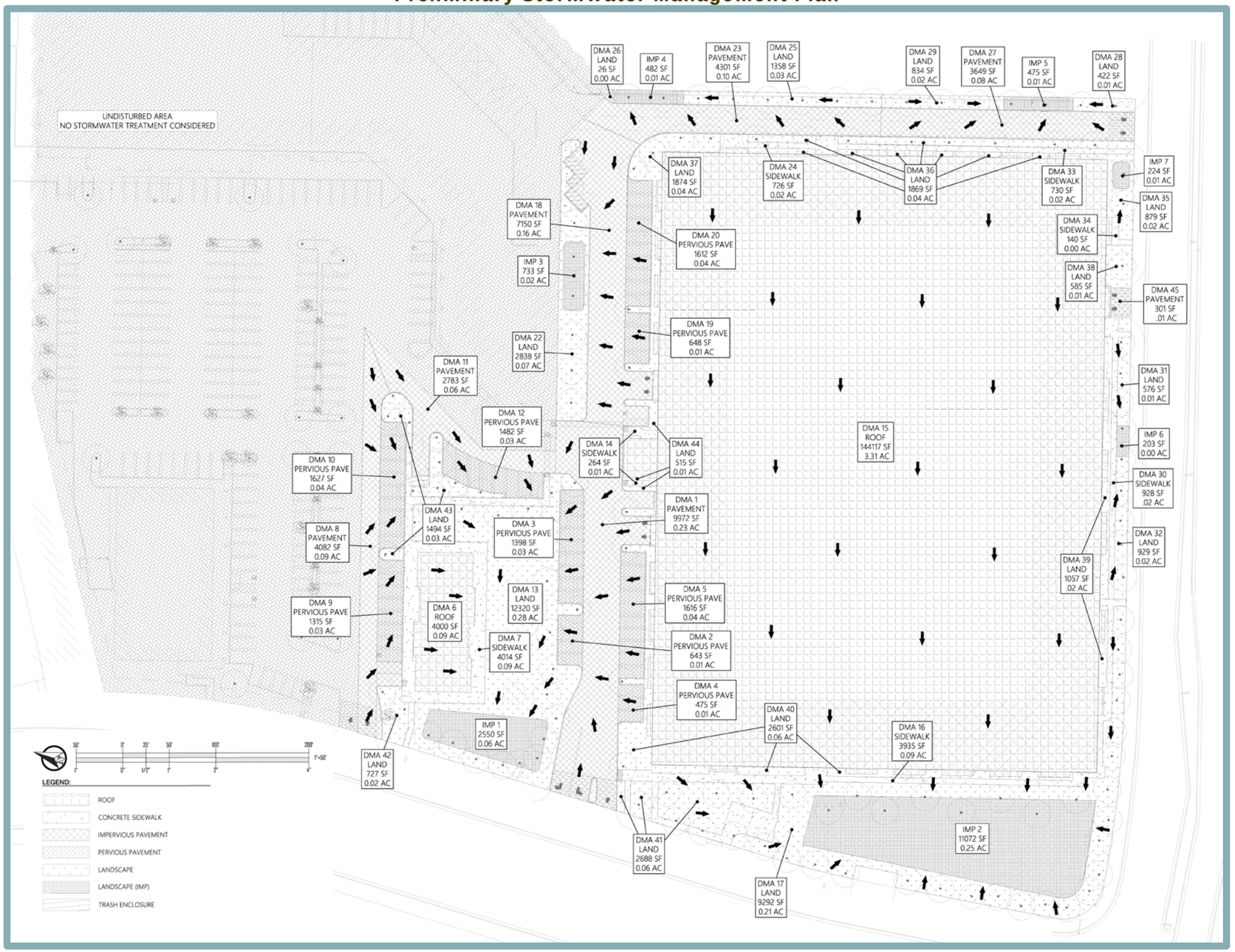
The proposed residential and retail uses would not involve operations typically associated with the generation or discharge of polluted water. Thus, typical operations on the project site would not violate any water quality standards or waste discharge requirements, nor degrade water quality. The project site is currently developed with a commercial shopping center and is mostly covered in impervious surfaces. Development of the project would result in similar or less impervious surface area coverage, and would not alter the current runoff patterns on the project site. Under current and future conditions, the project site could result in the generation of urban runoff, which could contain pollutants if the runoff comes into contact with vehicle fluids on parking surfaces and/or landscape fertilizers and herbicides. However, all municipalities within Contra Costa County (and the County itself) are required to develop more restrictive surface water control standards for new development projects as part of the renewal of the Countywide NPDES permit.

The City of Antioch has adopted the County C.3 Stormwater Standards, which require new development and redevelopment projects that create or alter 10,000 or more square feet of impervious area to contain and treat all stormwater runoff from the project site. Thus, the proposed project would be subject to the requirements of the SWRCB and the Regional Water Quality Control Board (RWQCB), including the C.3 Standards, which are included in the City's NPDES General Permit. Compliance with such requirements would ensure that impacts to water quality standards or waste discharge requirements would not occur during operation of the proposed project.

The Stormwater Control Plan (SWCP) prepared for the proposed project conforms with the most recent Contra Costa Clean Water Program Stormwater C.3 Guidebook and verifies that the proposed project would comply with all City stormwater requirements.[17] In compliance with the C.3 Guidebook, the proposed project would divide the site into 45 drainage management areas (DMAs) (see Figure 10). Runoff within each DMA would be captured by a series of new inlets and flow, by way of new underground storm drain piping, to seven bio-retention facilities within the project site. The bio-retention basins would remove pollutants primarily by filtering runoff slowly through an active layer of soil. Treated runoff would be transported through a new eight-inch storm drain line to an existing 12-inch storm drain line within the parking area north of the proposed buildings. Each bio-retention basin would be sized to meet or exceed the minimum volume requirements necessary to adequately handle all runoff from the proposed impervious surfaces and landscaping.

[17] Ridgeline Engineering. *Stormwater Control Plan: Delta Fair Village*. July 24, 2019.

Figure 10
Preliminary Stormwater Management Plan



Based on the above, the proposed project would comply with the requirements of the SWRCB and the RWQCB, and would meet or exceed C.3 Standards. Therefore, during operation, the project would comply with all relevant water quality standards and waste discharge requirements, and would not degrade water quality.

Conclusion

Based on the SWCP prepared for the proposed project, the project would comply with all applicable regulations during operation, does not involve uses associated with the generation or discharge of polluted water, and would be designed to adequately treat stormwater runoff from the site prior to discharge. However, disturbance of the on-site soils during construction activities could result in a ***potentially significant*** with regard to violation of water quality standards and degradation of water quality should adequate BMPs not be incorporated during construction in accordance with SWRCB regulations.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

X-1. *Prior to issuance of grading permits, the contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP). The developer shall file the Notice of Intent (NOI) and associated fee to the SWRCB. The SWPPP shall serve as the framework for identification, assignment, and implementation of BMPs. The contractor shall implement BMPs to reduce pollutants in stormwater discharges to the maximum extent practicable. The SWPPP shall be submitted to the Director of Public Works/City Engineer for review and approval and shall remain on the project site during all phases of construction. Following implementation of the SWPPP, the contractor shall subsequently demonstrate the SWPPP's effectiveness and provide for necessary and appropriate revisions, modifications, and improvements to reduce pollutants in stormwater discharges to the maximum extent practicable.*

b,e. The City of Antioch currently does not rely on groundwater for water supplies.[18] Therefore, any water demand associated with the proposed project would not result in a depletion of groundwater in the project area. It should be noted that currently, the project site consists primarily of impervious surfaces. The proposed project would result in a similar amount of on-site impervious surfaces. Thus, the proposed project would not impede groundwater recharge at the site. Additionally, the site is not located near a river, creek, or other body of water where recharge typically occurs. Therefore, the proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin, and would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Thus, a ***less-than-significant*** impact would occur.

ci-iii. The project site is currently predominately covered in impervious surfaces. Development of the proposed project would result similar coverage and development with impervious surfaces. Therefore, the proposed project would not likely result in new or worse conditions related to the runoff of stormwater.

[18] City of Antioch. *2015 Urban Water Management Plan* [pg. 6-12]. May 2016.

Furthermore, as discussed above, the project is required to comply with C.3 Standards and is proposed to include appropriate site design measures, source controls, and hydraulically-sized stormwater treatment measures to limit the rate and amount of stormwater runoff leaving the site.

Because the proposed project would not result in increased impervious surfaces, stormwater runoff would not be expected to exceed the current conditions. Thus, the proposed project would not exceed the current capacity of the City's existing stormwater infrastructure.

In order to ensure that the proposed project's stormwater treatment facilities remain adequate, long-term maintenance would be required. Routine maintenance of the facilities is necessary to ensure that infiltration of water is unobstructed, erosion is prevented, and soils are held together by biologically active plant roots. Proper operation and maintenance of the stormwater management facilities would be the sole responsibility of the property owner. The project applicant would be required to prepare and submit, for the City's review, an acceptable Stormwater Facilities Operation and Maintenance Plan prior to completion of construction. With implementation of such a plan, the bio-retention facilities would continue to properly manage runoff long after completion of construction activities.

In conclusion, the proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in erosion, siltation, or flooding on- or off-site, 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. Consequently, the proposed project would result in a ***less-than-significant*** impact.

civ. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map number 06013C0327F, the project site is located within Zone X. FEMA defines Zone X as an area not within a 100-year or 500-year floodplain. The Contra Loma Dam is the closest dam to the project site, located approximately 3.85 miles southwest of the site. The citywide inundation map for the failure of Contra Loma Dam and Dike No. 2 (Figure 4.7-3 of the General Plan EIR) indicates that the project site is located outside of the areas that would be impacted by dam failure. It should be noted that, according to the General Plan EIR, dam failure would be an unlikely event.[19] As a result, the project would not impede or redirect flood flows, and a ***less-than-significant*** impact would result.

d. Tsunamis are defined as sea waves created by undersea fault movement, whereas a seiche is a long-wavelength, large-scale wave action set up in a closed body of water such as a lake or reservoir. The project area is located over 40 miles from the Pacific Ocean and tsunamis typically affect coastlines and areas up to one-quarter mile inland. Due to the project's distance from the coast, the project site would not be exposed to flooding risks associated with tsunamis. Seiches do not pose a risk to the proposed project, as the project site is not located adjacent to a large closed body of water. Furthermore, as noted above, the project site is not located within a flood hazard zone. Based on the above, the proposed project would not pose a risk related to the release of pollutants due to project inundation due to flooding, tsunami, or seiche, and ***no impact*** would occur.

[19] City of Antioch. *General Plan Update EIR* [pg. 4.7-4]. July 2003.

XI. 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 plans, policies, or regulation adopted for the purpose of avoiding or mitigating on environmental effect?	☐	☐	✖	☐

Discussion

a. A project risks dividing an established community if the project would introduce infrastructure or alter land use so as to change the land use conditions in the surrounding community, or isolate an existing land use. The project site is currently developed with commercial uses and the site is surrounded by existing development. The proposed project would not alter the existing general development trends in the area or isolate an existing land use. As such, the proposed project would not physically divide an established community and a ***less-than-significant*** impact would occur.

b. According to the Antioch General Plan, the project site is located within the Somersville Road Corridor Focus Area and is designated Regional Commercial. The site is zoned Regional Commercial (C-3). While the proposed project would require a General Plan Amendment and Rezone, the use would be consistent with other commercial and multi-family residential uses in the vicinity. The Planned Development zoning designation allows for multi-family residential and commercial development so long as the two uses are visually compatible, similarly designed, and provide pedestrian connection between the two. Per the current site plan, the project would achieve the necessary requirements of the zoning designation. In addition, the project would be required to adhere to the applicable parking requirements set forth for Planned Development. The Municipal Code requires that all development within a Planned Development zone obtain a use permit. Furthermore, per Section 9-5.2607 of the Municipal Code, all new development within the City is subject to Design Review approval.

As discussed throughout this IS/MND, the proposed project would essentially serve as an extension of the existing residential and retail development located within the vicinity of the site. The site is currently developed with commercial uses. Thus, development of the proposed project would not alter the existing use of the site in a manner that would disturb biological resources. Additionally, the proposed project would not increase air quality pollutants in excess of existing standards established by BAAQMD. As discussed in Section X, Hydrology and Water Quality, the proposed project would not alter the existing drainage pattern such that the stormwater quality would violate any City standards. Therefore, should the City of Antioch City Council approve the requested Rezone, use permit, and Design Review, the project would not cause a significant environmental impact due to a conflict with any land use plans, policies, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Furthermore, this IS/MND does not identify any significant impacts which cannot be mitigated to less-than-significant levels. As a result, the proposed project would not conflict with applicable land use plans, policies, regulations, or surrounding uses and a ***less-than-significant*** impact would occur.

XII. 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 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?	☐	☐	☐	✖

Discussion

a,b. According to the City of Antioch's General Plan EIR, areas identified in the General Plan for new and existing development do not contain known mineral resources that would be of value to the region or residents of the State.[20] Therefore, ***no impact*** to mineral resources would occur as a result of development of the project.

[20] City of Antioch. *General Plan Update EIR* [pg. 5-9]. July 2003.

XIII. NOISE. *Would the project result in:*	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?	☐	☐	☐	✖

Discussion

a. The following discussion is based on an Environmental Noise Analysis prepared for the proposed project by j.c. brennan & associates, Inc. (see Appendix B). The report analyzed construction and operational noise level increases at the project site and at existing sensitive receptors in comparison to the applicable noise level standards. The following terms are referenced in the sections below:

- Decibel (dB): A unit of sound energy intensity. An A-weighted decibel (dBA) is a decibel corrected for the variation in frequency response to the typical human ear at commonly encountered noise levels. All references to decibels (dB) in this report will be A-weighted unless noted otherwise.
- Day-Night Average Level (L_{dn}): The average sound level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 PM to 7:00 AM) hours.
- Community Noise Equivalent Level (CNEL): The average sound level over a 24-hour day, with a +5 decibel weighing applied to noise occurring during evening (7:00 PM to 10:00 PM) hours and a +10 decibel weighing applied to noise occurring during nighttime (10:00 PM to 7:00 AM) hours.
- Equivalent Sound Level (L_{eq}): Accounts for the total energy (average) observed for an entire hour.
- Maximum sound level (L_{max}): The highest root-mean-square sound level measured over a given period of time.
- Median Noise Level (L_{50}): Represents the noise level which is exceeded 50 percent of the hour. (i.e., half of the hour ambient conditions are higher than the L_{50} and the other half conditions are lower).

Sensitive Noise Receptors

Some land uses are considered more sensitive to noise than others, and, thus, are referred to as sensitive noise receptors. Land uses often associated with sensitive noise receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise. In the vicinity of the project site, the nearest

existing noise sensitive land uses include the multi-family residences located directly to the east of the site, and the church and single-family residences to the south, across Buchanan Road.

Thresholds of Significance

Based on the City's General Plan Noise Element, the proposed project could result in a potentially significant impact if the project would exceed any of the thresholds below:

- An increase in long-term ambient noise by 5 dBA CNEL/L_{dn} or more, where existing noise levels do not exceed the City's 60 dBA CNEL exterior noise level standard; or
- An increase in long-term ambient noise by 3 dBA CNEL/L_{dn} or more, where existing noise levels exceed the City's 60 dBA CNEL exterior noise level.

In addition, Title 24, Part 2, of the California Building Code mandates that interior noise levels attributable to exterior noise sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room. Accordingly, the proposed project could result in a potentially significant impact if the interior noise levels at the proposed residences would exceed 45 dB L_{dn} or CNEL.

Existing Noise Environment

The existing ambient noise environment at the project site is primarily defined by traffic on Delta Fair Boulevard, SR 4, and the Somersville Road eastbound on-ramp. To quantify the existing ambient noise environment at the project site, j.c. brennan & associates, Inc. conducted continuous (24-hour) and short-term noise level measurements at three locations on the project site on July 24 through 25, 2019 (see Figure 11). The noise level measurements were conducted to determine typical background noise levels and for comparison to the anticipated project-related noise levels.

The results of the measurements are summarized in Table 9, presented in terms of day-night average (L_{dn}) noise levels, average hourly (L_{eq}) noise levels, maximum (L_{max}) noise levels, and median value (L_{50}). All noise level values are in dB.

Table 9
Summary of Ambient Noise Monitoring Results

Continuous 24-Hour Noise Measurement Site							
Site	CNEL (dBA)	Average Measured Hourly Noise Levels (dB)					
		Daytime (7 AM to 10 PM)			Nighttime (10 PM to 7 AM)		
		L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}
A	56	51.9	50.7	67.5	49.1	47.5	64.0

Short-term Noise Measurement Sites						
Site	Location	Date	Time	L_{eq}	L_{50}	L_{max}
1	Southeast Portion of Project Site	July 24, 2019	12:30 PM	55.2	54.0	61.9
		July 25, 2019	7:40 PM	58.1	57.0	69.0
2	West Portion of Project Site	July 24, 2019	1:15 PM	58.9	56.5	76.5
		July 25, 2019	7:00 PM	61.1	58.1	76.1

Source: j.c. brennan & associates, Inc., 2019.

Figure 11
Noise Measurement Sites

Source: j.c. brennan & associates, Inc., 2019.

As shown in Table 9, the existing ambient noise levels at the portion of the project site proposed for residential uses do not currently exceed the City's 60 dB L_{dn} exterior noise level standard for residential land uses.

Project Construction Noise

During the demolition and construction of the proposed project, heavy equipment would be used for grading, excavation, paving, and building construction, which would increase ambient noise levels when in use. Noise levels would vary depending on the type of equipment used, how the equipment is operated, and how well the equipment is maintained. In addition, noise exposure at any single point outside the project site would vary depending on the proximity of construction activities to that point. Standard construction equipment, such as graders, backhoes, loaders, and trucks, would be used on-site. In addition, noise would also be generated during the construction phase by increased truck traffic on area roadways, including associated with transport of heavy materials and equipment to and from the construction site. Noise level increases during construction would be of short duration and would likely occur primarily during daytime hours.

The range of maximum noise levels for various types of construction equipment at a distance of 50 feet is depicted in Table 10. The noise values represent maximum noise generation, or full-power operation of the equipment. As one increases the distance between equipment, or increases separation of areas with simultaneous construction activity, dispersion and distance attenuation reduce the effects of combining separate noise sources.

As shown in Table 10, construction activities typically generate noise levels ranging from approximately 76 to 90 dB L_{max} at a distance of 50 feet. The nearest receptors are located approximately 50 feet or further from any areas of the project site that might require grading or paving. Thus, construction noise could exceed the City's 60 dB exterior noise level threshold at the nearest existing receptor. However, construction activities are conditionally exempt from the Noise Ordinance from 7:00 AM to 6:00 PM Monday through Friday, and from 9:00 AM to 5:00 PM on Saturdays. Activities occurring outside of the permitted hours would be considered to result in a significant impact to nearby sensitive receptors.

Table 10
Typical Construction Equipment Noise

Type of Equipment	Maximum Noise Level at 50 feet (dB L_{max})
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic tool	85

Source: Federal Highway Administration, January 2006.

Project Operational Noise

As noted previously, the existing noise environment in the project area is primarily defined by traffic noise. The proposed project would generate noise associated with stationary noise sources, as well as increases in traffic. The primary stationary noise source associated with the proposed project would be the parking garage, which would be located adjacent to the existing residences to the east. However, because the entrance to the garage would be located on the north side of the apartment complex, opposite from the existing residences, the majority of the noise associated with the parking garage use would be shielded. Only openings for ventilation would be located on the eastern side of the parking garage. Accordingly, stationary noise associated with the proposed project would not be considered to result in any significant increases in noise levels in the vicinity. Thus, the discussion below focuses on the proposed project's increase in traffic noise levels in the project area.

Future Traffic Noise Levels at Existing Sensitive Receptors

The Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA Model) was used with traffic data obtained from the TIA prepared for the proposed project to predict traffic noise levels from the surrounding roadways. Truck percentages and vehicle speeds on the local area roadways were estimated from field observations. Traffic noise levels are predicted at sensitive receptors located 75 feet from the centerline along each project area roadway segment. In some locations, sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls.

Table 11 and Table 12 present the project's increase in traffic noise levels under Existing Plus Project and Cumulative Plus Project conditions in terms of CNEL at 75 feet from the centerline of each roadway segment. The tables also list the distances to traffic noise level contours. The actual distances to noise level contours may vary from the distances predicted by the FHWA model due to roadway curvature, roadway grade, shielding from local topography, sound walls or structures. The distances reported are generally considered to be conservative estimates of noise exposure along the project-area roadways.

As shown in Table 11, the existing traffic noise levels in the vicinity of the project site exceed 60 dBA. Accordingly, the proposed project would be considered to result in a significant impact if the traffic generated by the proposed project would increase ambient noise levels by 3 dB CNEL or more. The proposed project would result in a maximum increase in traffic noise levels of 0.4 dB on nearby roadways, which would be below the City of Antioch standard of a 3 dB increase, where existing noise levels exceed the City's 60 dBA CNEL exterior noise level. Similarly, as shown in Table 12, noise levels on roadways in the vicinity of the project site would continue to exceed the City's 60 dBA CNEL exterior noise level standard under Cumulative No Project conditions. Thus, the applicable threshold would be an increase in ambient noise of 3 dBA CNEL or more. The proposed project would result in a maximum increase of 0.3 dB under Cumulative Plus Project conditions, which would not exceed the 3 dB increase threshold established by the City of Antioch.

Table 11
Existing and Existing Plus Project Traffic Noise Levels

Roadway	Segment	Traffic Noise Levels (CNEL, dB)			Distance to Noise Level Contours (feet)					
		Existing No Project	Existing + Project	Δ Change	Existing No Project (CNEL, dB)			Existing + Project (CNEL, dB)		
					70	65	60	70	65	60
Somersville	South of Buchanan	64.8	64.9	+0.1	34	73	158	34	74	158
Somersville	Buchanan to Delta Fair	65.4	65.4	0	37	80	171	37	80	172
Somersville	North of Delta Fair	68.5	68.6	+0.1	60	128	277	61	131	282
Buchanan	West of Sommersville	66.2	66.4	+0.2	42	90	193	43	93	200
Buchanan	Somersville to Delta Fair	62.5	62.7	+0.2	24	51	109	24	53	113
Buchanan	Delta Fair to San Jose	63.3	63.3	0	27	58	124	27	58	125
Buchanan	East of San Jose	63.2	63.2	0	26	57	122	26	57	123
Delta Fair	West of Somersville	64.8	64.9	+0.1	34	73	156	34	74	160
Delta Fair	Somersville to Buchanan	64.9	65.3	+0.4	34	74	159	37	79	170

Source: j.c. brennan & associates, Inc. 2019

Table 12
Cumulative and Cumulative Plus Project Traffic Noise Levels

Roadway	Segment	Traffic Noise Levels (CNEL, dB)			Distance to Noise Level Contours (feet)					
		Cumulative No Project	Cumulative + Project	Δ Change	Cumulative No Project (CNEL, dB)			Cumulative + Project (CNEL, dB)		
					70	65	60	70	65	60
Somersville	South of Buchanan	67.2	67.2	0	49	105	226	49	106	227
Somersville	Buchanan to Delta Fair	67.5	67.6	+0.1	51	111	239	51	111	239
Somersville	North of Delta Fair	70.1	70.2	+0.1	76	164	353	77	166	357
Buchanan	West of Sommersville	67.5	67.5	0	51	110	236	51	110	238
Buchanan	Somersville to Delta Fair	63.6	63.8	+0.2	28	61	130	29	62	134
Buchanan	Delta Fair to San Jose	64.1	64.2	+0.1	30	65	141	31	66	142
Buchanan	East of San Jose	64.1	64.2	+0.1	31	66	142	31	66	143
Delta Fair	West of Somersville	65.8	65.9	+0.1	39	85	183	40	86	186
Delta Fair	Somersville to Buchanan	65.7	66.0	+0.3	39	83	179	41	88	189

Source: j.c. brennan & associates, Inc. 2019

Based on the above, the proposed project would not generate a substantial 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.

Future Traffic Noise Levels at New Sensitive Receptors

Impacts of the environment on a project (as opposed to impacts of a project on the environment) are beyond the scope of required CEQA review. "[T]he purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project." (*Ballona Wetlands Land Trust v. City of Los Angeles,* (2011) 201 Cal.App.4th 455, 473 (*Ballona*).) The California Supreme Court recently held that "CEQA does not generally require an agency to consider the effects of existing environmental conditions on a proposed project's future users or residents. What CEQA does mandate… is an analysis of how a project might exacerbate existing environmental hazards." (*California Building Industry Assn. v. Bay Area Air Quality Management Dist.* (2015) 62 Cal.4th 369, 392; see also *Mission Bay Alliance v. Office of Community Investment & Infrastructure* (2016) 6 Cal.App.5th 160, 197 ["identifying the effects on the project and its users of locating the project in a particular environmental setting is neither consistent with CEQA's legislative purpose nor required by the CEQA statutes"], quoting *Ballona*, *supra*, 201 Cal.App.4th at p. 474.) Therefore, for the purposes of the CEQA analysis, the relevant inquiry is not whether the proposed project's future residents will be exposed to preexisting environmental noise-related hazards, but instead whether project-generated noise will exacerbate the pre-existing conditions. Nonetheless, because the proposed project includes residences, the Environmental Noise Analysis evaluated noise impacts of the surrounding area on the proposed project.

The FHWA traffic noise prediction model was used to predict cumulative traffic noise levels at the proposed residential portion of the project site. Table 13 shows the predicted traffic noise levels at the proposed residential uses adjacent to Buchanan Road and Delta Fair Boulevard. Based upon the table, traffic noise levels would exceed the 60 dBA CNEL standard at the individual patios facing the roadways. However, Noise Objective 11.6.1 of the General Plan applies the noise level standard at the exterior open space for multi-family uses. The center courtyard of the project provides the common outdoor area, and the exterior traffic noise level within that area would be 56.5 dB, which would comply with the exterior noise level standard of 60 dB CNEL.

Typical construction results in an exterior to interior noise level reduction of 25 dB, provided that air conditioning is provided to allow residents to close windows and doors for the appropriate acoustical isolation. All residences are assumed to provide air conditioning for occupants. Because the projected Cumulative Plus Project conditions would result in exterior noise levels less than 70 dBA CNEL, the interior noise levels at the project site would be expected to comply with the interior noise level standard of 45 dBA CNEL.

Therefore, the proposed project would not generate a permanent increase in ambient noise levels in the vicinity of the project site such that the noise levels would be in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Table 13
Cumulative Plus Project Transportation Noise Levels at Proposed Residences

Noise Source	Receptor Description	Approximate Distance to Center of Outdoor Activity Area (feet)[1]	ADT	Predicted Exterior Traffic Noise Levels
Buchanan Road	Building Façade/ Patios	100	11,140	64 dB
Buchanan Road	Courtyard Area	200	11,140	54.5 dB*
Delta Fair Boulevard	Building Façade/ Patios	100	17,120	66 dB
Delta Fair Boulevard	Courtyard Area	200	17,120	56.5 dB

[1] Setback distances are measured in feet from centerlines of the roadways.
* Assumes a minimum of 5 dB shielding from building facades

Source: FHW-RD-77-108 with inputs from Fehr & Peers and j.c. brennan & associates, Inc., 2019.

Conclusion

Based on the above, operation of the proposed project would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of the standards established in the City's General Plan or Noise Ordinance, or applicable standards of other agencies. However, construction noise could exceed the City's 60 dB exterior noise level threshold at the nearest existing receptor. Construction noise is conditionally exempt from 7:00 AM to 6:00 PM, Monday through Friday, and from 9:00 AM to 5:00 PM on weekends and holidays per Section 5-17.04 of the City Zoning Ordinance. In addition, noise associated with construction activities would be temporary in nature, and would be anticipated to occur during normal daytime working hours. Nonetheless, given the proximity of the nearby residential uses to the proposed construction activities, noise levels at nearby noise sensitive receptors would temporarily or periodically increase above existing levels without the project. Thus, a ***potentially significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

XII-1. *During construction activities, the use of heavy construction equipment shall adhere to Sections 5-17.04 and 5-17.05 of the City's Municipal Code. To ensure compliance construction plans shall include, via notation, the following regulations from the City's Municipal Code:*

> *It is unlawful for any person to operate heavy construction equipment or otherwise be involved in construction activities during the hours specified below:*
>
> 1) *On weekdays prior to 7:00 AM and after 6:00 PM.*
> 2) *On weekdays within 300 feet of occupied dwelling space, prior to 8:00 AM and after 5:00 PM.*

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

XII-2. *The project applicant shall ensure that all on-site construction activities occur pursuant to the criteria identified in Policy 11.6.2, Temporary Construction, of the City of Antioch General Plan. Such criteria include, but are not limited to, preparation of a construction-related noise mitigation plan. The construction-related noise mitigation plan shall be submitted to the Planning Manager for the City of Antioch for review and approval prior to issuance of demolition permits for the project. Items included in the plan could contain, but would not be limited to, the following:*

- *All equipment driven by internal combustion engines shall be equipped with mufflers which are in good working condition and appropriate for the equipment;*
- *The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where the technology exists;*
- *At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practical from noise-sensitive receptors;*
- *Unnecessary idling of internal combustion engines shall be prohibited;*
- *Owners and occupants of residential and non-residential properties located with 300 feet of the construction site shall be notified of the construction schedule in writing; and*
- *The construction contractor shall designate a "noise disturbance coordinator" who shall be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and institute reasonable measures as warranted to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.*

b. Vibration, like noise, involves a source, a transmission path, and a receiver. Vibration differs from noise 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 the vibration depends on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which 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). Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of PPV.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 14, which was developed by Caltrans, shows the vibration levels which would normally be required to result in human annoyance or

structural damage. As shown in the table, a continuous vibration level of 0.10 in/sec PPV would likely cause annoyance to sensitive receptors and a vibration level of 0.20 in/sec PPV is the threshold for architectural damage to structures.

Table 14
Effects of Various Vibration Levels on People and Buildings

Vibration Level (Peak Particle Velocity)		Human Reaction	Effect on Buildings
mm/s	in/sec		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk of "architectural" damage to normal dwelling; houses with plastered walls and ceilings
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.

Source: Caltrans, Technical Advisory: TAV-02-01-R9601, 2002.

The primary vibration-generating activities associated with the proposed project would occur during construction, particularly during grading and utility placement. During project construction, heavy equipment would be used for grading, paving, and utility placement, which would generate localized vibration in the immediate vicinity of construction. Typical vibration levels produced by construction equipment are presented in Table 15.

Table 15
Vibration Levels for Various Construction Equipment

Equipment Type	Vibration Level at 50 feet (in/sec PPV)
Large Bulldozer	0.031
Small Bulldozer	0.001
Jackhammer	0.012
Vibratory Roller	0.074
Loaded Truck	0.027
Vibratory Hammer	0.025
Auger/Drill Rigs	0.031

Source: j.c. brennan & associates, Inc., 2019.

The nearest residence is located approximately 50 feet or further from any areas of the project site that might require grading or paving. Based on the vibration levels presented in Table 15, construction-generated vibration levels associated with the proposed project are predicted to be less than the 0.10 in/sec PPV at the nearest sensitive receptors. Therefore, the project would not result in the exposure of persons to or generation of excessive groundborne vibration levels at the project site. Additionally, construction activities would be temporary in nature and would be limited to normal daytime working hours in accordance with Section 5-17.04 of the City Zoning Ordinance. Therefore, a ***less-than-significant*** impact would occur related to exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

c. The nearest airport to the site is the Funny Farm private airstrip, located approximately 11 miles southeast of the site. As such, the project site is not located within two miles of any public airports or private airstrips, and does not fall within an airport land use plan area. Therefore, ***no impact*** related to a safety hazard for people residing or working in the project area related to such would occur.

XIV. POPULATION AND HOUSING. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?	☐	☐	✖	☐
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	✖

Discussion

a. The proposed project would include development of a 210-unit multi-family apartment complex, thereby directly inducing population growth in the project area. Per the City's Housing Element, the City of Antioch had an average household size of 3.15 persons per household.[21] Consequently, the proposed project could provide housing for up to approximately 662 people (210 proposed households X 3.15 persons per household = 661.5 new residents).

The project site is located within an urbanized area within the City of Antioch and is bordered by existing development in all directions, including multi-family residential to the east. As discussed in Section XIX, Utilities and Service Systems, the proposed project includes necessary infrastructure improvements to connect to existing utility systems, and the utility systems that would serve the proposed project have adequate capacity to accommodate the additional demands from the project. The infrastructure improvements would be sized for the project only. In addition, public service providers (e.g., police and fire protection services) would be capable of accommodating the additional demands for service created by the project. Thus, the proposed project would not place an undue burden on public utilities, public recreation facilities, or any other shared public resource, as discussed throughout this IS/MND. Therefore, the proposed project would not result in more intensive population growth beyond what has been previously analyzed for the site, and a ***less than significant*** impact would occur.

b. The project site currently consists of commercial land uses and does not include existing housing or other habitable structures. As such, the proposed project would not displace a substantial number of existing housing or people and would not necessitate the construction of replacement housing elsewhere. Therefore, ***no impact*** would occur.

[21] City of Antioch. *Housing Element* [pg. 2-9]. Adopted April 14, 2015.

XV. PUBLIC SERVICES.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Fire protection?	☐	☐	✖	☐
b. Police protection?	☐	☐	✖	☐
c. Schools?	☐	☐	✖	☐
d. Parks?	☐	☐	✖	☐
e. Other Public Facilities?	☐	☐	✖	☐

Discussion

a. Fire protection services for the project area are provided by the Contra Costa County Fire Protection District (CCCFPD). The CCCFPD is an "all-hazards" organization providing fire suppression, paramedic emergency medical services (EMS), technical rescue, water rescue, and fire prevention/investigation services to more than 600,000 residents across a 304 square mile coverage area. The CCCFPD operates 25 fire stations and responds to approximately 45,000 incidents annually. Four of the fire stations are located within the City of Antioch. Station 83 is located approximately 0.3-mile south of the project site.

Upon completion of the proposed residential and retail development, the CCCFPD would provide fire protection services to the project site. The proposed project would be required to pay the applicable fire protection fees per the City's Master Fee Schedule. In addition, the proposed buildings would be constructed in accordance with the fire protection requirements of the most recent California Fire Code. The CCCFPD and the City's Building Inspection Services Division would review the project building plans to ensure compliance with all code requirements. Therefore, the proposed project would have a ***less-than-significant*** impact related to the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts.

b. The Antioch Police Department (APD) currently provides police protection services to the project site and the surrounding area. The Antioch PD operates out of the police headquarters at 300 L Street, and is currently staffed with 99 sworn and 33 non-sworn employees.[22] According to the Antioch General Plan EIR, population growth has created an increased demand for police-related services, and consequently a need for additional Antioch PD staff. The City of Antioch General Plan establishes a goal for the Antioch PD staffing ratio to be between 1.20 to 1.50 officers per 1,000 residents.[23] Per the City's Housing Element, the City of Antioch had a population of 106,455 in 2014. Thus, the current Antioch PD staffing ratio is approximately 1.0 per 1,000 residents.

The proposed project would increase the demand for police protection services at the site. However, the project applicant would be required to pay Development Impact Fees for police facilities per Section 9-3.50 of the City Municipal Code, and the project site would

[22] City of Antioch. *About APD*. Available at: http:// www.antiochca.gov/police/about-apd/. Accessed December 2019.
[23] City of Antioch. *City of Antioch General Plan EIR [pg. 4.11-1]*. July 2003.

be required to annex into a community facilities district (CFD) for financing police services. 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.

c. School services in the City are provided by the Antioch Unified School District (AUSD). The proposed project would include the development of the project site with a 210-unit multi-family apartment complex and, thus, would increase demand for school facilities and services. Furthermore, the AUSD collects development fees for new residential projects on a per square foot basis. The development fees serve to offset school facility costs associated with serving new students. Proposition 1A/SB 50 prohibits local agencies from using the inadequacy of school facilities as a basis for denying or conditioning approvals of any "[…] legislative or adjudicative act…involving …the planning, use, or development of real property" (Government Code 65996(b)). Satisfaction of the Proposition 1A/SB 50 statutory requirements by a developer is deemed to be "full and complete mitigation."

Based on the above, because the project applicant would be required to pay development fees to the AUSD, the proposed project would result in a ***less-than-significant*** impact regarding an increase in demand for schools.

d,e. Standard 3.5.7.2 in the City of Antioch General Plan sets a standard of five acres of parks and open space per 1,000 residents.[24] The City of Antioch receives land for parks through land dedications or purchases funded through fee collection. In addition, per Section 9-5.706 of the City's Municipal Code, multi-family developments are required to provide 200 sf of private and common usable open space per unit.

The proposed project would include the construction of 210 multi-family residential units, and, thus, would increase the total acreage of parks required to meet the City's performance standard. Based on the proposed unit count, the project would be required to provide a total of 42,000 sf of common usable open space. Based on the proposed site plan, the project would include 52,000 sf of common open space in the courtyard, which would satisfy the City's requirements per Section 9-5.706 of the Municipal Code. Additionally, the proposed project would include a public open lawn in front of the retail building, as well as a private balcony on each unit. Thus, the total private and common open space provided by the project would exceed the necessary requirements. Furthermore, the project would be subject to payment of the City's Development Impact Fees, which include a parks and recreation fee levied on all new multi-family and non-residential development.

Therefore, the proposed project would have a ***less-than-significant*** impact related to the need for new or physically altered parks or other public facilities, the construction of which could cause significant environmental impacts.

[24] City of Antioch. *General Plan* [pg. 3-12]. Updated November 24, 2003.

XVI. 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?	☐	☐	✖	☐

Discussion

a,b. The proposed project would include the development of 210 residential units and retail space, and thus, would likely result in an increase in the use of existing neighborhood and regional parks and/or other recreational facilities. For example, Gentrytown Park is located approximately 0.2-mile from the project site.

However, the proposed project would provide future residents with a landscaped buffer, a community garden, a lawn and patio area with a gazebo, as well as other on-site recreational facilities, including a private pool, fitness center, clubhouse, and playground. In total, approximately 52,000 sf of open space/common area would be provided for residents, as well as a minimum of 60 sf of private patio space per unit. Thus, as discussed previously, the project would exceed the open space requirements established by Section 9-5.706 of the Municipal Code.

Therefore, the increase in population associated with the proposed project would not be expected to result in substantial physical deterioration of any existing neighborhood or regional parks or other recreational facilities, and would not result in adverse physical effects related to the construction or expansion of new facilities. Thus, a ***less-than-significant*** impact would occur.

XVII. TRANSPORTATION. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, taking into account all modes of transportation, including transit, roadway, bicycle, and pedestrian facilities?	☐	✖	☐	☐
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	✖	☐
c. Substantially increase hazards due to a geometric design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	✖	☐
d. Result in inadequate emergency access?	☐	✖	☐	☐

Discussion

a. The following is based on a Traffic Impact Analysis (TIA) prepared for the proposed project by Fehr and Peers.[25] The TIA evaluates the potential traffic impacts of the proposed project in accordance with the standards set forth by the City of Antioch, the Contra Costa Transportation Authority (CCTA) Congestion Management Plan (CMP) and Technical Procedures Manual (TPM), and the East County Action Plan (ECAP).

The TIA includes an analysis of the following study intersections in the project vicinity (see Figure 12):

1. Somersville Road/SR 4 Westbound (WB) Ramps;
2. Somersville Road/SR 4 Eastbound (EB) Ramps;
3. Somersville Road/Delta Fair Boulevard;
4. Somersville Road/Buchanan Road;
5. San Jose Drive/Delta Fair Boulevard;
6. Buchanan Road/Delta Fair Boulevard;
7. Buchanan Road/Lucena Way;
8. Buchanan Road/ San Jose Drive; and
9. Auto Center Drive/Century Boulevard.

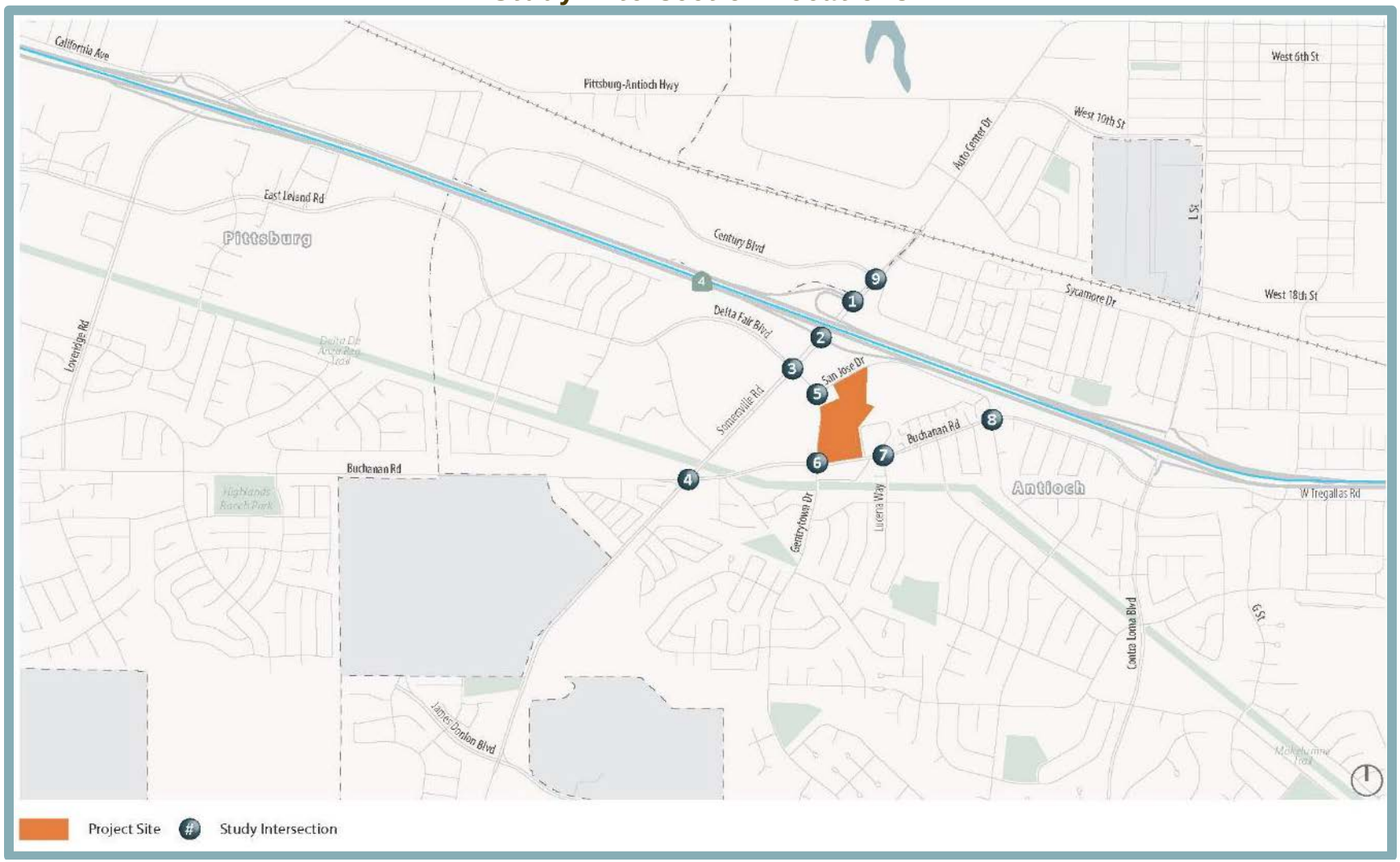
The ECAP defines certain roadways as Routes of Regional Significance. In the project area, SR 4 is a designated Route of Regional Significance, as well as Somersville Road, Auto Center Drive, Delta Fair Boulevard, and the segment of Buchanan Road west of Somersville Road.

The TIA also includes an analysis of the following freeway segments:

1. SR 4, west of Somersville Road;
2. SR 4, between Somersville Road and Contra Loma Boulevard; and
3. SR 4, east of Contra Loma Boulevard.

[25] Fehr and Peers. *Transportation Assessment Delta Fair Village.* December 2019.

Figure 12
Study Intersection Locations



Source: Fehr and Peers, 2019.

The operations of the study intersections were evaluated during the weekday AM (7:00 AM to 9:00 PM) and PM (4:00 PM to 6:00 PM) peak hours under the following scenarios:

- **Existing conditions.** Existing (2019) conditions based on recent traffic counts.
- **Existing with Project conditions.** Existing (2019) conditions with project-related traffic.
- **Near-Term conditions.** Existing (2019) conditions with approved projects within the study area that could be constructed over the next five to ten years.
- **Near-Term with Project conditions.** Near-Term conditions with project-related traffic.
- **Cumulative conditions.** Forecasts for the cumulative scenario are based on traffic growth trends as described in the Antioch General Plan EIR and supplemented by a check of traffic forecasts for the study area in the most recent CCTA Countywide travel demand model. The scenario reflects conditions over the next 20 to 25 years.
- **Cumulative with Project conditions.** Future forecast conditions with project-related traffic.

Method of Analysis

The operations of roadway facilities are described with the term "level of service" (LOS). LOS is a quantitative description of traffic flow from a vehicle driver's perspective based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (free-flow conditions) to LOS F (over capacity conditions). LOS E corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result, and operations are designated LOS F.

Signalized Intersections

The City of Antioch evaluates LOS at signalized intersections based on the 2010 Highway Capacity Manual (HCM) LOS methodology using Synchro software with capacity criteria based on the CCTA TPM. The 2010 HCM method calculates control delay at an intersection based on inputs such as traffic volumes, lane geometry, signal phasing and timing, pedestrian crossing times, and peak hour factors. Control delay is defined as the delay directly associated with the traffic control device (i.e., stop sign or traffic signal) and specifically includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The relationship between LOS and control delay is summarized in Table 16.

Unsignalized Intersections

The TIA analyzed unsignalized (all-way stop controlled and side-street stop controlled) intersections using the 2010 HCM method. The control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in queue. At side-street stop-controlled intersections, the delay is calculated for each stop-controlled movement, the left turn movement from the major street, as well as the intersection average. The intersection average delay and highest movement/approach delay are reported for side-street stop-controlled intersections. The correlation between average control delay and LOS for unsignalized intersections is shown in Table 17.

The determination of whether the installation of a traffic signal is warranted is based on the California Manual on Uniform Traffic Control Devices (CAMUTCD) Peak Hour Signal Warrant (Warrant 3).

Table 16
Signalized Intersection LOS Definitions

LOS	Description	Delay in Seconds
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	<10
B	Operations with low delay occurring with good progression and/or short cycle lengths.	>10 to 20
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	>20 to 35
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high volume to capacity (V/C). Many vehicles stop and individual cycle failures are noticeable.	>35 to 55
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	>55 to 80
F	Operation with delays unacceptable to most drivers occurring due to oversaturation, poor progression, or very long cycle lengths.	> 80

Source: 2010 Highway Capacity Manual.

Table 17
Unsignalized Intersection LOS Definitions

LOS	Description	Delay in Seconds
A	Little or no traffic delay	≤10
B	Short traffic delays	>10 to 15
C	Average traffic delays	>15 to 25
D	Long traffic delays	>25 to 35
E	Very long traffic delays	>35 to 50
F	Extreme traffic delays	>50

Source: 2010 Highway Capacity Manual.

Freeway Segments

Freeway segments were analyzed using the ECAP for Routes of Regional Significance. Transplan, the East County Subregional Committee of the CCTA has established delay index and high occupancy vehicle (HOV) lane utilization as the Multimodal Transportation Service Objectives (MTSO) for all freeways in East County, including SR 4. The delay index is the ratio of travel time on a facility divided by the travel times that occur during non-congested free-flow periods. Should the delay index exceed 2.5 during either the AM or PM peak period, freeway operations would be considered deficient. HOV lane utilization is also identified as an MTSO, and the plan states that the lane should exceed 600 vehicles per lane in the peak direction during the peak hour.

Significance Criteria

The City of Antioch LOS standard for signalized study intersections is mid-level LOS D or better (average delay of 50 seconds or less), except on routes of regional significance, where the standard is high-level LOS D or better (average delay of 55 seconds or less).

The project would have a significant impact on the environment if the project would result in an increase in traffic which is substantial in relation to the traffic load and capacity of

the street system, or if the project would change the condition of an existing street in a manner that would substantially impact access or traffic load and capacity of the street system. Significance criteria are used to determine whether a project impact is considered significant and therefore requires mitigation. The City of Antioch strives to maintain LOS D at signalized intersections. The following thresholds of significance were developed based on the City of Antioch and the ECAP policies, CCTA's *Technical Procedures.* An impact would be considered significant if any of the following conditions would occur:

a. Operations of a study intersection not on a Route of Regional Significance would decline from LOS D or better to LOS E or F, with the addition of project traffic;
b. The project would deteriorate already unacceptable operations at a signalized intersection with the addition of traffic;
c. Operations of an unsignalized study intersection would decline from acceptable to unacceptable with the addition of project traffic, and would warrant the installation of a traffic signal (per CAMUTCD Peak Hour Signal Warrant);
d. Construction traffic from the project would have a significant, though temporary, impact on the environment, or construction would substantially affect traffic flow and circulation, parking, and pedestrian safety;
e. Operations of a study intersection on a Route of Regional Significance would decline from LOS high-D (an average delay of 55 seconds for signalized intersections) or better to LOS E or F, based on the HCM LOS method, with addition of project traffic; or
f. The project would result in or worsen unacceptable conditions on SR 4 by causing the delay index to exceed 2.5 during the AM or PM peak hour or the HOV lane utilization to be less than 600 vehicles per lane in the peak direction in the peak hour.

Proposed Project Trip Generation and Distribution

Trip generation is an estimate of the amount of vehicular traffic the project would add to the surrounding roadway system. A conservative approach was used in the analysis of trip generation by assuming that the 4,000 sf of retail space would be used as a daycare. The project trips were assumed to be from the daycare space, renovated retail uses, and new residential development. In order to get an accurate estimate of net new trips, the trip generation was calculated for the existing shopping center based on turning movement counts at the existing site driveways during AM and PM peak hours, and subtracted from the total trips. The trip generation summary is shown in Table 18.

Information contained in the ITE Trip Generation Manual, 10th edition, and surveys of similar uses were used to estimate pass-by trips for the shopping center. Shopping centers of similar size had pass-by rates from 25 percent to 60 percent; a pass-by rate of 30 percent was assumed to be conservative. In other words, 30 percent of the shopping center traffic entering and exiting the site is already on the surrounding roadway system, not a new vehicle trip to the area. To avoid over-estimation of traffic volumes on the surrounding roadway system, the pass-by trips were subtracted from the trip generation estimates.

Some proportion of trips generated by the proposed shopping center would likely have an origin or destination within the residential portion of the development. However, as specific uses are not proposed, the level of internal trip making is difficult to quantify. A reduction

of 5 percent in trips due to internal trips between land uses was assumed in the trip generation calculations.

Table 18
Trip Generation Summary

Use	Size	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Project Trips – Shopping Center								
Shopping Center	73,535 sf	4,877	117	72	189	208	225	433
Day Care Center	4,000 sf	199	24	22	46	22	25	47
Less Pass-by Trips		-1,460	-27	-30	-57	-62	-68	-130
Less Internal Trips Between Land Uses		-54	-7	-4	-11	-12	-12	-24
Net New		*3,362*	*107*	*60*	*167*	*156*	*170*	*326*
Project Trips – Residential								
Multi-family Housing (mid-rise)	210 dwelling units	1,143	18	53	71	56	35	91
Project Trips – Existing Shopping Center to be Removed								
Shopping Center	161,000 sf	-2,375	-39	-26	-65	-109	-124	-233
Total New Vehicle Trips		**2,168**	**86**	**87**	**173**	**103**	**81**	**184**

Source: Fehr & Peers, 2019.

Project trip distribution refers to the directions of approach and departure that vehicles would take to access and leave the site. Estimates of regional project trip distribution were developed based on existing travel patterns in the area, a select zone analysis using the CCTA travel demand model, and the location of complementary land uses. Separate estimates were developed for the residential and commercial portions of the project, as they are likely to have different distribution patterns. Separate trip distribution estimates were also developed for the Cumulative conditions when the James Donlon Extension is assumed to be complete. Figure 13 shows the Existing and Near-Term project trip distribution and Figure 14 shows the project trip distribution under Cumulative conditions.

Existing with Project Conditions

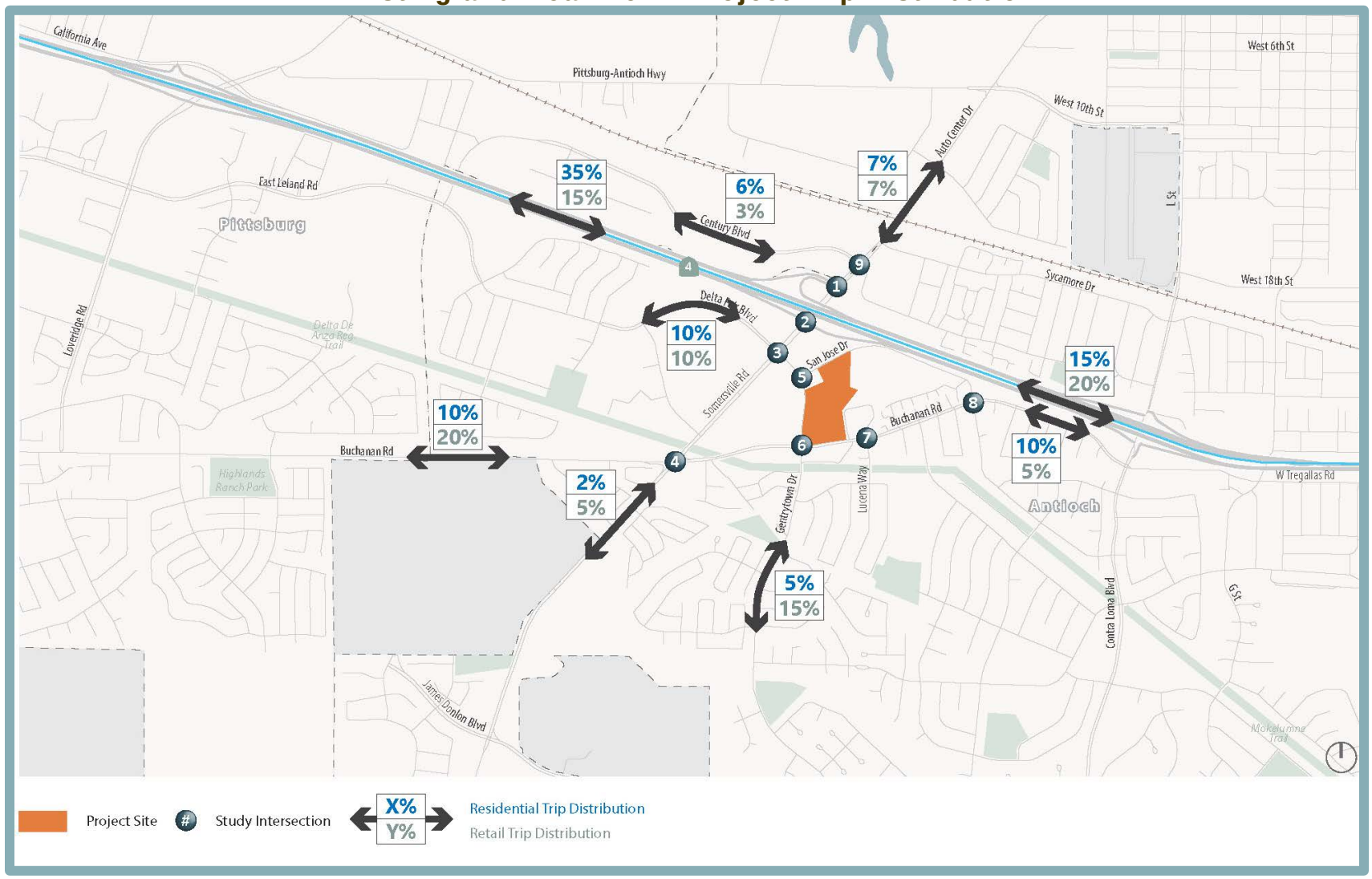
The analysis of traffic under Existing with Project conditions includes transportation facilities in the project area, including the surrounding roadway network, transit, pedestrian, and bicycle facilities. The project's effects on study intersections and freeway segments under Existing with Project conditions are discussed in further detail below.

Intersection Analysis

Existing intersection lane configurations, signal timings, and peak hour turning movement volumes were used to calculate the LOS for the study intersections during each peak hour. Observed peak hour factors were used at all intersections for the existing analysis. Pedestrian and bicycle activity were also factored in to the analysis.

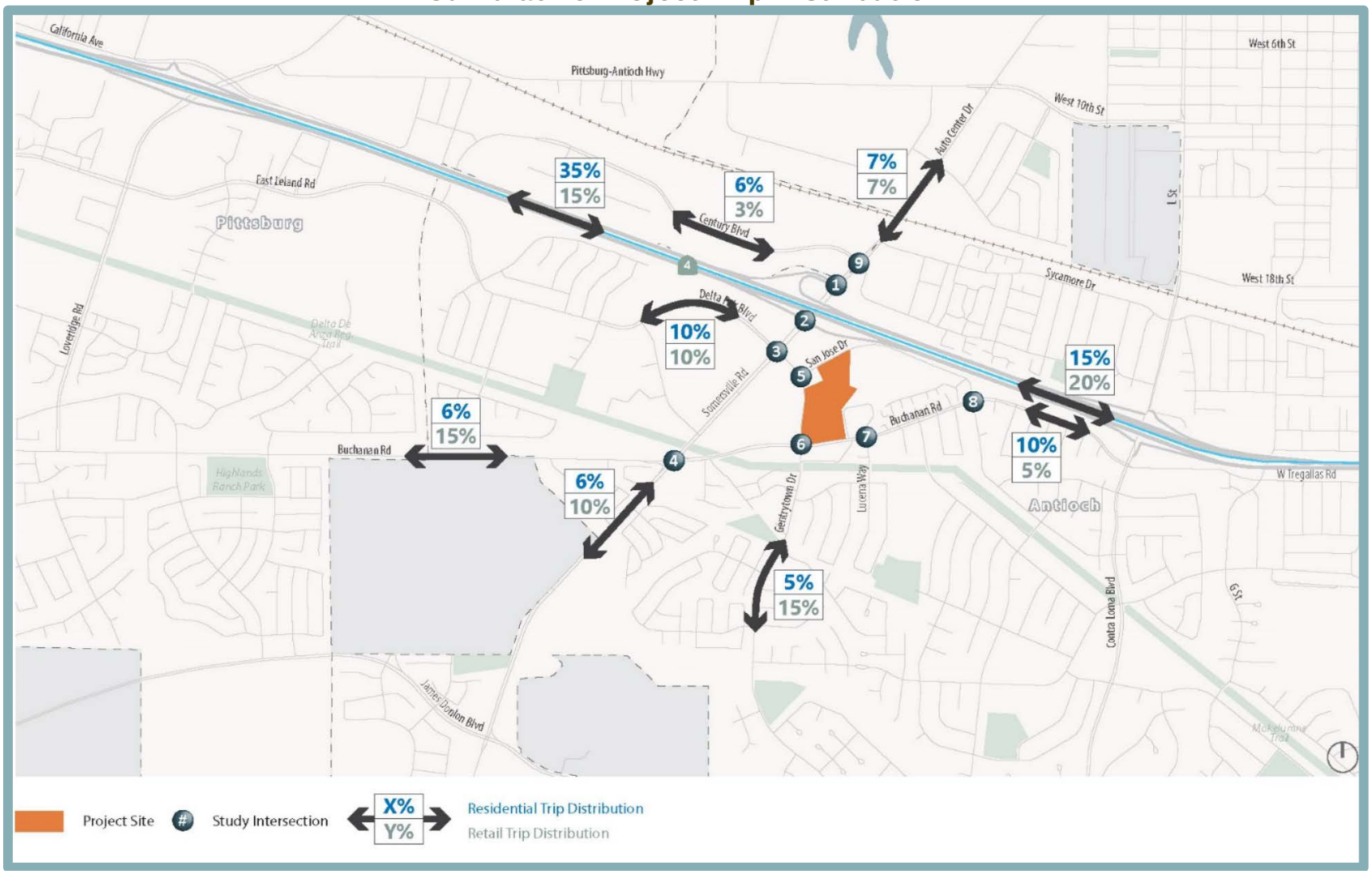
The project traffic volumes were added to the existing traffic volumes to estimate the Existing with Project intersection LOS, using the methods described above. The results are presented in Table 19. As shown in the table, all study intersections currently operate acceptably under the City of Antioch standards. While the addition of project traffic would increase the delay at the signalized and unsignalized study intersections, none of the intersections would be degraded beyond the established LOS standard with the addition of project traffic.

Figure 13
Existing and Near-Term Project Trip Distribution



Source: Fehr & Peers, 2019.

Figure 14
Cumulative Project Trip Distribution



Source: Fehr & Peers, 2019.

Table 19
Existing with Project Conditions Peak Hour Intersection LOS Summary

Intersection	Control[1]	Peak Hour	Existing		Existing with Project	
			Delay[2]	LOS	Delay[2]	LOS
1. Somersville Road/SR 4 WB Ramps	Signal	AM	22.0	C	22.1	C
		PM	23.0	C	23.7	C
2. Somersville Road/SR 4 EB Ramps	Signal	AM	13.7	B	13.7	B
		PM	27.8	C	28.0	C
3. Somersville Road/Delta Fair Boulevard	Signal	AM	50.5	D	50.9	D
		PM	48.6	D	49.1	D
4. Somersville Road/Buchanan Road	Signal	AM	51.0	C	51.7	D
		PM	28.1	C	28.5	C
5. San Jose Drive/Delta Fair Boulevard	SSSC	AM	2.6 (11.4)	A(B)	2.6(11.8)	A(B)
		PM	2.6 (11.3)	A(B)	2.5(11.7)	A(B)
6. Buchanan Road/Delta Fair Boulevard	Signal	AM	21.3	C	22.7	C
		PM	21.2	C	22.2	C
7. Buchanan Road/Lucena Way	TWSC	AM	1.8 (12.5)	A(B)	1.8(16.6)	A(C)
		PM	0.8 (13.4)	A(B)	0.7(13.5)	A(B)
8. Buchanan Road/San Jose Drive	Signal	AM	8.5	A	8.6	A
		PM	9.0	A	9.2	A
9. Century Boulevard/Auto Center Drive	Signal	AM	25.0	C	25.0	C
		PM	35.4	D	35.7	D

Notes:
[1] Existing intersection traffic control type (SSSC = Side-Street Stop-Controlled, TWSC = Two-Way Stop-Controlled)
[2] Whole intersection average delay reported for signalized intersections. Side-street stop-controlled delay presented as Whole Intersection Average Delay (Worst Movement Delay). Delay calculated per HCM 2010 methodologies.

Bold indicates unacceptable operations.

Source: Fehr & Peers, 2019.

Freeway Analysis

Mainline traffic counts under Existing conditions for the SR 4 study corridor and associated on- and off-ramps were obtained from the Caltrans Performance Measurement System. From the data, the peak hour of westbound and eastbound travel was identified during both the AM and PM commute periods. Free flow conditions are represented by a delay index of 1.0. As shown in Table 20, during both the AM and PM peak hour, little congestion is experienced in the peak-direction, such that some segments of SR 4 operate with a delay index of 1.01. While the project would increase traffic volumes on study freeway segments, the delay index would not increase and would remain under the 2.5 threshold.

The amount of vehicle traffic in HOV lanes was also assessed, as presented in Table 21. As shown in the table, the volume of traffic in the HOV lane traveling the commute direction is above the MTSO standard of at least 600 vehicles per hour per lane and would remain above the standard with the addition of project traffic.

Based on the above, the proposed project would not result in or worsen unacceptable conditions on SR 4 under Existing with Project conditions.

Table 20
Freeway Segment Operations Existing with Project – AM and PM Peak Hour Delay Index

Segment	Direction	Peak Hour	Existing Conditions		Existing Plus Project Conditions	
			Volume	Delay Index	Volume	Delay Index
1. SR 4, between Loveridge Rd. and Somersville Rd./Autocenter Rd.	EB[1]	AM	3016	1.00	3026	1.00
		PM	6189	1.01	6196	1.01
	WB[2]	AM	6029	1.01	6053	1.01
		PM	4150	1.00	4168	1.00
2. SR 4, between Somersville Rd./Autocenter Dr. and Contra Loma Blvd./L St.	EB	AM	3178	1.00	3193	1.00
		PM	6293	1.01	6307	1.01
	WB	AM	6329	1.01	6346	1.01
		PM	4479	1.00	4496	1.00
3. SR 4, between Contra Loma Blvd./L St. and Lone Tree Way	EB	AM	3434	1.00	3449	1.00
		PM	6161	1.01	6175	1.01
	WB	AM	5903	1.01	5920	1.01
		PM	4568	1.00	4585	1.00

Note:
[1] AM WB peak hour analysis reflects operation of the HOV lane which carries approximately 14-15 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.
[2] AM EB peak hour analysis reflects operation of the HOV lane which carries approximately 13-16 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.

Source: Fehr and Peers, 2019.

Table 21
Freeway Segment Operations Existing with Project – HOV Lane Volumes

Segment	Direction	Existing Conditions		Existing with Project Conditions	
		AM	PM	AM	PM
1. SR 4, between Loveridge Rd. and Somersville Rd./Autocenter Rd.	EB[2]	--	898	--	899
	WB[1]	862	--	865	--
2. SR 4, between Somersville Rd./Autocenter Dr. and Contra Loma Blvd./L St.	EB	--	913	--	915
	WB	921	--	923	--
3. SR 4, between Contra Loma Blvd./L St. and Lone Tree Way	EB	--	894	--	896
	WB	844	--	846	--

Source: Fehr and Peers, 2019.

Near-Term with Project Conditions

The near-term scenario reflects existing traffic counts plus traffic from approved and pending developments within the study area that are expected to be constructed and occupied in the next five to ten years. Therefore, the near-term scenario represents the likely traffic conditions at the time of project completion. The latest projects list from the City of Antioch Project Pipeline and the City of Pittsburg Current Project Pipeline Map were used to determine approved and pending developments to be incorporated (see Appendix C for further detail). Based on a review of the list, several developments were identified that could generate additional traffic through the project area. Near-term project vehicle trip generation was estimated using trip generation rates and equations for the proposed land uses from ITE's Trip Generation Manual. Traffic generated by approved and pending developments was added to the existing traffic volumes, which were also increased by five percent to account for traffic growth from projects outside the immediate project area, to provide the basis for the Near-Term without Project analysis.

Below is an analysis of the operations of study intersections and freeway segments under the Near-Term with Project conditions.

Intersection Analysis

Near-Term conditions with and without the proposed project were evaluated for the study intersections. The results are shown in Table 22. As shown in the table, the Somersville Road/Buchanan Road intersection (Intersection #4) is projected to operate at LOS F during the AM peak hour and LOS E during the PM peak hour in the Near-Term and Near-Term with Project condition. With the addition of project traffic, the intersection delay would increase by 1.3 seconds in the AM peak hour and 1.5 seconds in the PM peak hour. Therefore, the proposed project would deteriorate already unacceptable operations at the Somersville Road/Buchanan Road intersection in the AM and PM peak hour with the addition of project traffic.

Table 22
Near-Term with Project Conditions Peak Hour Intersection LOS Summary

Intersection	Control[1]	Peak Hour	Near-Term		Near-Term with Project	
			Delay[2]	LOS	Delay[2]	LOS
1. Somersville Road/SR 4 WB Ramps	Signal	AM PM	25.1 37.6	C C	25.6 39.9	C D
2. Somersville Road/SR 4 EB Ramps	Signal	AM PM	15.3 30.2	B C	15.6 30.5	B C
3. Somersville Road/Delta Fair Boulevard	Signal	AM PM	51.0 50.8	D D	51.9 51.7	D D
4. Somersville Road/Buchanan Road	**Signal**	**AM PM**	**136.6 67.8**	**F E**	**137.9 69.3**	**F E**
5. San Jose Drive/Delta Fair Boulevard	SSSC	AM PM	3.1(13.0) 2.5(11.5)	A(B) A(B)	3.1(13.2) 3.0(13.6)	A(B) A(B)
6. Buchanan Road/Delta Fair Boulevard	Signal	AM PM	25.2 23.8	C C	28.2 25.0	C C

Continued on Next Page

7. Buchanan Road/Lucena Way	TWSC	AM PM	2.3(18.8) 1.2(16.5)	A(C) A(C)	2.3(18.9) 1.2(16.6)	A(C) A(C)
8. Buchanan Road/San Jose Drive	Signal	AM PM	9.1 9.6	A A	9.4 9.7	A A
9. Century Boulevard/Auto Center Drive	Signal	AM PM	25.1 36.6	C D	25.9 37.2	C D

Notes:
[1] Existing intersection traffic control type (SSSC = Side-Street Stop-Controlled, TWSC = Two-Way Stop-Controlled)
[2] Whole intersection average delay reported for signalized intersections. Side-street stop-controlled delay presented as Whole Intersection Average Delay (Worst Movement Delay). Delay calculated per HCM 2010 methodologies.

Bold indicates unacceptable operations.

Source: Fehr & Peers, 2019.

Freeway Analysis

Near-Term freeway forecasts were developed based on the same method as intersection forecasts, both with and without the proposed project. Freeway improvements were not included in the evaluation of near-term freeway operations. The Near-Term and Near-Term with Project conditions are listed in Table 23 for the AM and PM peak hours, based on the estimates of near-term traffic volumes plus the estimate of project traffic. While the project would increase traffic volumes on study freeways in the area, the delay index would not exceed 2.5. Thus, the proposed project would not conflict with the City's standard for freeway segment operations.

In addition, as shown in Table 24, similar to the Near-Term conditions, the volume of traffic on the HOV lane traveling in the commute direction (WB during the AM, EB during the PM) would remain above the desired MTSO standard of at least 600 vehicles per hour per lane under Near-Term with Project conditions.

Based on the above, the proposed project would not be considered to result in or worsen unacceptable conditions on SR 4 under Near-Term with Project conditions.

Cumulative with Project Conditions

To assess future growth with planned development in the City of Antioch, several sources of data were reviewed, including the Contra Costa County travel demand model, and the traffic growth trends in the Antioch General Plan EIR. Traffic forecasts within the immediate study area were reviewed to ensure that known developments were adequately reflected in the forecasts, including the Tuscany Meadows Project, located on the south side of Buchanan Road, just west of Somersville Road, in the City of Pittsburg. An important planned roadway improvement in the area is the proposed James Donlon Boulevard extension. The extension will start at Somersville Road and extend to Kirker Pass Road. The proposed roadway would merge from a four-lane road to a two-lane road and would be designed for vehicles traveling up to 55 miles per hour.

Below is an analysis of Cumulative with Project conditions at study intersections and freeway segments.

Table 23
Freeway Segment Operations Near-Term with Project – AM and PM Peak Hour Delay Index

Segment	Direction	Peak Hour	Near-Term Conditions		Near-Term with Project Conditions	
			Volume	Delay Index	Volume	Delay Index
1. SR 4, between Loveridge Rd. and Somersville Rd./Autocenter Rd.	EB[1]	AM	3230	1.00	3240	1.00
		PM	6600	1.01	6607	1.00
	WB[2]	AM	6490	1.02	6514	1.02
		PM	4470	1.00	4488	1.00
2. SR 4, between Somersville Rd./Autocenter Dr. and Contra Loma Blvd./L St.	EB	AM	3490	1.00	3505	1.00
		PM	6740	1.01	6754	1.16
	WB	AM	6770	1.02	6787	1.02
		PM	4920	1.00	4937	1.00
3. SR 4, between Contra Loma Blvd./L St. and Lone Tree Way	EB	AM	3760	1.00	6775	1.00
		PM	6600	1.01	6614	1.07
	WB	AM	6320	1.01	6337	1.01
		PM	5010	1.00	5027	1.00

Notes:
[1] AM EB peak hour analysis reflects operation of the HOV lane which carries approximately 13-16 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.
[2] AM WB peak hour analysis reflects operation of the HOV lane which carries approximately 14-15 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.

Source: Fehr and Peers, 2019.

Table 24
Freeway Segment Operations Near-Term with Project – HOV Lane Volumes

Segment	Direction	Near-Term Conditions		Near-Term with Project Conditions	
		AM	PM	AM	PM
1. SR 4, between Loveridge Rd. and Somersville Rd./Autocenter Rd.	EB[2]	--	960	--	961
	WB[1]	930	--	933	--
2. SR 4, between Somersville Rd./Autocenter Dr. and Contra Loma Blvd./L St.	EB	--	980	--	982
	WB	990	--	992	--
3. SR 4, between Contra Loma Blvd./L St. and Lone Tree Way	EB	--	960	--	962
	WB	900	--	902	--

Source: Fehr and Peers, 2019.

Intersection Analysis

Cumulative conditions with and without the project were evaluated. The analysis results are presented in Table 25. As shown in the table, the following three intersections are projected to operate at deficient levels under Cumulative conditions prior to the addition of project traffic:

- Somersville Road/SR 4 WB Ramps – LOS E in the PM peak hour;
- Somersville Road/Delta Fair Boulevard – LOS E in the AM and PM peak hour;
- Somersville Road/Buchanan Road – LOS F in the AM peak hour and LOS E in the PM peak hour.

The addition of project traffic would increase delay by up to three seconds at the above intersections, which would be considered a significant impact.

Table 25
Cumulative with Project Conditions Peak Hour Intersection LOS Summary

Intersection	Control[1]	Peak Hour	Cumulative		Cumulative with Project	
			Delay[2]	LOS	Delay[2]	LOS
1. Somersville Road/SR 4 WB Ramps	Signal	AM	27.1	C	29.6	C
		PM	**56.4**	**E**	**59.4**	**E**
2. Somersville Road/SR 4 EB Ramps	Signal	AM	17.2	B	17.4	B
		PM	39.7	D	40.6	D
3. Somersville Road/Delta Fair Boulevard	Signal	**AM**	**58.0**	**E**	**59.3**	**E**
		PM	**65.8**	**E**	**68.3**	**E**
4. Somersville Road/Buchanan Road	Signal	**AM**	**87.4**	**F**	**88.3**	**F**
		PM	**55.5**	**E**	**56.5**	**E**
5. San Jose Drive/Delta Fair Boulevard	SSSC	AM	4.4(16.0)	A(C)	4.5(17.4)	A(C)
		PM	3.0(13.3)	A(B)	3.0(14.0)	A(B)
6. Buchanan Road/Delta Fair Boulevard	Signal	AM	28.4	C	30.8	C
		PM	27.5	C	28.2	C
7. Buchanan Road/Lucena Way	TWSC	AM	2.2(18.1)	A(C)	2.2(18.2)	A(C)
		PM	1.4(17.3)	A(C)	1.4(17.5)	A(C)
8. Buchanan Road/San Jose Drive	Signal	AM	10.4	B	10.4	B
		PM	10.2	B	10.2	B
9. Century Boulevard/Auto Center Drive	Signal	AM	29.2	C	29.2	C
		PM	41.9	D	42.2	D

Notes:
[1] Existing intersection traffic control type (SSSC = Side-Street Stop-Controlled, TWSC = Two-Way Stop-Controlled)
[2] Whole intersection average delay reported for signalized intersections. Side-street stop-controlled delay presented as Whole Intersection Average Delay (Worst Movement Delay). Delay calculated per HCM 2010 methodologies.

Bold indicates unacceptable operations.

Source: Fehr & Peers, 2019.

Freeway Analysis

Cumulative freeway forecasts were developed based on the same method used to develop the cumulative intersection forecasts, both without and with the proposed project. Operations were evaluated using the same methods described above. The results of the

Cumulative and Cumulative with Project conditions freeway segment delay index analysis are presented in Table 26, based on the estimates of cumulative traffic volumes plus the estimate of project traffic. As shown in the table, under the Cumulative with Project condition, the delay index of SR 4 would increase on some segments during the AM and PM peak hour, but not beyond the MTSO standard of 2.5.

In addition, as shown in Table 27, the volume of traffic in the HOV lane would remain above the desired MTSO standard of at least 600 vehicles per hour per lane during the AM and PM peak hour under Cumulative and Cumulative with Project conditions. The proposed project is expected to add traffic to the HOV lane segments.

Based on the above, the proposed project would not result in or worsen unacceptable conditions on SR 4 under Cumulative with Project conditions.

Transit Service

The Eastern Contra Costa Transit Authority (Tri Delta Transit) provides transit service in eastern Contra Costa County, serving the communities of Brentwood, Antioch, Oakley, Concord, Discovery Bay, Bay Point, and Pittsburg. Thirteen routes operate on weekdays, with four routes operating on weekends. Three routes operate in the vicinity of the project site, with Routes 380, 390, and 394 stopping at Delta Fair Boulevard and Buchanan Road, adjacent to the project site. In addition to regular transit service to the area, dial-a-ride door-to-door service within Eastern Contra Costa County is provided by Tri Delta Transit for disabled people of all ages and senior citizens.

Bay Area Rapid Transit (BART) provides fixed rail transit to eastern Contra Costa County. Currently, the terminus station is located in Antioch, approximately four miles east of the project site. Weekday service is provided approximately every 15 minutes and weekend service occurs approximately every 20 minutes. Antioch-SFO/Millbrae Line connects to key regional employment centers, including Concord, Pleasant Hill, Walnut Creek, Oakland, and San Francisco. Transfers to other lines can be made in Oakland.

Because the proposed project includes sidewalk connections to existing transit stops on the east and west side of Delta Fair Boulevard, and on the north and south side of Buchanan Road at the Delta Fair Boulevard intersection, the project would provide a continuous pedestrian path from the site to area transit stops. However, prior to finalization of the site plans, consultation with Tri Delta Transit would be required to ensure the existing transit amenities are sufficient for the project site. Thus, without consultation with Tri Delta Transit, the project could conflict with an existing program, plan, ordinance, or policy addressing transit.

Pedestrian and Bicycle Facilities

Pedestrian facilities in the area include sidewalks, crosswalks, pedestrian signals, and multi-use trails. At the signalized intersections in the area, crosswalks and pedestrian push-button actuated signals are provided. A 10-foot sidewalk surrounds the project site and crosswalks are also provided at unsignalized intersections.

Table 26
Freeway Segment Operations Cumulative with Project – AM and PM Peak Hour Delay Index

Segment	Direction	Peak Hour	Cumulative Conditions		Cumulative with Project Conditions	
			Volume	Delay Index	Volume	Delay Index
1. SR 4, between Loveridge Rd. and Somersville Rd./Autocenter Rd.	EB[1]	AM	4300	1.00	4310	1.00
		PM	8800	1.11	8807	1.11
	WB[2]	AM	9200	1.27	9224	1.28
		PM	5500	1.00	5519	1.00
2. SR 4, between Somersville Rd./Autocenter Dr. and Contra Loma Blvd./L St.	EB	AM	4500	1.00	4516	1.00
		PM	8900	1.12	8914	1.12
	WB	AM	9700	1.40	9718	1.41
		PM	5900	1.00	5917	1.00
3. SR 4, between Contra Loma Blvd./L St. and Lone Tree Way	EB	AM	4900	1.00	4916	1.23
		PM	8700	1.10	8714	1.10
	WB	AM	9000	1.22	9018	1.23
		PM	6000	1.01	6017	1.01

Notes:
[1] AM EB peak hour analysis reflects operation of the HOV lane which carries approximately 13-16 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.
[2] AM WB peak hour analysis reflects operation of the HOV lane which carries approximately 14-15 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.

Source: Fehr and Peers, 2019.

Table 27
Freeway Segment Operations Cumulative with Project – HOV Lane Volumes

Segment	Direction	Cumulative Conditions		Cumulative with Project Conditions	
		AM	PM	AM	PM
1. SR 4, between Loveridge Rd. and Somersville Rd./Autocenter Rd.	EB[2]	--	1300	--	1301
	WB[1]	1300	--	1303	--
2. SR 4, between Somersville Rd./Autocenter Dr. and Contra Loma Blvd./L St.	EB	--	1300	--	1302
	WB	1400	--	1403	--
3. SR 4, between Contra Loma Blvd./L St. and Lone Tree Way	EB	--	1300	--	1302
	WB	1300	--	1303	--

Source: Fehr and Peers, 2019.

Bicycle facilities in the City include the following:

- Bike paths (Class I) – Bike paths provide a completely separate right-of-way and are designated for the exclusive use of people riding bicycles and walking with minimal cross-flow traffic. Such paths can be well situated along creeks, canals, and rail lines. Class I Bikeways can also offer opportunities not provided by the road system by serving as both recreational areas and/or desirable commuter routes.
- Bike lanes (Class II) – Bike lanes provide designated street space for bicyclists, typically adjacent to the outer vehicle travel lanes. Bike lanes include special lane markings, pavement legends, and signage. Bike lanes may be enhanced with painted buffers between vehicle lanes and/or parking, and green paint at conflict zones (such as driveways or intersections).
- Bike routes (Class III) – Bike routes provide enhanced mixed-traffic conditions for bicyclists through signage, striping, and/or traffic calming treatments, and to provide continuity to a bikeway network. Bike routes are typically designated along gaps between bike trails or bike lanes, or along low-volume, low-speed streets. Bicycle boulevards provide further enhancements to bike routes to encourage slow speeds and discourage non-local vehicle traffic via traffic diverters, chicanes, traffic circles, and/or speed tables. Bicycle boulevards can also feature special wayfinding signage to nearby destinations or other bikeways.

Currently, Buchanan Road provides a Class II bike lane on the southern side of the street that travels just east of Delta Fair Boulevard to Contra Loma Road. Additionally, a Class II bike lane is provided along the northern side of Buchanan Road, and travels from just west of San Jose Drive to just east of Delta Fair Boulevard. Pedestrian trails and bike paths are also located throughout the project area, including the Delta De Anza Regional Trail and Mokelumne Trail.

The proposed site plan includes connection to the existing 10-foot sidewalk currently surrounding the project frontage and would not alter the existing public sidewalk; however, the connecting internal sidewalks may not be designed to the proper width according to the City of Antioch commercial design guidelines. Additionally, while 110 bicycle parking spaces would be provided in the private garage, the proposed site plan does not currently include bicycle parking at the retail area. Thus, the proposed project could conflict with a plan, program, ordinance, or policy addressing pedestrian and bicycle facilities.

Conclusion

Based on the above, the proposed project would not cause any of the study intersections to exceed applicable City or CCTA minimum LOS standards under Existing with Project conditions. However, under Near-Term with Project conditions, the addition of project traffic would worsen unacceptable operations at the Somersville Road/Buchanan Road intersection. Additionally, under Cumulative with Project conditions, the addition of traffic from the proposed project would worsen unacceptable operations at the Somersville Road/SR 4 WB Ramps, Somersville Road/Delta Fair Boulevard, and Somersville Road/Buchanan Road intersections.

Additionally, while the project would provide access to alternative transportation, proper design and sufficient capacity would be required prior to approval of the project. Therefore, the proposed project could conflict with a program, plan, ordinance or policy establishing

measures of effectiveness for the performance of the circulation system, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)

As shown in Table 28 and Table 29, with implementation of Mitigation Measure XVII-1, the Somersville Road/Buchanan Road intersection would operate within acceptable City of Antioch standards under Near-Term with Project conditions, as well as and Cumulative with Project conditions, respectively. Table 29 also presents the mitigated LOS conditions at the Somersville Road/SR 4 WB Ramps and Somersville Road/Delta Fair Boulevard intersections with implementation of Mitigation Measures XVII-2 and XVII-3, respectively. As shown in the tables, implementation of the following mitigation measures would reduce the potential impact to a *less-than-significant* level.

Table 28
Near-Term with Project Conditions Peak Hour Intersection LOS with Mitigation

Intersection	Peak Hour	Near-Term without Project		Near-Term with Project		Near-Term with Project with Mitigation	
		Delay	LOS	Delay	LOS	Delay	LOS
Somersville Road/ Buchanan Road	AM	**136.6**	**F**	**137.9**	**F**	52.5	D
	PM	**67.8**	**E**	**69.3**	**E**	50.5	D

Source: Fehr and Peers, 2019.

Table 29
Cumulative with Project Conditions Peak Hour Intersection LOS with Mitigation

Intersection	Peak Hour	Cumulative without Project		Cumulative with Project		Cumulative with Project with Mitigation	
		Delay	LOS	Delay	LOS	Delay	LOS
Somersville Road/SR 4 WB Ramps	AM	27.1	C	27.1	C	22.4	C
	PM	**56.4**	**E**	**59.4**	**E**	27.8	C
Somersville Road/Delta Fair Boulevard	AM	**58.0**	**E**	**59.3**	**E**	54.3	D
	PM	**65.8**	**E**	**68.3**	**E**	**64.4**	**E**
Somersville Road/ Buchanan Road	AM	**87.4**	**F**	**88.3**	**F**	54.8	D
	PM	**55.5**	**E**	**56.5**	**E**	43.4	D

Source: Fehr and Peers, 2019.

XVII-1. *Prior to issuance of building permits, the applicant shall initiate construction, and, prior to occupancy of the first unit, the applicant shall complete construction of the dual northbound left turn lanes on Somersville Road onto Buchanan Road and conversion of an eastbound through lane to a through-left turn lane to the satisfaction of the City Engineer. A portion of the improvements shall be eligible for reimbursement.*

XVII-2. *Prior to occupancy of the first unit, the applicant shall provide funding for the City to modify the Somersville Road/Auto Center Drive at SR 4 Westbound Ramps traffic signal to install an eastbound right-turn overlap phase and retime the signal to the satisfaction of the City Engineer.*

XVII-3. *The project applicant shall restripe the eastbound approach to the Somersville Road/Delta Fair Boulevard intersection to convert the eastbound left-through shared lane to an exclusive eastbound left lane. Prior to occupancy of the first unit, the applicant shall complete the improvements to the satisfaction of the City Engineer.*

XVII-4. *Prior to issuance of building permits, the site plans shall show internal sidewalks will have a minimum width of six feet at all points, including where signs, poles, fire hydrants, etc. are placed in the walkway per City of Antioch commercial design guidelines. The site plans shall be submitted to the Planning Manager for the City of Antioch for review and approval by the City Engineer.*

XVII-5. *Prior to issuance of a building permit, the site plans shall indicate that at least 19 bicycle parking spaces will be provided for the retail portion of the project site. The site plans shall be submitted to the Planning Manager for the City of Antioch for review and approval by the City Engineer.*

XVII-6. *Prior to issuance of a building permit, the applicant shall consult with Tri Delta transit to determine if additional transit amenities shall be provided through the project site or project frontages. Proof of consultation shall be submitted and recommended amenities should be constructed prior to occupancy of the first unit to the satisfaction of the Planning Manager for the City of Antioch and City Engineer.*

b. Section 15064.3 of the CEQA Guidelines provides specific considerations for evaluating a project's transportation impacts. Per Section 15064.3, analysis of vehicle miles traveled (VMT) attributable to a project is the most appropriate measure of transportation impacts. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in Section 15064.3(b)(2) regarding roadway capacity, a project's effect on automobile delay does not constitute a significant environmental impact under CEQA. It should be noted that currently, the provisions of Section 15064.3 apply only prospectively; determination of impacts based on VMT is not required Statewide until July 1, 2020. Neither the City of Antioch nor the CCTA has established any standards or thresholds for VMT. Because standards are not in effect, a preliminary assessment of the VMT generated by the proposed project was prepared for informational and disclosure purposes only.

Per Section 15064.3(b)(3), a lead agency may analyze a project's VMT qualitatively based on the availability of transit, proximity to destinations, etc. Generally, projects within one half mile of either an existing transit stop or a stop along an existing high-quality transit corridor would be presumed to result in a less-than-significant transportation impact. Local-serving retail may be less than significant if the project is less than 50,000 sf. Thus, the assessment focuses on the residential component of the project.

The TIA analyzed VMT using the CCTA travel demand model, as well as information from the MTC. The existing home-based VMT in the City of Antioch is 17.0, while the average trip length in Contra Costa County is 18.0, and the average trip length in the Bay Area is 15.3. Home-based trips in Antioch and Contra Costa County are slightly higher than the Bay Area average, while work-based trips to jobs in Antioch are much lower than regional

averages, indicating a jobs-housing imbalance. The difference indicates that more people commute from Antioch to other employment centers, while jobs in Antioch tend to be filled by more local residents.

According to the CCTA analysis, the proposed project is anticipated to generate approximately 16 vehicle miles of travel per day per person for the residential portion of the project, including all trips generated by each person that is projected to live in the development that either start or end at home. The anticipated level of vehicle travel is lower than the City of Antioch average.

All trips generated by the retail portion of the project were also tracked through the transportation system using the CCTA model analysis. The average trip length of the retail portion of the project was six miles, which is shorter than the average trip length of the residential portion of the project. The findings are consistent with the Metropolitan Transportation Commission (MTC) data, which indicates a jobs-housing imbalance within Antioch. The daily project VMT is 21,749.

Results of the VMT analysis indicate that the proposed project would contribute to an increase in VMT on a per-capita basis, as the project would add a housing development that would require residents to travel longer distances than the regional average to meet their daily needs. However, the average trip length of the residential and retail portions of the proposed project have lower average trip lengths than the City of Antioch average.

Furthermore, as noted above, the proposed project is located within walking distance of three major transit routes and would have access to a pedestrian sidewalk system, as well as bicycle facilities, at the project site frontage. Thus, the proposed project would provide access to alternative transportation.

Based on the above, the proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), and a ***less-than-significant*** impact would occur.

c. Access to the project site is proposed by two driveways on San Jose Drive, two driveways on Delta Fair Boulevard, two driveways on Buchanan Road, and one driveway along the frontage road that borders the apartment complex to the east. All driveways are proposed to have stop sign control on the approaches. Sight access was evaluated to determine the adequacy of the site's driveways with regard to traffic volume, delays, vehicle queues, geometric design, and corner sight distance.

   Field observations of sight distances at the existing and proposed entrances indicate sight distances in excess of 250 feet, which would be the required stopping sight distance for the current design. Thus, adequate sight distance is provided at all new and existing driveway locations and a ***less-than-significant*** impact would occur related to substantially increasing hazards due to a geometric design feature or incompatible uses.

d. Emergency vehicle access is determined by whether a project has sufficient access for emergency vehicles, including number of access points, width of access points, and width of internal roadways. The project site plan shows a total of five access points for emergency vehicles along Buchanan Road, Delta Fair Boulevard, and San Jose Drive. With the exception of the exit-only driveway on Buchanan Road and the driveway along the frontage road separating the building from the existing apartment complex to the east, all project driveways would serve as access points for emergency vehicles. The 20- to 26-

foot internal roadways throughout the site would meet the regulations for emergency vehicle widths. However, the design of the driveways has not yet been determined and, thus, the widths of the entry points could be inadequate for emergency vehicles.

Based on the above, the proposed project could result in inadequate emergency access and a ***potentially significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

XVII-7 *Prior to issuance of grading permits, the project site plans shall indicate that all driveways on the site shall be designed with an adequate width for access by emergency vehicles. In addition, the plans shall indicate that signs shall be posted outside of the garage to make clear that the garage use is for "residents only." The final site plan shall be reviewed and approved by the Fire Marshall and submitted to the Planning Manager for the City of Antioch.*

XVIII. TRIBAL CULTURAL RESOURCES. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).	☐	✖	☐	☐
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	✖	☐	☐

Discussion

a,b. As discussed in Section V, Cultural Resources, of this IS/MND, the proposed project site does not contain any existing permanent structures or any other known resources 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), and does not contain known resources that could be considered historic pursuant to the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. A search of the NAHC Sacred Lands File did not yield any information regarding the presence of Tribal Cultural Resources within the project site or the immediate area.

In compliance with AB 52 (Public Resources Code Section 21080.3.1), a project notification letter was distributed to the Indian Canyon Mutsun Band of Costanoan, the Ohlone Indian Tribe, the Wilton Rancheria, and the Ione Band of Miwok Indians. The letters were distributed on April 26, 2019. In addition, tribal consultation based on SB18 was also initiated and letters were distributed on May 9, 2019. Requests were not received during either consultation period.

Based on the above, known Tribal Cultural Resources do not exist within the proposed project site. Nevertheless, the possibility exists that construction of the proposed project could result in a substantial adverse change in the significance of a Tribal Cultural Resource if previously unknown cultural resources are uncovered during grading or other ground-disturbing activities. Thus, a ***potentially significant*** impact to tribal cultural resources could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

XVIII-1. Implement Mitigation Measures V-1 and V-2.

XIX. 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 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?	☐	☐	✖	☐
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 management and reduction statutes and regulations related to solid waste?	☐	☐	✖	☐

Discussion

a-c. Water supply, wastewater treatment, stormwater drainage, electric power, natural gas, and telecommunications facilities necessary to serve the proposed project are described in the following sections.

Water Supply

Principal sources of raw water supply to the City of Antioch are the Sacramento/San Joaquin River Delta and the Contra Costa Canal, which are stored in the Antioch Municipal Reservoir. Domestic water and fire water supply for the proposed development would be provided by the City by way of new connections to the City's existing six-inch water main located to the east of the proposed residential building and the existing eight-inch water line within Buchanan Road. Irrigation water would be provided by new connection to the City's existing eight-inch water line within Delta Fair Boulevard. Per the City's 2015 Urban Water Management Plan (UWMP), adequate water supplies will be available to accommodate buildout of the City under normal year, single year, and multiple-dry year demand scenarios, accounting for mandatory measures included in the City's Water Shortage Contingency Plan. Therefore, the proposed project would not require or result in the relocation or construction of new or expanded off-site water facilities, the construction or relocation of which could cause significant environmental effects, and sufficient water supplies would be available to serve the proposed project and reasonably foreseeable future development during normal, dry, and multiple dry years.

Wastewater Treatment

The City maintains and owns the local sewage collection system and is responsible for the collection and conveyance of wastewater to the Delta Diablo Wastewater Treatment

Plant (WWTP). The Delta Diablo Sanitation District (DDSD) owns and operates the regional interceptors and WWTP. The project site is located within the Delta Diablo service area. The City of Antioch is responsible for the wastewater collection system from the project site to the designated DDSD regional wastewater conveyance facility. An EIR for the expansion of the wastewater treatment plant capacity to an average dry weather flow of 22.7 million gallons per day (mgd) was completed in April 1988. However, the current WWTP NPDES Permit limits average dry weather flow to 19.5 mgd.[26] The average daily flow influent to the treatment plant is 12.4 mgd.[27] Sewage flow to the plant does not fluctuate seasonally, as sewer and storm water systems are separate.[28] Funds for future plant expansion are collected by the City on behalf of DDSD from sewer connection fees.

The General Plan EIR bases anticipated wastewater demand on a generation rate of 220 gallons per day per residence. The proposed project would include the construction of 210 residential apartment units, and, thus, would be anticipated to generate approximately 46,200 gallons per day of wastewater. The wastewater generated by the project would flow to new four- and six-inch sewer connections to the City's existing sewer line located along the eastern portion of the site.

An increase of 46,200 gallons per day would not have a substantial impact on the available capacity of the WWTP. Additionally, in the current condition, the development on the project site generates wastewater and includes connections to the City's wastewater infrastructure. Because the project applicant would pay required sewer connection fees, and adequate long-term wastewater treatment capacity is available to serve full build-out of the project, the project would not require or result in the relocation or construction of new or expanded off-site wastewater facilities, the construction or relocation of which could cause significant environmental effects.

Stormwater Drainage

The project site is currently developed with the Delta Fair Shopping Center. As such, the project currently has stormwater drainage facilities in place. Following completion of the proposed project, the site would have similar impervious surface coverage. Thus, runoff generated by the project would not be substantially more than the existing conditions. As discussed in further detail in Section IX, Hydrology and Water Quality, of this IS/MND, the SWMP for the proposed project conforms with the most recent Contra Costa Clean Water Program Stormwater C.3 Guidebook and verifies that the proposed project would comply with all City stormwater requirements. In compliance with the C.3 Guidebook, the proposed project would include on-site bio-retention facilities sized to exceed the minimum volume requirement necessary to adequately manage all runoff from the proposed impervious surfaces. Because the proposed bio-retention facilities would be designed with adequate capacity to capture and treat runoff from proposed impervious surfaces, the proposed project would not generate runoff in excess of the City's existing stormwater system's capacity.

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[26] San Francisco Bay Regional Water Quality Control Board. *Order No. R2-2014-0030, NPDES No. CA00.8547.* Adopted August 13, 2014.

[27] Delta Diablo. *Quick Facts*. Available at: https://www.deltadiablo.org/about-us/organization/quick-facts. Accessed March 2018.

[28] City of Antioch. *Antioch General Plan Update EIR* [pg. 4.12-2]. July 2003.

Electric Power, Natural Gas, and Telecommunications

The project site is located within a developed area of the City of Antioch and is situated within close proximity to existing electric power, natural gas, and telecommunications facilities. In addition, the site is currently developed with commercial uses that include existing connections to electric power, natural gas, and telecommunications. Thus, substantial expansion of such off-site utilities would not be required to serve the proposed residential development, and associated environmental effects would not occur.

Conclusion

Based on the above, the proposed project would not 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. In addition, sufficient water supplies would be available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years, and adequate wastewater treatment capacity is available to serve the project's projected demand in addition to the provider's existing commitments. Thus, a ***less-than-significant*** impact would occur.

d,e. Republic Services provides solid waste collection, disposal, recycling, and yard waste services to the City, including the project site. 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 Keller Canyon 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. As of October 2015, the most recent date for which capacity information is available, the total remaining capacity of the landfill was 55 million cubic yards (approximately 73 percent of total capacity).[29] Due to the substantial amount of available capacity remaining at Keller Canyon Landfill, sufficient capacity would be available to accommodate the project's solid waste disposal needs. Therefore, a ***less-than-significant*** impact related to solid waste would occur as a result of the proposed project.

[29] Department of Conservation and Development. *Notice of Preparation and Public Scoping Meeting.* October 15, 2015.

XX. WILDFIRE. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?	☐	☐	✖	☐

Discussion

a-d. According to the CAL FIRE Fire and Resource Assessment Program, the proposed project site is not located within a Very High Fire Hazard Severity Zone.[30] In addition, the site is not located in or near a State Responsibility Area. The site is currently developed with commercial uses and is surrounded by existing development. Development of the site would also comply with appplicable regulations set forth by the CCCFPD. Thus, the proposed project would not be expected to be subject to or result in substantial adverse effects related to wildfires, and a ***less-than-significant*** impact would occur.

[30] California Department of Forestry and Fire Protection. *Contra Costa County, Very High Fire Hazard Severity Zones in LRA*. January 7, 2009.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Does the project have the potential to 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, substantially 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 cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	✖	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	✖	☐

Discussion

a. As discussed in Section IV, Biological Resources, of this IS/MND, implementation of the proposed project would have the potential to result in adverse effects to special-status wildlife species. In addition, while unlikely, the project could result in impacts related to eliminating important examples of major periods of California history or prehistory associated with encountering undiscovered archeological and/or paleontological resources during project construction. However, the proposed project would be required to comply with applicable City of Antioch General Plan and Municipal Code policies related to biological and cultural resources. In addition, this IS/MND includes mitigation measures that would reduce any potential impacts to less-than-significant levels. With implementation of the mitigation measures required by this IS/MND, as well as compliance with General Plan policies and all applicable sections of the Municipal Code, development of the proposed project would reduce any potential impacts associated with the following: 1) degrade the quality of the environment; 2) substantially reduce or impact the habitat of fish or wildlife species; 3) cause fish or wildlife populations to drop below self-sustaining levels; 4) threaten to eliminate a plant or animal community; 5) reduce the number or restrict the range of a rare or endangered plant or animal; or 6) eliminate important examples of the major periods of California history or prehistory. Therefore, a ***less-than-significant*** impact would occur.

b. The proposed project in conjunction with other development within the City of Antioch could incrementally contribute to cumulative impacts in the area. In particular, the project could result in increased traffic, which in conjunction with future development, could exceed City standards. However, a mitigation measure for the aforementioned potential impact identified for the proposed project in this IS/MND has been included that would reduce the potential impact to a less-than-significant level. As demonstrated in this

IS/MND, all potential environmental impacts that could occur as a result of project implementation would be reduced to a less-than-significant level with implementation of project-specific mitigation measures and compliance with applicable General Plan policies. When viewed in conjunction with other closely related past, present, or reasonably foreseeable future projects, development of the proposed project would result in a cumulatively considerable contribution to cumulative impacts in the City of Antioch, and the project's cumulative impact would be ***less than significant****.*

c. As described in this IS/MND, implementation of the proposed project could result in temporary impacts related to excess noise levels and increase in GHG emissions, as well as potential cancer risks during construction. However, the proposed project would be required to implement the project-specific mitigation measures within this IS/MND, as well as applicable policies of the City of Antioch General Plan, to reduce any potential direct or indirect impacts to human beings. With implementation of the identified mitigation measures, all project-specific impacts would be reduced to less-than-significant levels. Therefore, the proposed project's impact would be ***less than significant****.*