INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

FOR THE

CENTER POINTE PROJECT

JANUARY 2018

Prepared for:

City of Brentwood
Community Development Department
150 City Park Way
Brentwood, CA 94513
(925) 516-5405

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 580-9818

De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

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INITIAL STUDY

PROJECT TITLE

Center Pointe Project

LEAD AGENCY NAME AND ADDRESS

City of Brentwood
Community Development Department
150 City Park Way
Brentwood, CA 94513
(925) 516-5405

CONTACT PERSON AND PHONE NUMBER

Tim Nielsen, Associate Planner
Community Development Department
City of Brentwood
(925) 516-5151

PROJECT SPONSOR NAME AND ADDRESS

TA Brentwood LLC C/O Tekin Associates
3201 Danville Boulevard, Suite 210
Alamo, CA 94507

PURPOSE OF THE INITIAL STUDY

An Initial Study (IS) is a preliminary analysis which is prepared to determine the relative environmental impacts associated with a proposed project. It is designed as a measuring mechanism to determine if a project will have a significant adverse effect on the environment, thereby triggering the need to prepare an Environmental Impact Report (EIR). It also functions as an evidentiary document containing information which supports conclusions that the project will not have a significant environmental impact or that the impacts can be mitigated to a "Less Than Significant" or "No Impact" level. If there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, the lead agency shall prepare a Negative Declaration (ND). If the IS identifies potentially significant effects, but: (1) revisions in the project plans or proposals would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and (2) there is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment, then a Mitigated Negative Declaration (MND) shall be prepared.

This IS has been prepared consistent with California Environmental Quality Act (CEQA) Guidelines Section 15063, to determine if the proposed Centre Pointe Project (project) may have a significant effect upon the environment. Based upon the findings and mitigation measures contained within this report, a MND will be prepared.

PROJECT LOCATION AND SETTING

PROJECT LOCATION

The project site consists of approximately 7.63 acres located at the southwest corner of the Jeffery Way and Lone Tree Way intersection within the northwestern area of the City of Brentwood. The project site is identified by Assessor Parcel Number (APN) 019-020-071. The project's regional location is shown in Figure 1, and the project vicinity is shown in Figure 2.

EXISTING SITE USES

The project site is currently undeveloped and vacant. Trees are not located on the project site. Figure 3 shows an aerial view of the project site.

SURROUNDING LAND USES

The project site is bound by existing roadways and highways, including Lone Tree Way to the north, Jeffery Way to the east, a State Route (SR) 4 on-ramp to the south, and SR 4 to the west. The area to the east of the project site opposite Jeffery Way is developed with commercial and institutional uses within the Brentwood Station development, including Chuck E. Cheese's, Martini's Home Furnishings, Wendy's, Buffalo Wild Wings, Verizon Wireless, and the Church of Jesus Christ of Latter-Day Saints. Lands to the west of the project site opposite SR 4 also consist of commercial uses within the Lone Tree Plaza development, including The Home Depot, FedEx, Chevron, and the shared Boot Barn/Rock N' Jump building. The parcel to the south of the project site, opposite the SR 4 on- and off-ramps, is currently vacant and disturbed land. Additional commercial uses are located to the northwest and northeast, on the east and west of the SR 4 right-of-way and within the City of Antioch. The nearest single-family neighborhood is located approximately 0.2 miles to the north, beyond Country Hills Drive, within the City of Antioch.

PROJECT DESCRIPTION

The proposed project includes development of six commercial, retail, and restaurant buildings totaling 62,170 square feet (sf) on the 7.63-acre project site. The project site plan is shown in Figure 4, and the project plans are included as Appendix A. The six buildings would be constructed as follows:

- 38,000 sf fitness center (24 Hour Fitness);
- 5,400 sf commercial with drive-through (two tenants);
- 4,000 sf commercial/retail (one tenant);
- 6,510 sf restaurant (one tenant);
- 3,285 sf drive-through restaurant (one tenant); and
- 4,975 sf drive-through restaurant (Chick-Fil-A).

Landscaping would be provided throughout the site. A 70-foot pylon sign is proposed at the northwest corner of the project site and an additional 50-foot sign is proposed to be constructed west of the proposed fitness center, east of SR 4. The sign would contain the logos of the future tenants. Additionally, two ground-level monument sign areas would be provided at the main entrance to the proposed commercial center.

The project includes development of all associated supporting infrastructure (internal roadways, driveways, water, sewer, etc.). The site plan identifies that the project would be served by the following existing service providers:

- City of Brentwood for water;
- City of Brentwood for wastewater collection and treatment;
- City of Brentwood for stormwater collection;
- Pacific Gas and Electric Company for gas and electricity.

Seven bio-retention treatment areas would be located throughout the project site. Stormwater from the proposed project site would drain to storm drain catch basins. Utility extensions would be installed to provide services to the project. Utility lines within the project site and adjacent roadways would be extended throughout the project site. Wastewater, water, and storm drainage lines would be connected via existing lines along the surrounding roadways (Jeffery Way and Lone Tree Way). Sanitary sewer lines ranging in size from eight to ten inches are currently located along Jeffery Way and Lone Tree Way. Twelve-inch and eight-inch water lines are currently located along Jeffery Way and Lone Tree Way. Additionally, 18 to 36-inch storm drainage lines are currently located along Jeffery Way and Lone Tree Way.

Access to the project site would be provided along Jeffery Way via three driveways. Two driveways are proposed to be right-in/right-out only. The center driveway would be aligned with an existing driveway that serves the Brentwood Station shopping center, and is proposed to be signalized and provide full site access. Up to 372 parking stalls would be provided throughout the site.

In accordance with the Brentwood Zoning Ordinance, all proposed structures are subject to design review approval by the City of Brentwood Planning Commission in order to foster good design character through consideration of aesthetic and functional relationships to surrounding development.

GENERAL PLAN AND ZONING DESIGNATIONS

The project site is designated Mixed Use Pedestrian Transit (MUPT) by the Brentwood General Plan Land Use Map. The project site is also located within Priority Area 1 (PA-1). The MUPT designation identifies an area which, because of its strategic location, access, and visibility to SR 4, shall be developed predominately with jobs-generating and commercial uses. This designation is intended to provide high-quality jobs in office, professional, research and technology, and light industry sectors, and to allow commercial uses with a regional focus. This area is envisioned to be served by mass transit (i.e., eBART) or located at or near a destination point with a regular bus route. Other uses may include integrated medium to very high density residential development and amenities, including services, restaurants, and recreation opportunities, in a pedestrian-friendly environment. Multi-family housing units will be allowed at a density of 5.1 to 30.0 units per acre, in accordance with the policy direction provided by PA-1 (there is no applicable mid-range density for this designation). A General Plan Amendment would not be required for the project. The existing General Plan land use designation for the project site is shown on Figure 5.

The project site is currently zoned Planned Development (PD-53) by the Brentwood Zoning Map. This is a shell zoning designation with no development standards in-place for the subject site. A Zoning Amendment would be required for the project in order to change the zoning designation to PD-53, Subarea D. The existing and proposed zoning designations for the project site are shown on Figure 6.

REQUESTED ENTITLEMENTS AND OTHER APPROVALS

The City of Brentwood is the Lead Agency for the proposed project, pursuant to the State Guidelines for Implementation of CEQA, Section 15050.

This document will be used by the City of Brentwood to take the following actions:

- Adoption of the MND;
- Adoption of the Mitigation Monitoring and Reporting Program (MMRP);
- Design Review;
- Conditional Use Permits.

Sources: CalAtlas. Map date: October 17, 2017.

CITY OF BRENTWOOD - CENTER POINTE

Figure 1: Regional Location Map

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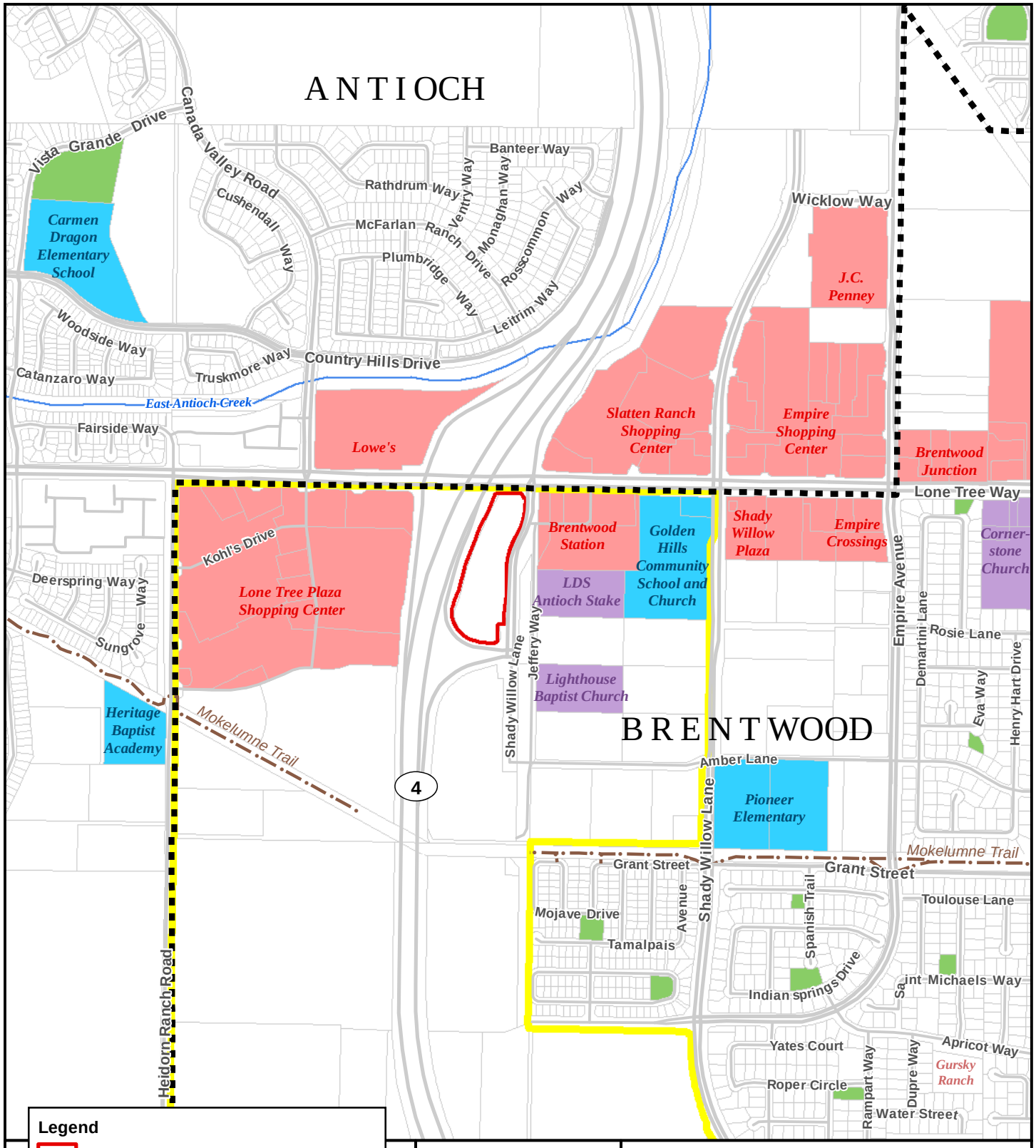

Sources: Contra Costa County GIS; Open Streets; Google Maps. Map date:December 26, 2017.

CITY OF BRENTWOOD - CENTER POINTE

Figure 2. Project Vicinity

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Legend

Project Boundary (7.63 ac)

Brentwood City Boundary

0 100 200

Feet

Sources: Contra Costa County GIS; Open Streets; ArcGIS Online Imagery Map Service. Map date: October 17, 2017.

CITY OF BRENTWOOD - CENTER POINTE

Figure 3. Aerial View of Project Site

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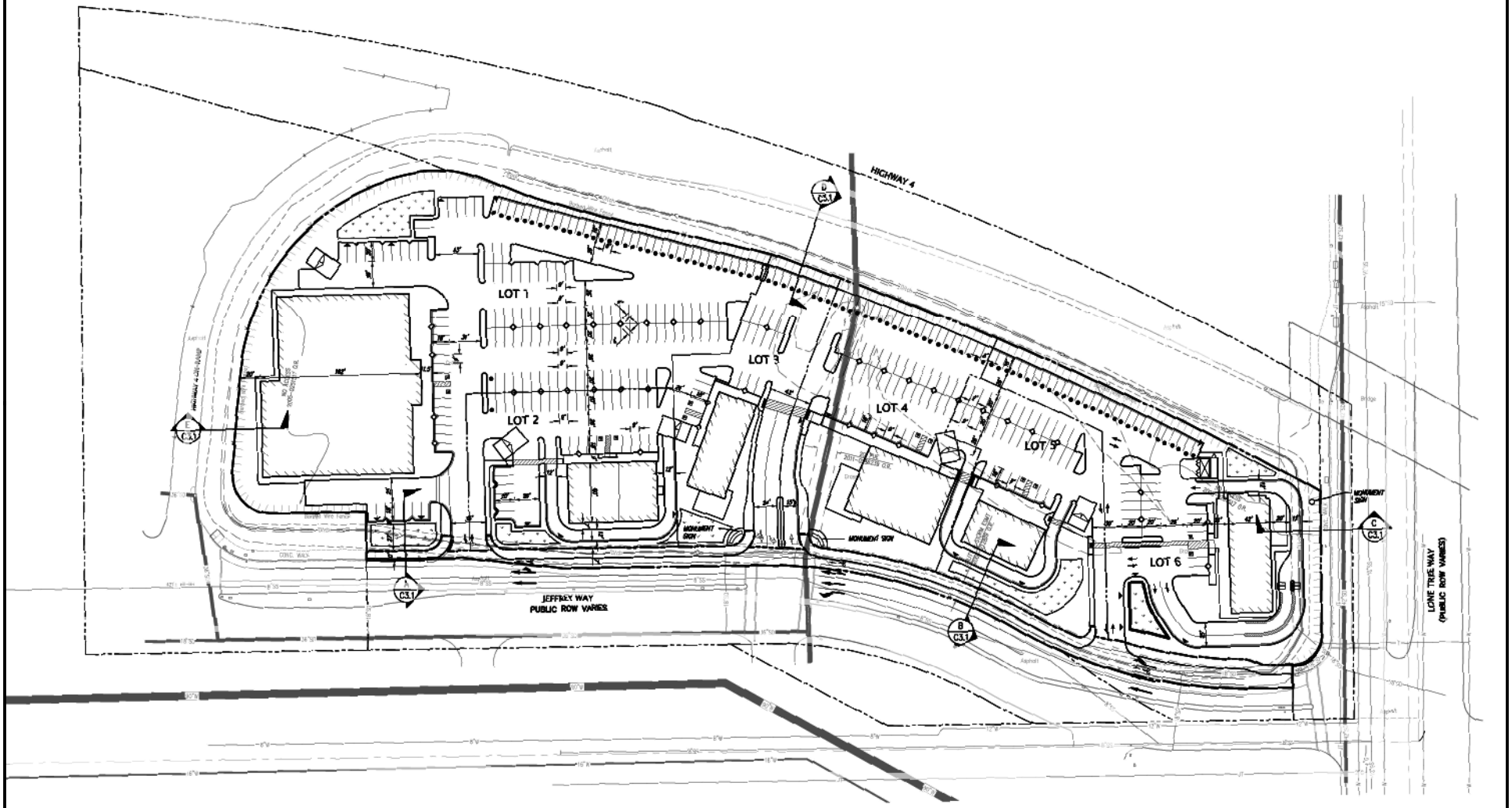

CITY OF BRENTWOOD - CENTER POINTE

Figure 4. Site Plan

Source: Kier & Wright Civil Engineers, August 2017. Map date: December 26, 2017.

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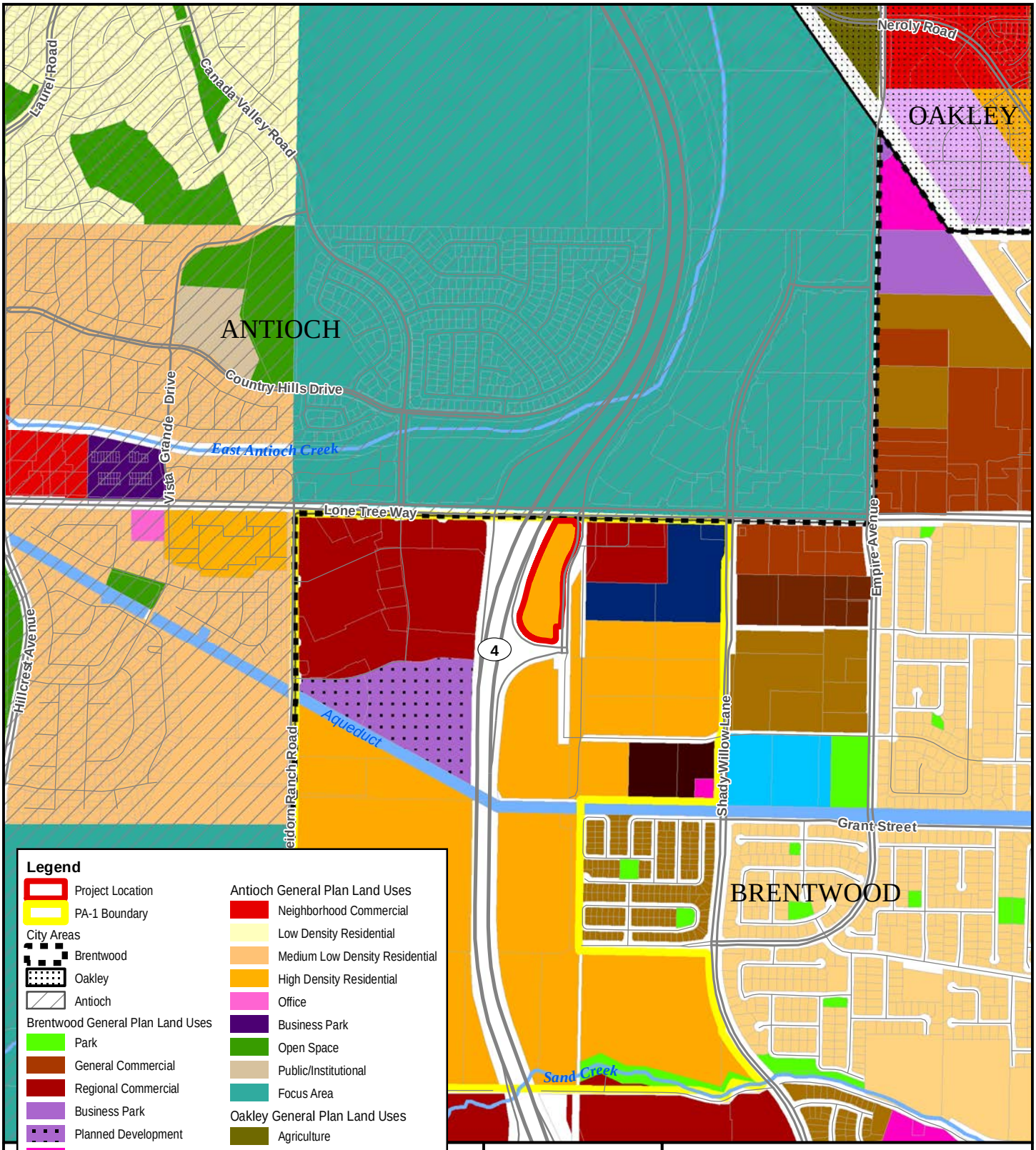

Sources: Riverside County; City of Temecula. Map date: October 2, 2017.

CITY OF BRENTWOOD - CENTER POINTE

Figure 5. Existing General Plan Land Use Map

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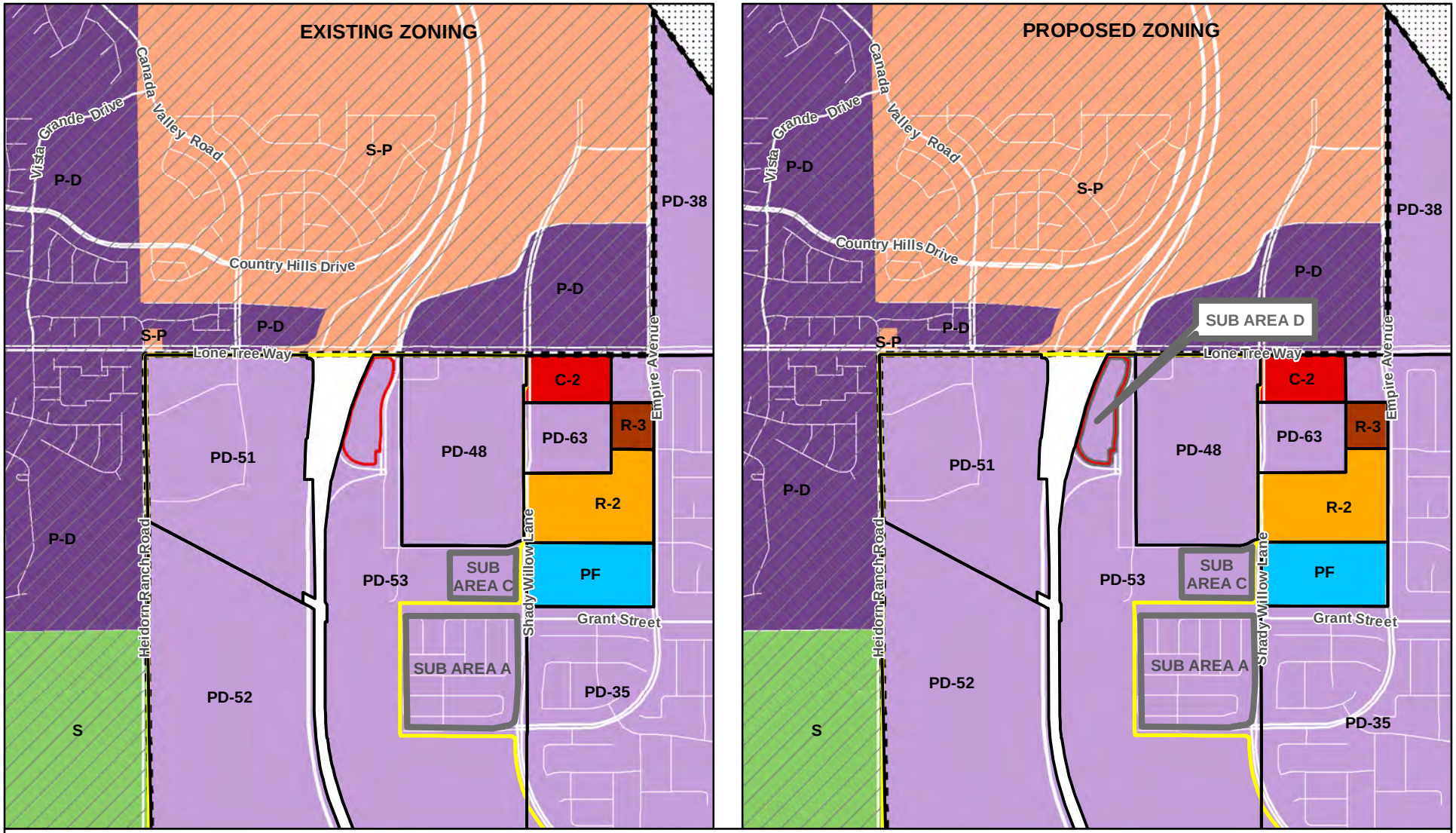

Legend

- Project Location
- Brentwood Priority Area 1 (PA-1)
- City of Brentwood
- City of Oakley
- City of Antioch

City of Brentwood Zoning Designation

- C-2: General Commercial
- PF: Public Facility
- R-2: Moderate Density Multi-Residential
- R-3: High Density Multi-Residential
- PD: Planned Development
- PD-53 Sub Area

City of Antioch Zoning Designation

- P-D: Planned Development
- S: Study District
- S-P: Specific Plan

CITY OF BRENTWOOD - CENTER POINTE

Figure 6. Existing and Proposed Zoning

N 0 500 1,000 Feet 1:18,000

Source: City of Brentwood; City of Antioch; Contra Costa County; Open Streets. Map date: October 25, 2017.

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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		Geology and Soils
	Greenhouse Gasses		Hazards and Hazardous Materials		Hydrology and Water Quality
	Land Use and Planning		Mineral Resources		Noise
	Population and Housing		Public Services		Recreation
	Transportation and Circulation		Tribal Cultural Resources		Utilities and Service Systems
	Mandatory Findings of Significance				

DETERMINATION:

On the basis of this initial evaluation:

	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
X	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 project proponent. 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" impact 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 or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature Date

EVALUATION INSTRUCTIONS

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).
5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
    a) Earlier Analysis Used. Identify and state where they are available for review.
    b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9) The explanation of each issue should identify:
   a) The significance criteria or threshold, if any, used to evaluate each question; and
   b) The mitigation measure identified, if any, to reduce the impact to less than significance

EVALUATION OF ENVIRONMENTAL IMPACTS

In each area of potential impact listed in this section, there are one or more questions which assess the degree of potential environmental effect. A response is provided to each question using one of the four impact evaluation criteria described below. A discussion of the response is also included.

- Potentially Significant Impact. This response is appropriate when there is substantial evidence that an effect is significant. If there are one or more "Potentially Significant Impact" entries, upon completion of the Initial Study, an EIR is required.
- Less than Significant With Mitigation Incorporated. This response applies when the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact". The Lead Agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level.
- Less than Significant Impact. A less than significant impact is one which is deemed to have little or no adverse effect on the environment. Mitigation measures are, therefore, not necessary, although they may be recommended to further reduce a minor impact.
- No Impact. These issues were either identified as having no impact on the environment, or they are not relevant to the project.

ENVIRONMENTAL CHECKLIST

This section of the Initial Study incorporates the most current Appendix "G" Environmental Checklist Form, contained in the CEQA Guidelines. Impact questions and responses are included in both tabular and narrative formats for each of the 19 environmental topic areas.

I. AESTHETICS -- WOULD THE PROJECT:

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X	
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?		X		

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b): Less than Significant. The City of Brentwood is located in the eastern valley area of Contra Costa County, immediately east of the Diablo Range, which includes Mount Diablo. The City of Brentwood has recognized views of Mount Diablo as an important visual resource to be preserved (see Policy COS 7-3 of the Conservation and Open Space Element of the Brentwood General Plan).

According to the 2014 Brentwood General Plan Update EIR and the California Scenic Highway Mapping System, administered by Caltrans, the City of Brentwood does not contain officially designated State Scenic Highways.[1] However, it should be noted that the segment of State Route 4 (SR 4) west of the junction with Byron Highway to the junction with SR 160 is listed as an Eligible State Scenic Highway, but has not yet been officially designated. The project site is located adjacent to and east of this segment of SR 4. The project would not damage any scenic resources, such as trees, rock outcroppings, or historic buildings, within a State Scenic Highway. Additionally, the project site is not designated as a scenic vista. The 2014 Brentwood General Plan Update EIR identifies SR 4 as a local scenic route due to the distant panoramic vistas of the Diablo Range and Mount Diablo in particular. Mount Diablo is located to the west of SR 4 and the proposed project is located to the east of SR 4. As a result, the project structures would not

[1] City of Brentwood. *2014 Brentwood General Plan Update EIR* [pg. 3.1-5]. July 22, 2014.

impede views of Mount Diablo currently afforded to travelers along SR 4, or impede views of Mount Diablo from residents residing in the City of Brentwood.

The proposed project would not remove trees, rock outcroppings, and historic buildings within a State Scenic Highway, and is not designated as a scenic vista. Therefore, this is considered a **less than significant** impact.

Response c): Less than Significant. The development of the site would change the existing visual setting from predominately undeveloped land to an urban area consisting of six commercial buildings, and associated site improvements. The proposed development would be considered compatible with other commercial uses existing and planned in the immediate vicinity of the project site. In addition, the proposed project is consistent with the PD-53 zoning designation identified in the City's Zoning Map.

The proposed structures would include a mix of materials, varied roof lines, and building recesses and articulations. Landscaping would be provided throughout the site.

Implementation of the proposed project would alter the visual appearance on the project site once the proposed commercial development is complete. The proposed project is identified for urban land uses in the Brentwood General Plan. The proposed project is consistent with the overriding considerations that were adopted for the General Plan. As such, implementation of the proposed project would not create new impacts over and above those identified in the General Plan Final EIR nor significantly change previously identified impacts.

The final project design would be approved by the City through its design review process. Through this process the Planning Commission would ensure the design meets the criteria set forth in Municipal Code Section 17.820.007. As a result, development of the project site would result in a **less than significant** impact with respect to substantially degrading the existing visual character or quality of the site and its surroundings.

Response d): Less than Significant with Mitigation. The project site is currently undeveloped. Street lights currently exist along Jeffery Way and Lone Tree Way. Minimal light is currently emitted from the project site. The change from a predominantly vacant property to a commercial development, including a fitness center, restaurant, and other commercial and retail uses, and associated parking lot lighting, would generate new permanent sources of light and glare. The project site is adjacent to existing commercial facilities to the north, east, and west. The residential structures located along Amber Lane would be considered sensitive receptors, which could be adversely affected by additional sources of light and glare. However, the project would not include reflective building materials, and the proposed lighting would use LED bulbs with fixtures directed downward in order to minimize sky glow. Additionally, vehicle headlight glare would not be exacerbated given the existing level of traffic on SR 4, Jeffery Way, and Lone Tree Way, and landscaping that would restrict project vehicle light sources. However, street and safety lighting located along project roadways and parking areas may be visible from surrounding locations. Therefore, the increase in light produced by the proposed project would be considered potentially significant.

Implementation of the following mitigation measure would reduce the potential impacts related to light and glare to **less than significant**.

Mitigation Measure(s)

Mitigation Measure AES-1*: In conjunction with development of the proposed project, the developer shall shield all onsite lighting so that nighttime lighting is directed within the project site and does not illuminate adjacent properties. A detailed photometric plan shall be submitted for the review and approval by the Community Development Department and the Public Works Department in conjunction with the project improvement plans. The photometric plan shall indicate the locations and design of the shielded light fixtures.*

II. AGRICULTURE AND FOREST RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?		X		
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1222(g)) or timberland (as defined in Public Resources Code section 4526)?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?			X	

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant with Mitigation. The project site is designated as Urban and Built-Up Land by the Farmland Mapping and Monitoring Program.[2] Figure 7 identifies Important Farmlands, as mapped by the USDA, on and near the project site. The project site has been previously used for agricultural production. Historical aerial photographs show orchard uses on the project site in 1993. Due to the existing surrounding land uses, the project site is not suitable for agricultural production or agricultural operations.

The on-site soils consist of Capay clay. Capay clay is classified is as a Prime Farmland soil, when irrigated. Development of the site for urban uses and the subsequent removal of Prime Farmland soil for agricultural use was taken into consideration in the City of Brentwood General Plan and General Plan EIR. Buildout of the General Plan would result in the conversion of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance to urban uses. The General Plan Draft EIR found this to be a significant and unavoidable impact. In June 2014, the Brentwood City Council adopted a Statement of Overriding Considerations for the loss of prime agricultural land resulting from adoption of the Plan and EIR, and provided mitigation measures for the agricultural land lost to development in the City of Brentwood's urbanized areas.

Additionally, Section 17.730.020 of the City of Brentwood's Agricultural Preservation Program states that, "agricultural land" requiring mitigation, includes: "*those land areas of Contra Costa County specifically designated as agricultural core (AC) or agricultural lands (AL) as defined in the*

[2] Available at: http://maps.conservation.ca.gov/ciff/ciff.html.

Contra Costa County general plan; those land areas near the city designated as agricultural conservation (AC) as defined in the Brentwood general plan; and/or other lands upon which agricultural activities, uses, operations or facilities exist or could exist that contain Class I, II, III or IV soils as defined by the United States Department of Agriculture Natural Resource Conservation Service."

The proposed project is identified for urban land uses in the Brentwood General Plan. The proposed project is consistent with the overriding considerations that were adopted for the General Plan. As such, implementation of the proposed project would not create new impacts over and above those identified in the General Plan Final EIR, nor significantly change previously identified impacts; therefore, in this regard, there is no impact. However, the site currently consists of land previously used for agricultural purposes, and contains Prime Farmland soil, when irrigated. The proposed project is therefore subject to compliance with Chapter 17.730, Agricultural Preservation Program, of the Brentwood Municipal Code. Implementation of the following mitigation measure would bring the proposed project into compliance with Chapter 17.730 of the Brentwood Municipal Code. Thus, through implementation of Mitigation Measure AG-1, impacts related to this environmental topic are considered **less than significant**.

Mitigation Measure(s)

Mitigation Measure AG-1*: The project applicant must preserve agricultural lands by paying an in-lieu fee established by City Council resolution. The fee may be adjusted annually but may not be increased by more than ten percent during any twelve-month period.*

Response b): No Impact. The project site is not under Williamson Act contract, nor is the site zoned for agricultural use. The current land use designation for the project site is MUPT. Therefore, the project would have no impact with respect to conflicting with agricultural zoning or Williamson Act contracts. There is **no impact.**

Responses c) and d): No Impact. The project site 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]). Trees are not located on the project site. 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. Therefore, there is **no impact**.

Response e): Less than Significant. Individual project impacts to the loss of Prime Farmland are addressed through the proposed mitigation in item **a)** above. The proposed project would not be anticipated to promote off-site development of existing agricultural land because the proposed infrastructure is sized to serve only the project area. The existing vacant land to the south of the project site is designated MUPT by the City's General Plan Land Use Map and is expected to be developed in the future. The proposed project and urban land uses identified for the surrounding area are consistent with the overriding considerations that were adopted for the General Plan. As such, implementation of the proposed project would not create new impacts over and above those identified in the General Plan Final EIR, nor significantly change previously identified impacts related to agricultural resources. In addition, the project site is consistent with

the type and intensity of land uses anticipated by the General Plan. Finally, the project site is not considered to be forest land. Therefore, the proposed project would result in a **less than significant** impact to the existing environment that could individually or cumulatively result in loss of farmland to non-agricultural uses or conversion of forest land to non-forest uses.

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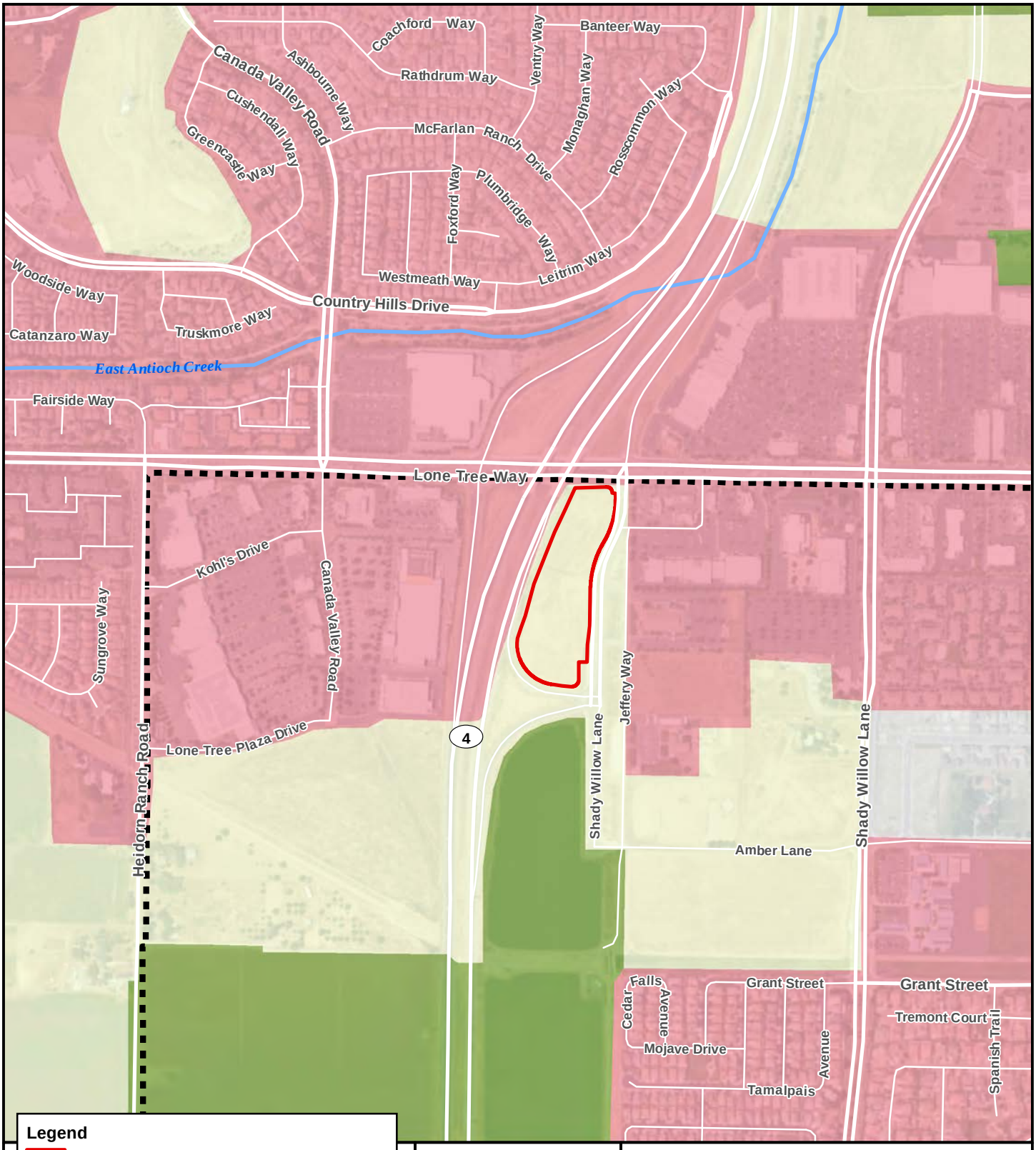

Sources: Farmland Mapping and Monitoring Program, Contra Costa County, 2014; Map date: October 16, 2017.

CITY OF BRENTWOOD - CENTER POINTE

Figure 7. Important Farmlands Map

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A Land Use Planning, Design, and Environmental Firm

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III. AIR QUALITY -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X	
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			X	
d) Expose sensitive receptors to substantial pollutant concentrations?		X		
e) Create objectionable odors affecting a substantial number of people?			X	

EXISTING SETTING

The project site is located within the boundaries of the Bay Area Air Quality Management District (BAAQMD). This agency is responsible for monitoring air pollution levels and ensuring compliance with federal and state air quality regulations within the San Francisco Bay Area Air Basin (SFBAAB) and has jurisdiction over most air quality matters within its borders.

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. The SFBAAB is currently designated as a nonattainment area for State and federal ozone, State and federal particulate matter 2.5 microns in diameter ($PM_{2.5}$), and State particulate matter 10 microns in diameter (PM_{10}) standards. The BAAQMD, in cooperation with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG), prepared the 2005 Ozone Strategy, which is a roadmap depicting how the Bay Area will achieve compliance with the State one-hour air quality standard for ozone as expeditiously as practicable and how the region will reduce transport of ozone and ozone precursors to neighboring air basins. Although the California Clean Air Act does not require the region to submit a plan for achieving the State PM_{10} standard, the 2005 Ozone Strategy is expected to also reduce PM_{10} emissions. In addition, to fulfill federal air quality planning requirements, the BAAQMD adopted a $PM_{2.5}$ emissions inventory for year 2010, which was submitted to the U.S. Environmental Protection Agency (USEPA) on January 14, 2013 for inclusion in the State Implementation Plan (SIP).

The current plan in place to achieve progress toward attainment of the federal ozone standards is the *Revised San Francisco Bay Area Ozone Attainment Plan for the 1-Hour National Ozone Standard*. The USEPA recently revoked the 1-hour federal ozone standard; however, the region is designated nonattainment for the new 8-hour standard that replaced the older one-hour

standard. Until the region either adopts an approved attainment plan or attains the standard and adopts a maintenance plan, the *Revised San Francisco Bay Area Ozone Attainment Plan for the 1-Hour National Ozone Standard* remains the currently applicable federally-approved plan.

The aforementioned applicable air quality plans contain mobile source controls, stationary source controls, and transportation control measures (TCMs) to be implemented in the region to attain the State and federal ozone standards within the SFBAAB. The plans are based on population and employment projections provided by local governments, usually developed as part of the General Plan update process. The proposed project would be considered to conflict with, or obstruct implementation of, an applicable air quality plan if the project would be inconsistent with the Ozone Attainment Plan's growth assumptions, in terms of population, employment, or regional growth in Vehicle Miles Traveled (VMT). The growth assumptions are based on ABAG projections that are, in turn, based on the City's General Plan. The proposed project site was designated for MUPT uses in the Brentwood General Plan in effect at the time ABAG projections were forecast. The proposed project is consistent with the General Plan land use designation; therefore, the project would be considered consistent with the growth assumptions of the applicable air quality plans. As a result, the proposed project would not conflict with or obstruct implementation of the applicable air quality plans. This is a **less than significant** impact.

Responses b), c): Less than Significant. According to the CEQA Guidelines, an air quality impact may be considered significant if the proposed project's implementation would result in, or potentially result in, conditions, which violate any existing local, State or federal air quality regulations. In order to evaluate ozone and other criteria air pollutant emissions and support attainment goals for those pollutants designated as nonattainment in the area, the BAAQMD has established significance thresholds associated with development projects for emissions of reactive organic gases (ROG), nitrogen oxide (NO_x), PM_{10}, and $PM_{2.5}$. The BAAQMD's significance thresholds, expressed in pounds per day (lbs/day) for project-level and tons per year (tons/yr) for cumulative, listed in Table 1, are recommended for use in the evaluation of air quality impacts associated with proposed development projects.

TABLE 1: BAAQMD THRESHOLDS OF SIGNIFICANCE

Pollutant	*Construction (lbs/day)*	*Operational (lbs/day)*	*Cumulative (tons/year)*
ROG	54	54	10
NOx	54	54	10
PM_{10}	82	82	15
$PM_{2.5}$	54	54	10

SOURCE: BAAQMD, CEQA GUIDELINES, MAY 2011.

In addition, the BAAQMD identifies screening criteria for development projects, which provide a conservative indication of whether a development could result in potentially significant air quality impacts. If the screening criteria are exceeded by a project, a detailed air quality assessment of that project's air pollutant emissions would be required. The project includes development of a commercial shopping center. The criteria pollutant screening criteria for this type of development is if the development is less than or equal to the following screening level sizes:

- Regional shopping center:
  - 99,000 sf for operational criteria pollutants; or
  - 277,000 sf for construction criteria pollutants.

Accordingly, if a regional shopping center development is less than or equal to the above listed screening size for operational or construction criteria pollutants, the development would not be expected to result in potentially significant air quality impacts, and a detailed air quality assessment would not be required.

Implementation of the proposed project would contribute local emissions in the area during both the construction and operation of the proposed project. The proposed project includes development of six commercial and retail buildings totaling 62,170 sf. Therefore, the project is below the screening size for operational criteria pollutants and construction criteria pollutants.

It should be noted that the BAAQMD was challenged in Superior Court, on the basis that the BAAQMD failed to comply with CEQA when it adopted its CEQA guidelines, including thresholds of significance. The BAAQMD was ordered to set aside the thresholds and conduct CEQA review of the proposed thresholds. On August 13, 2013, the First District Court of Appeal reversed the trial court's decision striking down BAAQMD's CEQA thresholds of significance for greenhouse gas (GHG) emissions. The Court of Appeal's held that CEQA does not require BAAQMD to prepare an EIR before adopting thresholds of significance to assist in the determination of whether air emissions of proposed projects might be deemed "significant." The Court of Appeal's decision provides the means by which BAAQMD may ultimately reinstate the GHG emissions thresholds, though the court's decision does not become immediately effective. It should be further noted that a petition for review has been filed; however, the court has limited its review to the following issue: Under what circumstances, if any, does CEQA require an analysis of how existing environmental conditions will impact future residents or users (receptors) of a proposed project? Ultimately, the thresholds of significance used to evaluate proposed developments are determined by the CEQA lead agency. Per CEQA Guidelines Section 15064.7, the City has elected to use the BAAQMD's thresholds and methodology for this project, as they are based on substantial evidence and remain the most up-to-date, scientifically-based method available to evaluate air quality impacts. Thus, the BAAQMD screening criteria are utilized for this analysis.

As discussed above because the proposed project is below the BAAQMD screening size for a regional shopping center, quantification of criteria pollutants is not required for the project. It should be noted that the project is required to comply with all BAAQMD rules and regulations for construction, including implementation of the BAAQMD's recommended Basic Construction Mitigation Measures. The Basic Construction Mitigation Measures include, but are not limited to, watering exposed surfaces, covering all haul truck loads, removing all visible mud or dirt track-out, limiting vehicle speeds on unpaved roads, and minimizing idling time.

Because the project is below the BAAQMD screening size for operational criteria pollutants and construction criteria pollutants, the proposed project would not result in emissions above the applicable BAAQMD thresholds of significance. Accordingly, the project would not violate air

quality standards or contribute to the region's nonattainment status of ozone. Therefore, impacts would be **less than significant**.

Response d): Less than Significant with Mitigation. Sensitive receptors are generally defined as uses that house or attract groups of children, the elderly, people with illnesses, and others who are especially sensitive to the effects of air pollutants. Schools, hospitals, residential areas, and convalescent facilities are examples of sensitive receptors. The nearest sensitive receptors to the project site are located at the Celebration Center (2260 Jeffery Way), located approximately 500 feet southeast of the project site. The Celebration Center has a pre-school and after school program for children.

Short-Term Construction Toxics

Construction activities would emit pollutants that could negatively affect sensitive receptors in the project area. However, the duration of exposure would be short and exhaust from construction equipment dissipates rapidly. Further, because the project is below the BAAQMD screening size for operational criteria pollutants and construction criteria pollutants, project construction would not exceed BAAQMD thresholds for particulate matter. However, sensitive receptors could still be exposed to nuisance levels of fugitive dust and this would be a significant impact. Therefore, Mitigation Measure AIR-1, which includes standard BAAQMD dust control measures, would be required. With implementation of Mitigation Measure AIR-1, sensitive receptors would not be exposed to substantial diesel exhaust particulate matter or fugitive dust particulate matter emissions, and temporary impacts from construction-generated air toxics would be reduced to a less than significant level.

Localized Carbon Monoxide

Emissions of carbon monoxide (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. CO emissions are particularly related to traffic levels.

In addition to screening criteria for criteria pollutants and GHG, BAAQMD has established screening criteria for localized CO emissions, including the following:

- Consistency with applicable congestion management programs;
- Project traffic increase traffic volumes at intersections to more than 44,000 vehicles per hour; or
- Project traffic increase traffic volumes at 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 the City has elected to use the BAAQMD's thresholds and methodology for this project, the BAAQMD's screening criteria for localized CO emissions presented above are utilized for this analysis.

A General Plan Amendment is not required for the proposed project. The proposed uses are consistent with the General Plan and zoning designations for the site. As such, the project would be considered consistent with the growth assumptions of the General Plan. Subsequently, the project would result in similar mobile source emissions as currently anticipated for the site. In addition, none of the affected intersections currently involve traffic volumes of 44,000 vehicles per hour (or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited), and would not increase traffic volumes to greater than 44,000 vehicles per hour as a result of the proposed project. Therefore, according to the BAAQMD screening criteria above, the proposed project would not be expected to result in substantial increase in levels of CO at surrounding intersections, and the project would not generate or be subjected to localized concentrations of CO in excess of applicable standards.

Toxic Air Contaminants

Toxic Air Contaminants (TACs) are also a category of environmental concern. The California Air Resources Board's (CARB) *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) provides recommendations for siting new sensitive land uses near sources typically associated with significant levels of TAC emissions, including, but not limited to, freeways and high traffic roads, distribution centers, and rail yards. The project site is not located in the vicinity of any rail yard. 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. Health risks from TACs are a function of both the concentration of emissions and the duration of exposure. Health-related risks associated with DPM in particular are primarily associated with long-term exposure and associated risk of contracting cancer.

Children, pregnant women, the elderly, and those with existing health problems are considered more sensitive to air pollution than others. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, day care centers, playgrounds, and medical facilities. The proposed project includes the development of a regional commercial development, which is not considered a sensitive receptor. Sensitive individuals that would travel to and from the project site would only remain within the project site on a temporary basis. The CARB, per its Handbook, considers that any project placing sensitive receptors within 500 feet of a major roadway or freeway may have the potential to expose those receptors to DPM. Similarly, the BAAQMD recommends placement of overlay zones at least 500 feet from all freeways and high volume roadways. The nearest freeway, SR-4, is located within 500 feet of the project site (to the west). Therefore, the project site could be subjected to substantial concentrations of DPM associated with such. However, the proposed project would not be considered a sensitive receptor, since it would not contain sensitive land uses such as residences, schools, day care centers, playgrounds, and/or medical facilities. The proposed project is designated MUPT by the City of Brentwood General Plan. According to the City of Brentwood General Plan, the MUPT designation identifies an area which, because of its strategic location, access, and visibility to SR 4, shall be developed predominately with jobs-generating and commercial uses. This designation is intended to provide high-quality jobs in office, professional, research and technology, and light industry sectors, and to allow commercial uses with a regional focus.

The project does not involve long-term operation of any stationary diesel engine or other major on-site stationary source of TACs. Relatively few vehicle trips associated with operations of the proposed use would be expected to be composed of diesel-fueled vehicles. Therefore, the project would not generate any substantial concentrations of TACs during operations.

Valley Fever

The City of Brentwood was previously advised of two serious cases of Valley Fever contracted during an archeological excavation near the southern City limit boundary. Valley Fever is an infection caused by inhalation of the spores of the *Coccidioides immitis fungus*, which grows in soils and are released during earthmoving. The fungus is very prevalent in the soils of California's San Joaquin Valley. The ecological factors that appear to be most conducive to survival and replication of the spores are high summer temperature, mild winters, sparse rainfall, and alkaline, sandy soils. Earth moving during development of the project site could put nearby residents at a greater risk of exposure to Valley Fever; however, because fungus spores need to become airborne in order to enter the respiratory tract of humans, and landscaping, building pads, and streets associated with the development would eliminate most fugitive dust, the threat is more serious for construction workers than for nearby residents. Residents and day care or after-school program participants in close proximity to the project site during construction may be at risk of being exposed to the disease due to proximity and a relatively lower immunity. As a result, measures should be taken to reduce the potential for exposure of the disease during construction to both construction workers and nearby receptors. These include measures to control dust through construction site irrigation, soil stabilizers and landscaping. Paving roads, planting grass, and other measures that reduce dust where people live, work, or engage in recreation have been shown to reduce the incidence of infection. Sufficient wetting of the soil prior to grading activities can reduce exposure to airborne spores of the fungus.

Development of the project site could potentially expose construction workers and nearby residents to fungus spores that cause Valley Fever. Grading activities associated with development have the potential to release the fungus into the air, increasing the risk of infection to the surrounding population. Implementation of the project may result in human health impacts due to exposure to fungus spores which cause Valley Fever.

Conclusion

In conclusion, the proposed project would not expose sensitive receptors to substantial concentrations of any TACs after mitigation. Implementation of the following mitigation measures would reduce this impact to a **less than significant** level.

Mitigation Measure(s)

Mitigation Measure AQ-1*: Prior to the issuance of a grading permit, the Applicant/Developer shall prepare an Erosion Prevention and Dust Control Plan. The plan shall be followed by the project's grading contractor and submitted to the Public Works Department, which will be responsible for field verification of the plan during construction.*

The plan shall comply with the City's grading ordinance and shall include the following control measures and other measures as determined by the Public Works Department to be necessary for the proposed project:

- *Cover all trucks hauling construction and demolition debris from the site;*
- *Water all exposed or disturbed soil surfaces at least twice daily;*
- *Use watering to control dust generation during demolition of structures or break-up of pavement;*
- *Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved parking areas and staging areas;*
- *Sweep daily (with water sweepers) all paved parking areas and staging areas;*
- *Provide daily clean-up of mud and dirt carried onto paved streets from the site;*
- *Enclose, cover, water twice daily or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.);*
- *Limit traffic speeds on unpaved roads to 15 mph;*
- *Install sandbags or other erosion control measures to prevent silt runoff to public roadways;*
- *Replant vegetation in disturbed areas as quickly as possible;*
- *Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site;*
- *Install wind breaks, or plant trees/vegetative wind breaks at windward side(s) or construction areas;*
- *Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph;*
- *Limit the area subject to excavation, grading, and other construction activity at any one time;*
- *Unnecessary idling of construction equipment shall be avoided;*
- *Equipment engines shall be maintained in proper working condition per manufacturers' specifications;*
- *During periods of heavier air pollution (May to October), the construction period shall be lengthened to minimize the amount of equipment operating at one time;*
- *Where feasible, the construction equipment shall use cleaner fuels, add-on control devices and conversion to cleaner engines.*

Mitigation Measure AQ-2*: To the extent feasible, construction employees shall be hired from local populations, since it is more likely that they have been previously exposed to the fungus which causes Valley Fever and are therefore immune.*

Mitigation Measure AQ-3*: During periods of high dust in the grading phase, crews must use National Institute for Occupational Safety and Health (NIOSH) approved N95 masks or better or other more stringent measures in accordance with the California Division of Occupational Safety and Health regulations.*

Mitigation Measure AQ-4*: The operator cab of area grading and construction equipment must be enclosed and air-conditioned.*

Response e): Less than Significant. Offensive odors rarely cause any physical harm; however, they still can be very unpleasant, leading to considerable distress among the public, and often generate citizen complaints to local governments and regulatory agencies. Major sources of odor-related complaints by the general public commonly include wastewater treatment facilities, landfill disposal facilities, food processing facilities, agricultural activities, and various industrial activities (e.g., petroleum refineries, chemical and fiberglass manufacturing, painting/ coating operations, landfills, and transfer stations).

According to the CARB's Handbook, some of the most common sources of odor complaints received by local air districts are sewage treatment plants, landfills, recycling facilities, waste transfer stations, petroleum refineries, biomass operations, auto body shops, coating operations, fiberglass manufacturing, foundries, rendering plants, and livestock operations. The project does not propose any of the aforementioned uses. Additionally, BAAQMD presents odor screening distances for a variety of land uses. The project does not propose any of the uses which require screening distances to be met.

Operation of the proposed project would not generate objectionable odors. The project includes three drive-through lanes: one for Chick-Fil-A, one for an unidentified restaurant, and one for an unidentified commercial tenant. Occasional mild odors may be generated from the restaurant drive-through areas. Although some receptors may find these restaurant odors as unfavorable, the odors would not be considered objectionable odors which would affect a substantial number of people. The proposed project would result in development of a regional commercial development, which is compatible with the existing and future surrounding land uses. Commercial land uses are not typically associated with the creation of substantial objectionable odors. Occasional mild odors may also be generated during landscaping maintenance (equipment exhaust), but the project would not otherwise generate odors.

Diesel fumes from construction equipment and delivery trucks are often found to be objectionable; however, construction impacts of the proposed project would be temporary and diesel emissions would be temporary and regulated. This is a **less than significant** impact and no mitigation is required.

IV. BIOLOGICAL RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*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 Game or U.S. Fish and Wildlife Service?		X		
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 Game or US Fish and Wildlife Service?				X
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?			X	

BACKGROUND

The following section is based upon the Planning Survey Report (PSR) prepared for the project site by Olberding Environmental, Inc. (August 2017) in order to comply with and receive Permit coverage under the East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan (ECCC HCP/NCCP). The full report is included as Appendix B. A Biological Resources Analysis Report was also prepared for the project site by Olberding Environmental, Inc. (June 2017). The full report is included as Appendix C.

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant with Mitigation. The property consists of ruderal annual grassland that has been disked recently. Vegetation observed on the project site includes: wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), bristly ox-tongue (*Helminthotheca echioides*), Canadian horseweed (*Conza canadensis*), black mustard (*Brassica nigra*), field bindweed (*Convolvulus arvensis*), Russian thistle (*Kali tragus*), artichoke thistle (*Cynara cardunculus*), wild

radish (*Raphanus raphanistrum*), doveweed (*Croton setiger*), and narrow leaf milkweed (*Asclepias fascicularis*). No trees or shrubs are located on-site. Due to recent disking, the site contains no high-quality habitat for covered and no-take plant species.

Special Status Plant Species

On May 24, 2017, Olberding Environmental, Inc. conducted a field reconnaissance survey of the project site in order to identify sensitive plant and wildlife species, sensitive habitats, and biological constraints potentially occurring on the site. All regions of the project site were examined by walking line transects through the entire site, and by closely examining the microhabitats that could potentially support special-status plants. No special status, covered or no-take plant species were observed.

A query of the California Natural Diversity Database (CNDDB) showed that two special-status plant species have a moderate potential to occur on the project site. The Congdon's tarplant (*Centromadia parryi ssp. congdonii*), and big tarplant (*Blepharizonia plumosa*) were identified as having the potential to occur on the site based on the presence of suitable habitat for the two species. Suitable habitat for these plant species occur throughout the project site within the non-native annual grassland. Big tarplant is a covered and no-take plant species listed in the ECCC HCP/NCCP. Congdon's tarplant is not a covered and no-take plant species. Although neither plant species were observed on-site, a rare plant survey of the project site would be required prior to construction.

Special Status Wildlife Species

Based upon the onsite habitat, eight covered bird species and two covered mammal species may occur on the project site. Each of these species is discussed below. The project site and surroundings were surveyed for general wildlife, raptors, and burrowing owls on May 24, 2017 by Olberding Environmental, Inc. staff. The following presents the results of that survey for each species triggered by the ruderal land cover type.

Western Burrowing Owl

The CNDDB lists a total of 51 occurrences of this species within five miles of the project site. A total of 11 occurrences were made within one mile of the project site. According to CNDDB, Occurrence #1870 is directly across the street from the project site. The occurrence notes that three adults were identified just east of the project site in May 2012 and one adult was observed during the time of the survey in this location.

Burrowing owls are known to occur within disked fields if small mammal burrows are present. The project site has been recently disked and houses a decent sized ground squirrel population on site, suitable to host burrowing owl(s). During the May 2017 survey of the project site, burrowing owls were not observed on the project site; however, given the information above, there is a high potential for burrowing owl to occur on the project site in a foraging and nesting capacity.

Swainson's Hawk

The CNDDB lists a total of 14 occurrences of this species within five miles of the project site. One of these occurrences occurred within one mile of the project site. The closest occurrence (Occurrence #1618) occurred in April 2007, approximately 1.5 mile east of the project site located on the southeast corner of Heidorn Ranch Road and Sand Creek Road in Brentwood. At this occurrence location, a nest was observed in a large valley oak tree. The project site does not have any suitable nesting trees on site or nearby; however, foraging opportunities exist across the project site. Therefore, Swainson's hawk has a moderate potential to occur on the project site in a foraging capacity only.

Loggerhead Shrike

The CNDDB lists one occurrence of the loggerhead shrike within five miles of the project site. The occurrence (Occurrence #3) was observed March 2003 northeast of the project site near the intersection of SR 4 and Cypress Road located within an ornamental tree. The project site has suitable grassland habitat for foraging habitat, but no suitable trees or shrubs for breeding habitat. For these reasons, the loggerhead shrike has a high potential to occur on the project site in a foraging capacity only.

White-Tailed Kite

The CNDDB lists three occurrences (Occurrence #76, 87 & 113) of white-tailed kite within the vicinity of the project site. The project site does not have any suitable nesting trees on site or nearby; however, foraging opportunities exist across the project site. Therefore, the white-tailed kite has high potential to occur on the project site in a foraging capacity only.

Red Shouldered Hawk

The CNDDB does not list the red-shouldered hawk as occurring within the vicinity of the project site. However, foraging opportunities occur throughout the project site. Therefore, the red-shouldered hawk has high potential to occur on the project site in a foraging capacity only.

Red-Tailed Hawk

The CNDDB does not list red-tailed hawk as occurring within the vicinity of the project site. However, foraging opportunities occur throughout the project site. Therefore, the red-tailed hawk has high potential to occur on the project site in a foraging capacity only.

American Kestrel

The CNDDB does not list the American kestrel as occurring within the vicinity of the project site. However, foraging opportunities occur throughout the project site. Therefore, the American kestrel has high potential to occur on the project site in a foraging capacity only.

San Joaquin Kit Fox

A large band of potential habitat in the southwestern corner of the Brentwood quadrangle map is indicated as a corridor in which the San Joaquin kit fox may occur. On the Antioch South quadrangle map, this zone continues northwest and is located over two and a half miles south of the project site. The project site lies well outside the band of potential San Joaquin kit fox habitat identified by the CNDDB. The corridor that has been identified as potential habitat for the San Joaquin kit fox was developed using a one-mile radius around specific point locations where scat or a den site was documented. The composite of all the point locations for San Joaquin kit fox overlaid together during a 20-year period combined to define the corridor that has been identified by the CNDDB. The goal was to identify a habitat zone for San Joaquin kit fox rather than unrelated point locations, as the San Joaquin kit fox is highly mobile and will use a larger area than what a point location would represent.

The CNDDB lists two occurrences (Occurrence #569 & 936) within five miles of the project site. However, due to the surrounding residential and commercial developments, the San Joaquin kit fox is presumed absent from the project site.

Special Status Bats

The CNDDB lists one occurrence (Occurrence #66) of the western red bat occurring within the vicinity of the project site. Bats may use the project site in a foraging capacity due to suitable open grassland habitat, but is unlikely due to the proximity of the freeway. Bats are not likely to occur in a roosting capacity as there are no suitable trees or structures on site. No additional surveys for bats are needed.

Conclusion

Due to the disturbed nature of the project site's ruderal grassland cover type, suitable habitat does not exist to support special-status plant species known to occur within the ruderal grassland cover type of East Contra Costa County. While the presence of special-status wildlife species is relatively unlikely, based upon the current land cover types found onsite, in accordance with the ECCC HCP/NCCP, wildlife species surveys are required to determine whether any special-status wildlife species are occupying the project site prior to initiating onsite ground disturbance. If the necessary preconstruction surveys are not carried out, the project could result in a potentially significant 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 U.S. Fish and Wildlife Service (USFWS), or the CDFW. The following mitigation measures would reduce the above-stated special-status wildlife impacts to a **less than significant** level.

Mitigation Measure(s)

Mitigation Measure BIO-1*: The project is receiving permit coverage under the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan ("ECCC HCP/NCCP" or "the Plan"). All applicable avoidance, minimization and mitigation measures of the ECCC HCP/NCCP shall be imposed on the project. The project shall receive take authorization under the City's*

incidental take permit from the United States Fish and Wildlife Service (USFWS) issued pursuant to Section 10(a)(1)(B) of the Federal Endangered Species Act (permit number: TE 160958-0) and the City's incidental take permit from the California Department of Fish and Wildlife (CDFW) issued pursuant to California Fish and Wildlife Code Section 2835 (permit number 2835-2007-01-03)..

Mitigation Measure BIO-2: *Prior to the issuance of grading or construction permits for the project site and in accordance with the final ECCC HCP/NCCP Planning Survey Report application dated August 11, 2017, the applicant shall pay the required ECCC HCP/NCCP Development Fee of $112,395.48 for 7.64 acres of impact (the fee is subject to annual adjustments, in accordance with Chapter 9.3.1 of the ECCC HCP/NCCP) and receive a Certificate of Coverage from the City of Brentwood. The Certificate of Coverage shall confirm that the fee has been received, that other ECCC HCP/NCCP requirements have been met or shall be performed, and shall authorize take of covered species.*

Mitigation Measure BIO-3: *Prior to the issuance of grading or construction permits for the project site and in accordance with the final ECCC HCP/NCCP Planning Survey Report application dated August 11, 2017, the applicant shall submit a construction monitoring plan to the East Contra Costa County Habitat Conservancy (the Plan's Implementing Entity) for review and approval.*

Western Burrowing Owl

Mitigation Measure BIO-4: *Prior to any ground disturbance related to covered activities, a USFWS/CDFW-approved biologist shall conduct a preconstruction survey in areas identified in the planning surveys as having potential burrowing owl habitat. The surveys shall establish the presence or absence of Western Burrowing Owl and/or habitat features and evaluate use by owls in accordance with CDFW survey guidelines (California Department of Fish and Game 1995).*

On the parcel where the activity is proposed, the biologist shall survey the proposed disturbance footprint and a 500-foot radius from the perimeter of the proposed footprint to identify burrows and owls. Adjacent parcels under different land ownership shall not be surveyed. Surveys should take place near sunrise or sunset in accordance with CDFW guidelines. All burrows or burrowing owls shall be identified and mapped. Surveys shall take place no more than 30 days prior to construction. During the breeding season (February 1–August 31), surveys shall document whether burrowing owls are nesting in or directly adjacent to disturbance areas. During the nonbreeding season (September 1–January 31), surveys shall document whether burrowing owls are using habitat in or directly adjacent to any disturbance area. Survey results shall be valid only for the season (breeding or nonbreeding) during which the survey is conducted. Copies of both surveys shall be submitted to ECCC Habitat Conservancy and the City for review and approval.

Mitigation Measure BIO-5: *If burrowing owls are found during the breeding season (February 1–August 31), the project proponent shall avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young. Avoidance shall include establishment of a non- disturbance buffer zone (described below). Construction may occur during the breeding season if a qualified biologist monitors the nest and determines that the birds have not begun egg-laying and incubation or that the juveniles from the occupied burrows have fledged. During the nonbreeding season (September 1–January 31), the*

project proponent should avoid the owls and the burrows they are using, if possible. Avoidance shall include the establishment of a buffer zone (described below).

During the breeding season, buffer zones of at least 250 feet in which no construction activities can occur shall be established around each occupied burrow (nest site). Buffer zones of 160 feet shall be established around each burrow being used during the nonbreeding season. The buffers shall be delineated by highly visible, temporary construction fencing.

If occupied burrows for burrowing owls are not avoided, passive relocation shall be implemented. Owls should be excluded from burrows in the immediate impact zone and within a 160-foot buffer zone by installing one-way doors in burrow entrances. These doors should be in place for 48 hours prior to excavation. The project area should be monitored daily for a week to confirm that the owl has abandoned the burrow. Whenever possible burrows should be excavated using hand tools and refilled to prevent reoccupation (California Department of Fish and Game 1995). Plastic tubing or a similar structure should be inserted in the tunnels during excavation to maintain an escape route for any owls inside the burrow.

Swainson's Hawk

Mitigation Measure BIO-6: *Prior to any ground disturbance related to covered activities that occurs during the nesting season (March 15–September 15), a qualified biologist shall conduct a preconstruction survey no more than 1 month prior to construction to establish whether Swainson's hawk nests within 1,000 feet of the project site are occupied. If potentially occupied nests within 1,000 feet of the project site are found, then their occupancy shall be determined by observation from public roads or by observations of Swainson's hawk activity (e.g., foraging) near the project site. If nests are occupied, minimization measures and construction monitoring are required (see below). A copy of the preconstruction survey shall be submitted to the ECCC Habitat Conservancy and the City for review and approval.*

Mitigation Measure BIO-7: *During the Swainson's hawk nesting season (March 15–September 15), covered activities within 1,000 feet of occupied nests or nests under construction shall be prohibited to prevent nest abandonment. If site-specific conditions or the nature of the covered activity (e.g., steep topography, dense vegetation, limited activities) indicate that a smaller buffer could be used, the Implementing Entity shall coordinate with California Department of Fish and Wildlife (CDFW)/United States Fish and Wildlife (USFWS) to determine the appropriate buffer size. If young fledge prior to September 15, covered activities can proceed normally. If the active nest site is shielded from view and noise from the project site by other development, topography, or other features, the project applicant can apply to the ECCC Habitat Conservancy and the City for a waiver of this avoidance measure. Any waiver must also be approved by USFWS and CDFW. While the nest is occupied, activities outside the buffer can take place. No trees shall be removed during project construction.*

All active nest trees shall be preserved on site, if feasible. Nest trees, including non-native trees, lost to covered activities shall be mitigated by the project proponent according to the requirements below.

Mitigation Measure BIO-8: *The loss of non-riparian Swainson's hawk nest trees shall be mitigated by the project proponent by:*

If feasible on-site, planting 15 saplings for every tree lost with the objective of having at least 5 mature trees established for every tree lost according to the requirements listed below.

AND either

1. *Pay the Implementing Entity an additional fee to purchase, plant, maintain, and monitor 15 saplings on the HCP/NCCP Preserve System for every tree lost according to the requirements listed below, OR*
2. *The project proponent shall plant, maintain, and monitor 15 saplings for every tree lost at a site to be approved by the Implementing Entity (e.g., within an HCP/NCCP Preserve or existing open space linked to HCP/NCCP preserves), according to the requirements listed below.*

The following requirements shall be met for all planting options:

- *Tree survival shall be monitored at least annually for 5 years, then every other year until year 12. All trees lost during the first 5 years shall be replaced. Success shall be reached at the end of 12 years if at least 5 trees per tree lost survive without supplemental irrigation or protection from herbivory. Trees must also survive for at least three years without irrigation.*
- *Irrigation and fencing to protect from deer and other herbivores may be needed for the first several years to ensure maximum tree survival.*
- *Native trees suitable for this site should be planted. When site conditions permit, a variety of native trees shall be planted for each tree lost to provide trees with different growth rates, maturation, and life span, and to provide a variety of tree canopy structures for Swainson's hawk. This variety shall help to ensure that nest trees shall be available in the short term (5-10 years for cottonwoods and willows) and in the long term (e.g., Valley oak, sycamore). This shall also minimize the temporal loss of nest trees.*
- *Riparian woodland restoration conducted as a result of covered activities (i.e., loss of riparian woodland) can be used to offset the nest tree planting requirement above, if the nest trees are riparian species.*
- *Whenever feasible and when site conditions permit, trees should be planted in clumps together or with existing trees to provide larger areas of suitable nesting habitat and to create a natural buffer between nest trees and adjacent development (if plantings occur on the development site).*
- *Whenever feasible, plantings on the site should occur closest to suitable foraging habitat outside the UDA.*
- *Trees planted in the HCP/NCCP preserves or other approved offsite location shall occur within the known range of Swainson's hawk in the inventory area and as close as possible to high-quality foraging habitat.*

Covered Migratory Birds and Other Protected Raptors

Mitigation Measure BIO-9: *Prior to implementation of covered activities, a qualified biologist shall conduct a preconstruction survey to establish whether nests of golden eagles are occupied. If nests are occupied, minimization requirements and construction monitoring shall be required.*

Mitigation Measure BIO-10: *Covered activities shall be prohibited within 0.5 mile of active nests. Nests can be built and active at almost any time of the year, although mating and egg incubation occurs late January through August, with peak activity in March through July. If site-specific conditions or the nature of the covered activity (e.g., steep topography, dense vegetation, limited activities) indicate that a smaller buffer could be appropriate or that a larger buffer should be implemented, the ECCC Habitat Conservancy and the City shall coordinate with CDFW/USFWS to determine the appropriate buffer size.*

Mitigation Measure BIO-11: *Construction monitoring shall focus on ensuring that no covered activities occur within the buffer zone established around an active nest. Although no known golden eagle nest sites occur within or near the ULL, covered activities inside and outside of the Preserve System have the potential to disturb golden eagle nest sites. Construction monitoring shall ensure that direct effects to golden eagles are minimized*

Responses b), c): Less than Significant. Riparian habitats are described as the land and vegetation that is situated along the bank of a stream or river. Wetlands are areas where water covers the soil, or is present either at or near the surface of the soil all year or for varying periods of time during the year. Wetlands usually must possess hydrophytic vegetation (i.e., plants adapted to inundated or saturated conditions), wetland hydrology (e.g., topographic low areas, exposed water tables, stream channels), and hydric soils (i.e., soils that are periodically or permanently saturated, inundated or flooded). Vernal pools are seasonal depressional wetlands that are covered by shallow water for variable periods from winter to spring, but may be completely dry for most of the summer and fall. Vernal pools range in size from small puddles to shallow lakes and are usually found in a gently sloping plain of grassland.

Results of the biological resource analysis survey conducted by Olberding Environmental on May 24, 2017, identified one small roadside ditch on the northern and eastern boundary of the project site that may be considered jurisdictional by the U.S. Army Corps of Engineers (USACE). During the site survey, there was no indication of Wetland vegetation and there were no scour marks to consider the ditch to be Waters of the U.S. According to the PSR for the project site, the site does not contain any potential jurisdictional Waters of the U.S. or wetlands of any type. Therefore, no USACE or Regional Water Quality Control Board (RWQCB) permits would be required relating to jurisdictional waters.

There is no aquatic habitat at the site. As a result, the implementation of the proposed project would have a **less than significant** impact to any riparian habitat, seasonal wetlands, or vernal pools as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means.

Response d): Less than Significant. While the proposed project would result in substantial development of the project site, the site is adjacent to existing developments. The project site and the open fields to the south provide limited opportunities for native, resident, or migratory wildlife to use as a movement corridor. The CNDDB record search did not reveal any documented wildlife corridors or wildlife nursery sites on or adjacent to the project site. Furthermore, the field survey did not reveal any wildlife nursery sites on or adjacent to the project site.

Given that the project site provides limited habitat due to recent site disking, impacts related to the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impeding the use of wildlife nursery sites are considered **less than significant**.

Responses e), f): Less than Significant. Trees are not located on the project site. Therefore, a tree permit would not be required.

The site is within the boundaries of the ECCC HCP/NCCP. In July 2007 the ECCC HCP/NCCP was adopted by Contra Costa County, the City of Brentwood, other member cities, the USFWS and the CDFW. The ECCC HCP/NCCP provides guidance for the mitigation of impacts to covered species. Mitigation of impacts is accomplished through the payment of a Development Fee. The Development Fee requires payment based on a cost per acre for all acres converted to non-habitat with the cost per acre based on the quality of the habitat converted. The fees are used to acquire higher value habitats in preserved areas and to fund their restoration and management. Because the City of Brentwood is a signatory to the ECCC HCP/NCCP, anticipated project impacts could be mitigated through the payment of Development Impact fees to the ECCC HCP/NCCP Conservancy. The proposed project would comply with the ECCC HCP/NCCP requirements regarding special-status species, and land conversion, and the applicant would be required to pay the associated Development Fee, to the Conservancy, per *Mitigation Measure BIO-2.* Therefore, the proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan, resulting in an impact that is **less than significant.**

V. CULTURAL RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?			X	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?		X		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		
d) Disturb any human remains, including those interred outside of formal cemeteries?		X		

BACKGROUND

An Archaeological Survey and Cultural Resources Assessment was completed by WSA, Inc. in May of 2017. The full report is included as Appendix D.

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. The project site is currently vacant and does not contain any structures.

The 2014 Brentwood General Plan Update EIR identifies 24 historic properties in the Brentwood Planning Area. None of the 24 properties listed are within the proposed project site.[3] Since there are no existing buildings on the project site, there is nothing on that site that could be considered a "historical resource" under Section 15064.5 in the CEQA handbook.

For the above-stated reasons, development of the proposed project would have a **less than significant** impact on historical resources.

Responses b), c), d): Less than Significant with Mitigation. A record search was conducted for the project site and surrounding area through the Northwest Information Center (NWIC) of the California Historical Resources Information System on April 13, 2017 (NWIC file No.: 16-1622). There are no known sites in the project area or within a ¼-mile radius of the project area. Three previous studies have been conducted within the project area, and eight previous studies have been conducted within ¼-mile of the project area.

Given that no known archaeological resources are associated with the project site, the subject parcel is considered of low archaeological sensitivity for prehistoric cultural resources. However, ground-disturbing activities may have the potential to uncover buried cultural deposits. As a

[3] City of Brentwood. *2014 Brentwood General Plan Update EIR* [pg. 3.5-7]. July 22, 2014.

result, during construction and excavation activities, unknown archaeological resources, including human bone, may be uncovered, resulting in a potentially significant impact.

Implementation of the following mitigation measures would reduce the construction-related impacts to a **less than significant** level.

Mitigation Measure(s)

Mitigation Measure CUL-1: *Prior to grading permit issuance, the developer shall submit plans to the Community Development Department for review and approval which indicate (via notation on the improvement plans) that if historic and/or cultural resources are encountered during site grading or other site work, all such work shall be halted immediately within the area of discovery and the developer shall immediately notify the Community Development Department of the discovery. In such case, the developer shall be required, at their own expense, to retain the services of a qualified archaeologist for the purpose of recording, protecting, or curating the discovery as appropriate. The archaeologist shall be required to submit to the Community Development Department for review and approval a report of the findings and method of curation or protection of the resources. Further grading or site work within the area of discovery would not be allowed until the preceding work has occurred.*

Mitigation Measure CUL-2: *Pursuant to State Health and Safety Code §7050.5 (c) State Public Resources Code §5097.98, if human bone or bone of unknown origin is found during construction, all work shall stop in the vicinity of the find and the Contra Costa County Coroner shall be contacted immediately. If the remains are determined to be Native American, the coroner shall notify the Native American Heritage Commission who shall notify the person believed to be the most likely descendant. The most likely descendant shall work with the contractor to develop a program for re-internment of the human remains and any associated artifacts. Additional work is not to take place within the immediate vicinity of the find until the identified appropriate actions have been implemented.*

VI. GEOLOGY AND SOILS -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation*	*Less Than Significant Impact*	*No Impact*
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.		X		
ii) Strong seismic ground shaking?		X		
iii) Seismic-related ground failure, including liquefaction?		X		
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?		X		
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?		X		
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?		X		
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X

BACKGROUND

The following section is based upon the Geotechnical Investigation that was completed for the project site by LAI & Associates in May 2017. As part of the field work performed on May 1, 2017, six soil borings were drilled to depths of between 6.5 to 46.5 feet below the existing ground surface. Materials encountered in each boring were visually classified in the field and logs were recorded. Corrosivity tests and Atterberg limit tests were performed on a selected sample. The full report is included as Appendix E.

RESPONSES TO CHECKLIST QUESTIONS

Responses a.i), a.ii): Less than Significant with Mitigation. Figure 8 shows the earthquake faults in the vicinity of the project site. As shown in the figure, the site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone, and known surface expression of active faults does not exist within the site. However, the site is located within a seismically active

region. According to the USGS Interactive Fault Map, two of the nearest active faults include the Greenville Fault and the Antioch Fault, located about 8.9 miles southwest and 2.9 miles west, respectively. The Greenville Fault is considered to be capable of a moment magnitude earthquake of 6.8 to 7.0.

Geologic Hazards

Potential seismic hazards resulting from a nearby moderate to major earthquake could generally be classified as primary and secondary. The primary seismic hazard is ground rupture, also called surface faulting. The common secondary seismic hazards include ground shaking and ground lurching.

Ground Rupture

Because the property does not have known active faults crossing the site, and the site is not located within an Earthquake Fault Special Study Zone, ground rupture is unlikely at the subject property.

Ground Shaking

An earthquake of moderate to high magnitude generated within the San Francisco Bay region could cause considerable ground shaking at the site, similar to that which has occurred in the past. The project would be built using standard engineering and seismic safety design techniques. Building design at the project site would be completed in conformance with the recommendations of the geotechnical investigation required by Mitigation Measure GEO-2 below, as reviewed and approved by the City of Brentwood Building Division. The structures would meet the requirements of applicable Building and Fire Codes, including the 2013 California Building Code (CBC), as adopted or updated by the City of Brentwood. Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead-and-live loads. The code-prescribed lateral forces are generally considered to be substantially smaller than the comparable forces that would be associated with a major earthquake. Therefore, structures would be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage.

Ground Lurching

Ground lurching is a result of the rolling motion imparted to the ground surface during energy released by an earthquake. Such rolling motion could cause ground cracks to form in weaker soils. The potential for the formation of these cracks is considered greater at contacts between deep alluvium and bedrock. Such an occurrence is possible at the site as in other locations in the Bay Area, but based on the site location, the offset is expected to be very minor.

Conclusion

The project site is not within an Alquist-Priolo Special Studies Zone; however, the Brentwood area is located in a seismically active zone. Active faults are located within an approximate 50-mile radius of the project site. The nearest State of California zoned, active faults are the Greenville and Antioch faults, located approximately 8.9 miles southwest and 2.9 miles west, respectively. Development of the proposed project in this seismically active zone could expose people or structures to substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault and/or strong seismic ground shaking. Therefore, a potentially significant impact could result. The City of Brentwood General Plan Action SA 1a requires the submission of geologic and soils reports for all new developments. The geologic risk areas that are determined from these studies shall have standards established and recommendations shall be incorporated into development. Implementation of the following mitigation measures would ensure the potential impacts are **less than significant.**

Mitigation Measure(s)

Mitigation Measure GEO-1*: All project buildings shall be designed in conformance with the current edition of the California Building Code (CBC).*

Mitigation Measure GEO-2: *Prior to grading permit issuance, the applicant shall submit a final geotechnical evaluation of the project site that analyzes soil stability including soil expansion, and the potential for lateral spreading, subsidence, liquefaction or collapse. The report shall identify any on site soil and seismic hazards and provide design recommendations for onsite soil and seismic conditions. The geotechnical evaluation shall be reviewed and approved by the City Engineer, Chief Building Official, and a qualified Geotechnical Engineer to ensure that all geotechnical recommendations specified in the geotechnical report are properly incorporated and utilized in the project design.*

Mitigation Measure GEO-3*: All grading and foundation plans for the development shall be designed by a Civil and Structural Engineer and reviewed and approved by the City Engineer, Chief Building Official, and a qualified Geotechnical Engineer prior to issuance of grading and building permits to ensure that all geotechnical recommendations specified in the geotechnical report are properly incorporated and utilized in the project design.*

Responses a.iii), c): Less than Significant with Mitigation. Soil liquefaction results from loss of strength during cyclic loading, such as that which is imposed by earthquakes. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded, and fine-grained sands. There is no evidence of historic ground failure due to liquefaction on the site, nor was significant earth materials that might be susceptible to liquefaction encountered during the Geotechnical Investigation. Based on the soil conditions encountered in one of the soil borings, the earth materials below groundwater consisted of mostly stiff to very stiff silty clay with low susceptibility to liquefaction hazard. Therefore, the risk of liquefaction at the site is considered to be low.

Additionally, according to the City of Brentwood General Plan Draft EIR Figure 3.6-2, the risk of liquefaction in the project vicinity is considered moderate. As discussed previously, the City of

Brentwood General Plan Action SA 1a requires the submission of geologic and soils reports for all new developments. The geologic risk areas that are determined from these studies shall have standards established and recommendations shall be incorporated into development.

Considering the low to moderate risk of liquefaction at the proposed project site, potentially significant impacts relating to soil stability are present. As stated previously, Mitigation Measure GEO-2 requires the preparation of a final geotechnical evaluation of the project site. Implementation of Mitigation Measure GEO-2 would reduce impacts to **less than significant** levels related to soil stability, and the potential result in, lateral spreading, subsidence, liquefaction or collapse.

Mitigation Measure(s)
Implement Mitigation Measure GEO-2.

Response a, iv): Less than Significant. The proposed project site is not susceptible to landslides because the area is essentially flat. This is a **less than significant** impact.

Response b): Less than Significant with Mitigation. The project site is currently vacant and undeveloped. According to the project site plans prepared for the proposed project, development of the proposed project would result in the creation of new impervious surface areas throughout the project site. The development of the project site would also cause ground disturbance of top soil. The ground disturbance would be limited to the areas proposed for grading and excavation, including the proposed driveway areas, commercial building pads, and drainage, sewer, and water infrastructure improvements. After grading and excavation, and prior to overlaying the disturbed ground surfaces with impervious surfaces and structures, the potential exists for wind and water erosion to occur, which could adversely affect downstream storm drainage facilities.

Without implementation of appropriate Best Management Practices (BMPs) related to prevention of soil erosion during construction, development of the project would result in a potentially significant impact with respect to soil erosion.

Implementation of the following mitigation measures would ensure the impact is **less than significant**.

Mitigation Measure(s)
Mitigation Measure GEO-4*: Prior to grading permit issuance, the applicant shall submit a final grading plan to the City Engineer for review and approval. If the grading plan differs significantly from the proposed grading illustrated on the approved project plans, plans that are consistent with the new revised grading plan shall be provided for review and approval by the City Engineer.*

Mitigation Measure GEO-5*: Any applicant for a grading permit shall submit an erosion control plan to the City Engineer for review and approval. The plan shall identify protective measures to be taken during construction, supplemental measures to be taken during the rainy season, the sequenced timing of grading and construction, and subsequent revegetation and landscaping work to ensure water quality in creeks and tributaries in the General Plan Area is not degraded from its present level. All protective measures shall be shown on the grading plans and specify the entity*

responsible for completing and/or monitoring the measure and include the circumstances and/or timing for implementation.

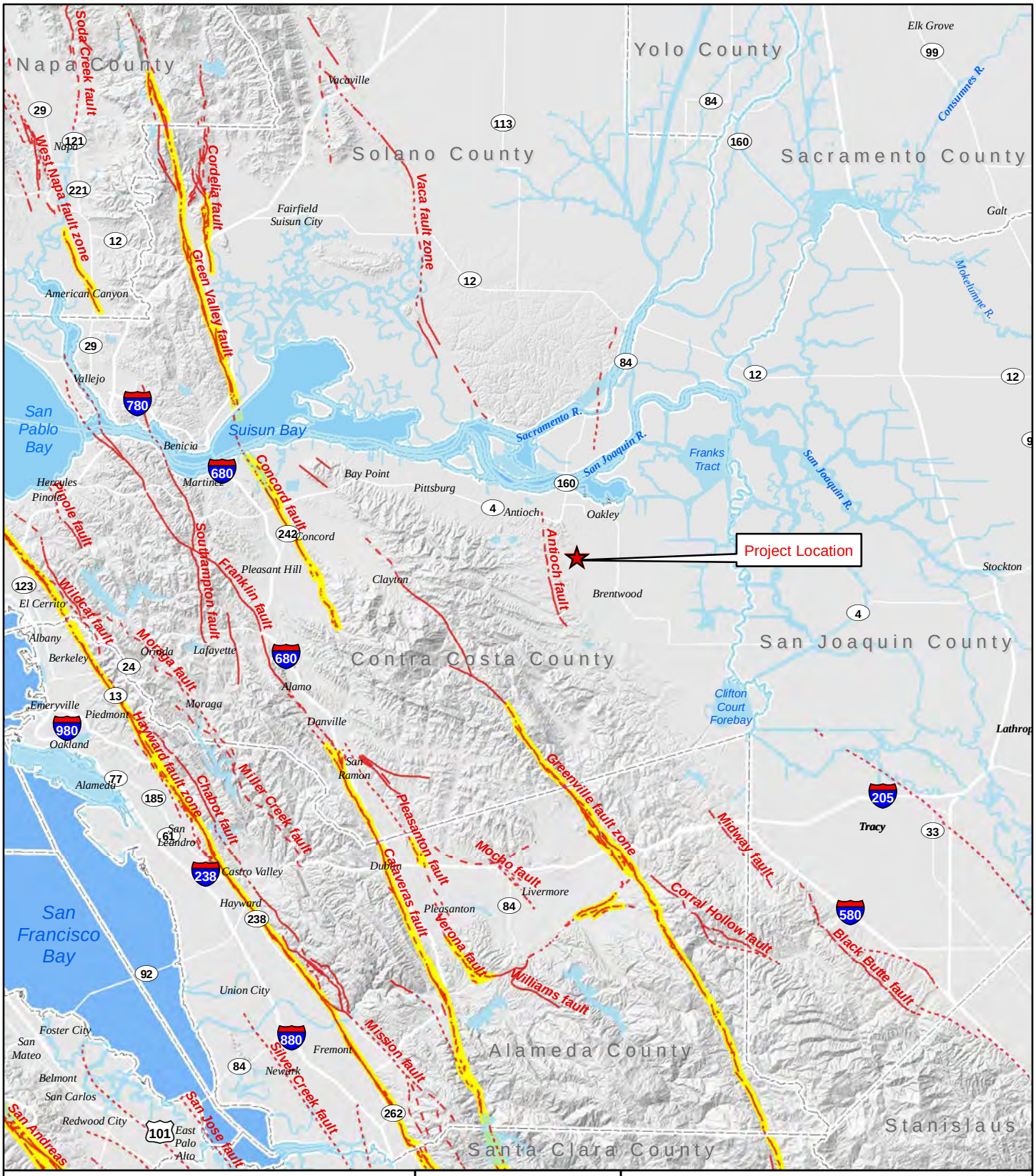
Mitigation Measure GEO-6*: Grading, soil disturbance, or compaction shall not occur during periods of rain or on ground that contains freestanding water. Soil that has been soaked and wetted by rain or any other cause shall not be compacted until completely drained and until the moisture content is within the limit approved by a Soils Engineer. Approval by a Soils Engineer shall be obtained prior to the continuance of grading operations. Confirmation of this approval shall be provided to the Engineering Division prior to commencement of grading.*

Response d): Less than Significant with Mitigation. Expansive soils shrink/swell when subjected to moisture fluctuations, which could cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. Building damage due to moisture changes in expansive soils could be reduced by appropriate grading practices and using post-tensioned slab foundations or similarly stiffened foundation systems which are designed to resist the deflections associated with soil expansion. As shown in Figure 10, the project site has high (6.0% to 8.9%) Linear Extensibility (which directly relates to the soils shrink-swell potential). Therefore, because of the potential presence of expansive soils on the site, a **potentially significant** impact could occur. However, as mentioned previously, Mitigation Measure GEO-2 requires a final geotechnical evaluation of the project site that analyzes soil stability including soil expansion. Implementation of Mitigation Measure GEO-3 ensures project soils are analyzed and design recommendations are provided by a qualified geotechnical engineer to ensure the safety and welfare of future project residence. Therefore, this impact is considered **less than significant**.

Mitigation Measure(s)

Implement Mitigation Measures GEO-2 and GEO-3.

Response e): No Impact. The project has been designed to connect to the existing City sewer system and septic systems will not be used. Therefore, **no impact** would occur related to soils incapable of adequately supporting the use of septic tanks.



Legend

Quaternary Faults

- Well-constrained
- Moderately-constrained
- Inferred

Alquist-Priolo Fault Zones

Data sources: US Geologic Survey; CalAtlas; Open Streets. Map date: October 18, 2017.

N

0 2½ 5

Miles

CITY OF BRENTWOOD - CENTER POINTE

Figure 8. Earthquake Fault Map

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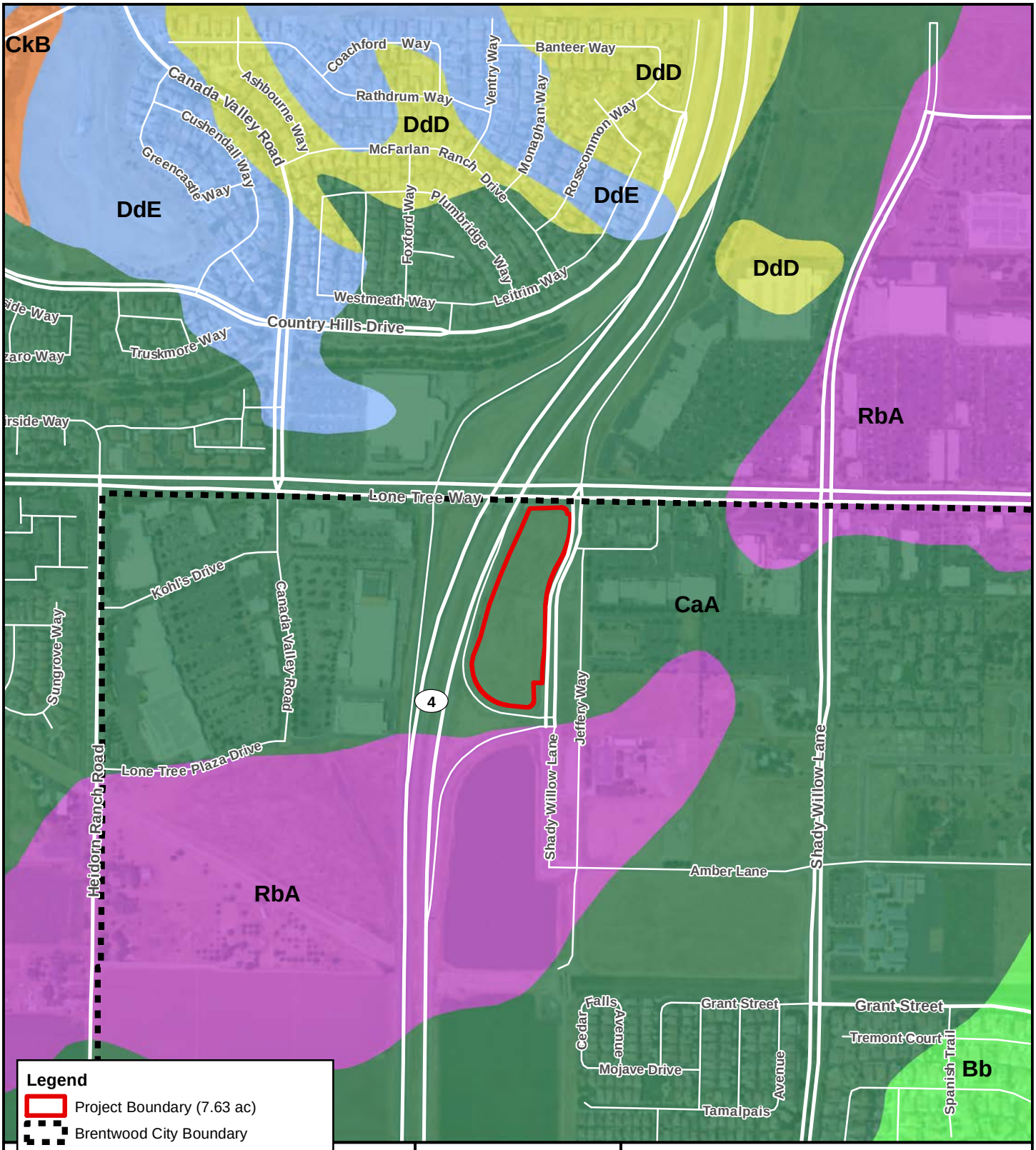

Sources: NRCS Web Soil Survey; Contra Costa County GIS; Open Streets. Map date: October 17, 2017.

CITY OF BRENTWOOD - CENTER POINTE

Figure 9. Project Site Soils

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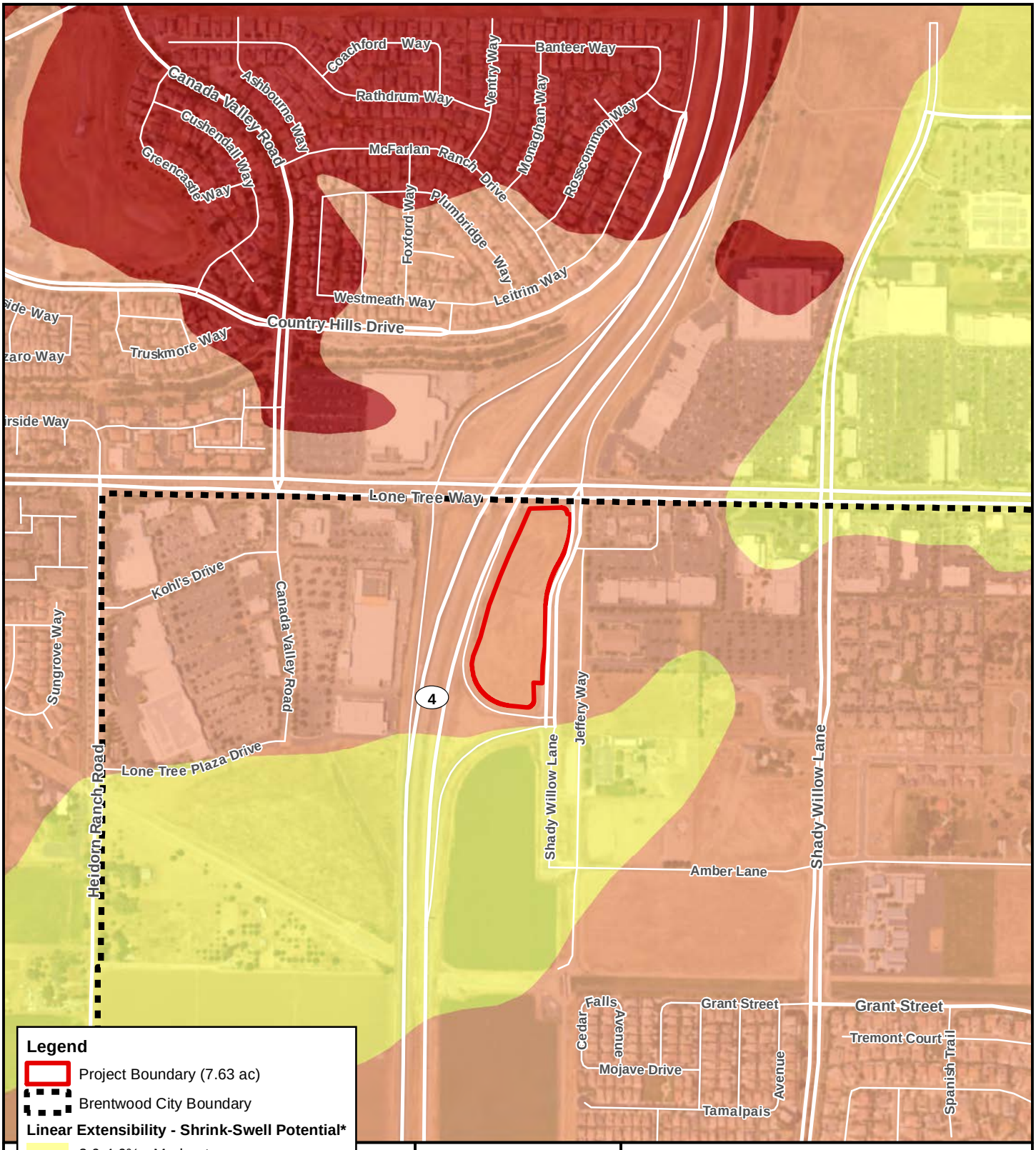

*Shrink-Swell Potential is determined by linear extensibility. Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Soils are considered to have low potential when the linear extensibility is less than 3%, moderate if 3-6%, high if 6-9%, and very high if greater than 9%.

Sources: NRCS Web Soil Survey; Contra Costa County GIS; Open Streets.
Map date: October 17, 2017.

CITY OF BRENTWOOD - CENTER POINTE

Figure 10. Shrink-Swell Potential of Soils

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XII. GREENHOUSE GAS EMISSIONS -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?			X	

RESPONSES TO CHECKLIST QUESTIONS

Implementation of the proposed project would cumulatively contribute to increases of GHG emissions that are associated with global climate change. 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). Sources of GHG emissions include area sources, mobile sources or vehicles, utilities (electricity and natural gas), water usage, wastewater generation, and the generation of solid waste. The common unit of measurement for GHG is expressed in terms of annual metric tons of CO_2 equivalents ($MTCO_2e/yr$).

The City of Brentwood General Plan EIR previously analyzed GHG emissions under worst-case conditions within (1) the existing boundaries of the City of Brentwood, (2) upon full buildout of the General Plan within the city limits, and (3) upon buildout within the City Planning Area. The City of Brentwood General Plan EIR found that, upon full buildout of the General Plan within the city limits, CO_2e emissions are projected to be 361,490.3 metric tons per year, which represents a decrease of approximately 30 percent when compared with existing conditions. This reduction is primarily expected to be due to State actions affecting vehicle and building energy efficiency, including the Low Carbon Fuel Standard (LCFS), the Pavley rule, updates to the Title 24 energy efficiency requirements, and the Renewable Portfolio Standard (RPS). The General Plan EIR found all impacts to greenhouse gases and climate change to be less than significant, and that the General Plan would be consistent with the State's GHG reduction goals established under AB 32. AB 32 was passed by the California legislature in 2006, which established a Statewide reduction goal of a reducing GHG emissions to 1990 levels by 2020. The California Air Resources Board determined this to be approximately equivalent to a reduction of 15% below emissions under a "business as usual" scenario by 2020.

The proposed project would be located on a site that was included within the General Plan full buildout scenario. Future development of the project site with commercial uses at the maximum intensity allowed under the General Plan was assumed to occur as part of the General Plan EIR analysis. Therefore, the proposed project is consistent with the assumptions and calculations utilized within the General Plan EIR, and implementation of the proposed project would not result in cumulative GHG emissions beyond the levels analyzed and disclosed in the General Plan EIR. As such, the proposed project would be consistent with the State's GHG reduction goals established under AB 32. In addition, the proposed project would not conflict with the more

recent Statewide legislation (SB 32), passed into law in 2016, which codifies a 2030 GHG emissions reduction target of 40% below by 1990 levels by 2030. The BAAQMD is currently working to incorporate the GHG reduction requirements of SB 32 into their GHG thresholds of significance.

The General Plan EIR included a large number of policies and actions related to greenhouse gases that would be applicable to the proposed project. Implementation of these policies and actions would ensure that the proposed project would be consistent with the assumptions incorporated into the General Plan EIR, and would therefore be consistent with the State's 2020 GHG reduction goals established under AB 32. In addition, the proposed project would not conflict with more recent legislation, SB 32, which establishes a Statewide GHG reduction target for 2030. With implementation of the following policies and actions, the project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and impacts associated with the generation of GHG emissions would be considered **less than significant**.

Policy COS 8-1: Improve air quality through continuing to require a development pattern that focuses growth in and around existing urbanized areas, locating new housing near places of employment, encouraging alternative modes of transportation, and requiring projects to mitigate significant air quality impacts.

Policy COS 8-5: Continue to require all construction projects and ground disturbing activities to implement BAAQMD dust control and abatement measures.

Policy COS 8-8: Encourage local businesses and industries to engage in voluntary efforts to reduce GHG emissions and energy consumption.

Policy COS 8-11: Encourage new construction to incorporate passive solar features.

Policy COS 9-1: Require all new public and privately constructed buildings to meet and comply with the most current "green" development standards in the California Code of Regulations (CCR), Title 24.

Policy COS 9-2: Support innovative and green building best management practices including, but not limited to, LEED certification for all new development, and encourage project applicants to exceed the most current "green" development standards in the California Code of Regulations (CCR), Title 24, if feasible.

Policy COS 9-5: Promote water conservation among water users.

Policy COS 9-6: Continue to require new development to incorporate water efficient fixtures into design and construction.

Policy COS 9-9: Encourage and support the use of drought-tolerant and regionally native plants in landscaping.

Policy COS 9-10: Ensure that the layout and design of new development and significant remodels encourages the use of transportation modes other than automobiles and trucks.

Policy CIR 1-3: When analyzing impacts to the circulation network created by new development or roadway improvements, consider the needs of all users, including those with disabilities, ensuring that pedestrians, bicyclists, and transit riders are considered at an equal level to automobile drivers.

Policy CIR 2-3: Require development projects to construct on-site sidewalks, paths, and trails in a manner that is consistent with the City's parks, trails, and recreation goals and policies in this General Plan and the Contra Costa County Countywide Bicycle and Pedestrian Plan, and as dictated by the location of transit stops and common pedestrian destinations.

Policy CIR 2-8: Provide secure bicycle racks in places such as the Downtown, at commercial areas, park and ride transit facilities, schools, multiple unit residential developments, and other locations where there is a concentration of residents, visitors, students, or employees.

Policy CIR 3-2: Prioritize high-density and mixed land use patterns that promote transit and pedestrian travel along transit corridors.

Policy CIR 3-3: Design developments to include features that encourage walking, bicycling, and transit use. Design features shall include bus turnouts, transit shelters and benches, and pedestrian access points between subdivisions and between adjacent related land uses.

Policy CIR 3-10: Require new development to include effective linkages to the surrounding circulation system for all modes of travel, to the extent feasible.

Policy LU 1-4: Require new development to occur in a logical and orderly manner, focusing growth on infill locations and areas designated for urbanization on the Land Use Map (Figure LU-1), and be subject to the ability to provide urban services, including paying for any needed extension of services.

Policy LU 1-5: Encourage new development to be contiguous to existing development, whenever possible.

Policy LU 2-6: Encourage new development that is convenient to bus or future passenger rail transit lines (e.g. eBART service) in order to reduce automobile dependence.

Action COS 9a: Continue to review development projects to ensure that all new public and private development complies with the California Code of Regulations (CCR), Title 24 standards as well as the energy efficiency standards established by the General Plan and the Brentwood Municipal Code.

Action COS 9e: Continue to implement Chapter 17.630 of the Brentwood Municipal Code, particularly as it relates to water conservation efforts*.*

Action CIR 3a: During the development review process, the Community Development Department shall review plans to ensure that projects include an interconnected network of streets and paths that facilitate non-auto modes for shorter trips, and disperse rather than concentrate traffic in residential neighborhoods

VIII. HAZARDS AND HAZARDOUS MATERIALS -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*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?		X		
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		X		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
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?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X

BACKGROUND

A Phase I Environmental Site Assessment (ESA) was performed for the project site by AEI Consultants in March of 2017. The Phase I ESA determined that no evidence of Recognized Environmental Conditions (RECs), Controlled RECs, or Historical RECs were encountered during the assessment. The full report is included as Appendix F.

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b): Less than Significant with Mitigation. The proposed project would place commercial uses, including a fitness center, restaurant, and other commercial and retail uses, in an area of the City that currently contains commercial and institutional land uses. Construction

and operation of the project may involve the routine transport, storage, usage, and disposal of hazardous materials.

Unknown and Undocumented Contamination

The project site has been previously used for agricultural production. Historical aerial photographs show orchard uses on the project site in 1993. Due to the existing surrounding land uses, the project site is not suitable for agricultural production or agricultural operations. Due to the potential for previous site contamination, there would be a possibility of encountering unknown and undocumented hazardous materials in the soils. The potential effects of excavating contaminated soils, if encountered, would be minimized in part by legally required safety and hazardous waste handling, storage, and transportation precautions.

Given the site's history, the potential to encounter unknown contamination would be potentially significant. Therefore, if unknown contaminated soils were encountered, the application of regulatory cleanup standards and implementation of Mitigation Measure HAZ-1 would be required. These standards and mitigation measures would protect human health and the environment during site excavation/remediation, thus minimizing excavation/remediation impacts to less than significant.

Project Construction

During project construction, small quantities of hazardous materials such as construction equipment fuels, lubricants, and hydraulic fluid would be used for construction vehicles. The storage and handling of these materials would be managed in accordance with applicable laws and regulations, which include developing project-specific hazardous materials management and spill control plans, storing incompatible hazardous materials separately, using secondary containment for hazardous materials storage, requiring the contractor to use trained personnel for hazardous materials handling, keeping spill clean-up kits available on-site, and designating appropriate sites within the construction area as refueling stations for construction vehicles.

Routine transport, storage, use, or disposal of hazardous materials during construction would not create substantial hazards to the public or the environment, and impacts would be less than significant.

Project Operation

The proposed commercial land uses do not routinely transport, use, or dispose of hazardous materials, or present a reasonably foreseeable release of hazardous materials, with the exception of common hazardous materials such as household cleaners, paint, etc. The operational phase of the proposed project does not pose a significant hazard to the public or the environment. To be operational after construction, the proposed project would be required to comply with all applicable federal, state, and local regulations, including but not limited to those provisions established by the California Occupational Safety and Health (Cal/OSHA) Regulations; the California Fire Code; RCRA; and the Contra Costa Fire Department. Therefore, long-term impacts

associated with handling, storing, and dispensing of hazardous materials would be less than significant.

Conclusion

Through compliance with existing federal, state, and local regulations, operation of the project would not result in creation of a significant hazard. However, given the site's history, further soil sampling would be required in order to analyze the potential presence of pesticides and/or heavy metals. Therefore, with implementation of the following mitigation measure, the proposed project would have a **less than significant** impact relative to this issue.

Mitigation Measure(s)

Mitigation Measure HAZ-1: *Prior to initiation of any ground disturbance activities, evenly distributed soil samples shall be conducted throughout the proposed project property for analysis of pesticides and heavy metals. The samples shall be submitted for laboratory analysis of pesticides and heavy metals per DTSC and EPA protocols. The results of the soil sampling shall be submitted for the review of the Community Development Director. If elevated levels of pesticides or heavy metals are detected during the laboratory analysis of the soils, a soil cleanup and remediation plan shall be prepared and implemented prior to the commencement of grading activities.*

Response c): Less Than Significant. The project site is located within ¼ mile of an existing school. Golden Hills Christian School is located approximately 0.20 miles east of the project site; however, the proposed project has limited potential for the routine transport, use, or disposal of hazardous materials, as discussed above in Responses a) and b). The proposed commercial uses would not involve the routine transport, use, or disposal of hazardous materials, or present a reasonably foreseeable release of hazardous materials. Therefore, the project would have a **less than significant** impact with respect to emitting hazardous emissions or handling hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school.

Response d): Less than Significant. According the California Department of Toxic Substances Control (DTSC) there are no Federal Superfund Sites, State Response Sites, or Voluntary Cleanup Sites on, or in the near vicinity of the project site. The project site is not included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5. The nearest sites listed on the DTSC EnviroStor database include:

> ***Miles-Fenell Property*** (site # 60001996). The site is located at 2200 Shady Willow Lane and 2301 & 2251 Empire Avenue in Brentwood. The site is a former ranch and was used for agricultural uses since 1915. Meritage Homes of California, Inc. has recently completed development of the property as a subdivision known as Bella Fiore. Arsenic concentrations reported at the property were evaluated and are consistent with the range of background concentrations for this area of Brentwood. The site is a Voluntary Cleanup and had a No Further Action cleanup status as of August 12, 2014.
>
> ***Empire Elementary School*** (site # 01010005). The site is located southeast of the intersection of Shady Willow Lane and Amber Lane in Brentwood. The site is

approximately 18.96 acres in area. The property has been used for agricultural purposes. In recent times, the site has been used for the cultivation of hay which was historically bailed and stacked on the site. Reports submitted indicate that the soil contained hazardous substances including toxaphene and dieldrin. Pesticides are the only hazardous materials known to have been used at the site. The property was developed into an elementary school and had a Certified cleanup status as of June 9, 2003.

Therefore, implementation of the proposed project would result in a **less than significant** impact relative to this environmental topic.

Responses e), f): No Impact. The project site is not within an airport land use plan or within two miles of an airport. The nearest airport, Funny Farm Airport, is a private airfield located approximately 5.3 miles southeast of the project site. Therefore, implementation of the proposed project would result in **no impact** to this environmental topic.

Response g): Less than Significant. The Brentwood General Plan currently designates the proposed project site for MUPT uses. The MUPT designation identifies an area which, because of its strategic location, access, and visibility to SR 4, shall be developed predominately with jobs-generating and commercial uses. This designation is intended to provide high-quality jobs in office, professional, research and technology, and light industry sectors, and to allow commercial uses with a regional focus. This area is envisioned to be served by mass transit (i.e., eBART) or located at or near a destination point with a regular bus route. Other uses may include integrated medium to very high density residential development and amenities, including services, restaurants, and recreation opportunities, in a pedestrian-friendly environment. Multi-family housing units will be allowed at a density of 5.1 to 30.0 units per acre, in accordance with the policy direction provided by PA-1 (there is no applicable mid-range density for this designation). A General Plan Amendment would not be required for the project. Implementation of the proposed project would not result in any substantial modifications to the existing roadway system and would not interfere with potential evacuation or response routes used by emergency response teams. Therefore, the impact would be **less than significant**.

Response h): No Impact. The site is not located within an area where wildland fires occur. The site is predominately surrounded by existing development, which has a low potential for wildland fires. Therefore, **no impact** would occur.

IX. HYDROLOGY AND WATER QUALITY -- WOULD THE PROJECT:

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***
a) Violate any water quality standards or waste discharge requirements?		X		
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?		X		
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?		X		
e) 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?		X		
f) Otherwise substantially degrade water quality?		X		
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?			X	
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			X	
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			X	
j) Inundation by seiche, tsunami, or mudflow?			X	

RESPONSES TO CHECKLIST QUESTIONS

Responses a), f): Less than Significant with Mitigation. During the early stages of construction activities, topsoil would be exposed due to grading and partial leveling of the site. After grading and leveling 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.

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. Performance Standard NDCC-13 of 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, including post-construction impacts. The City of Brentwood requires all development projects to use BMPs to treat runoff.

In summary, disturbance of the onsite soils during construction activities could result in a potentially significant impact to water quality should adequate BMPs not be incorporated during construction in accordance with SWRCB regulations.

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

Mitigation Measure(s)

Mitigation Measure HYD-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 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.*

Response b): Less than Significant. The City provides domestic, potable water to its residents using both surface water and groundwater resources. The City has nine permitted groundwater wells, seven of which are active. These seven wells provided approximately 27 percent of the potable water supplied during 2015. Brentwood is located within the Tracy Subbasin of the San Joaquin Valley Groundwater Basin. While the project would create new impervious surface areas on the 7.63-acre project site, the Tracy Subbasin comprises 345,000 acres (539 square miles); therefore, recharge of the groundwater basin within which the project site is located comes from many sources over a broad geographic area.

The project site has soils within hydrologic group "C" (Capay clay, 7.63 acres), which is indicative of a moderately high infiltration rate when thoroughly wet. Overall, the new impervious surfaces associated with the project would not cause a substantial depletion of recharge within the Tracy Subbasin. Additionally, the proposed landscape areas would provide some areas for on-site groundwater recharge. Further, except for seasonal variations resulting from recharge and pumping, water levels in most of the wells of the Tracy Sub-basin have remained stable over at least the last 10 years (as of 2010)[4].

It should be noted that the City of Brentwood has adequate water supply to meet the demands of the proposed project as well as future anticipated development allowed under the Brentwood General Plan (as is explained in detail in Section XVI, Question 'd', of this IS/MND). The project itself does not include installation of any wells, but would include connections to existing City of Brentwood water infrastructure. Therefore, the project would result in a **less than significant** impact with respect to substantially depleting groundwater supplies or interfering substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

Responses c), d), e): Less than Significant with Mitigation. 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. Known as the "C.3 Standards," new development and redevelopment projects that create or replace 10,000 or more square feet of impervious surface area must contain and treat stormwater runoff from the site. The proposed project is a C.3 regulated project and is required to include appropriate site design measures, source controls, and hydraulically-sized stormwater treatment measures.

The project site contains seven drainage management areas. According to the preliminary stormwater quality control plan for the project, seven bio-retention treatment areas would be located throughout the project site. Stormwater from the proposed project site would drain to storm drain catch basins. Low flows will percolate through the basin before being released into the stormdrain system.

A long-term maintenance plan is needed to ensure that all proposed stormwater treatment BMPs function properly. Should the proposed water quality treatment facilities not be maintained properly, a potentially significant impact could occur with respect to creating or contributing runoff water which would exceed the capacity of existing or planned stormwater drainage systems or providing substantial additional sources of polluted runoff.

Implementation of the following mitigation measures would reduce the impact to a **less than significant** level. Proper operation and maintenance of the stormwater management facility would be the responsibility of the applicant in perpetuity. The applicant would be subject to an annual fee (set by the City's standard fee schedule) to offset the cost of inspecting the site or verifying that the stormwater management facilities are being maintained.

[4] Erler & Kalinowski, Inc. City of Tracy 2010 Urban Water Management Plan. May 2011.

Mitigation Measure(s)

Mitigation Measure HYD-2: *Prior to the completion of construction the applicant shall prepare and submit, for the City's review, an acceptable Stormwater Control Operation and Maintenance Plan. In addition, prior to the sale or transfer of the site, the applicant shall be responsible for paying for the long-term maintenance of treatment facilities, and executing a Stormwater Management Facilities Operation and Maintenance Agreement and Right of Entry in the form provided by the City of Brentwood. The applicant shall accept the responsibility for maintenance of stormwater management facilities until such responsibility is transferred to another entity.*

The applicant shall submit, with the application of building permits, a draft Stormwater Facilities and Maintenance Plan, including detailed maintenance requirements and a maintenance schedule for the review and approval by the City Engineer. Typical routine maintenance consists of the following:

- *Limit the use of fertilizers and/or pesticides. Mosquito larvicides shall be applied only when absolutely necessary.*
- *Replace and amend plants and soils as necessary to insure the planters are effective and attractive. Plants must remain healthy and trimmed if overgrown. Soils must be maintained to efficiently filter the storm water.*
- *Visually inspect for ponding water to ensure that filtration is occurring.*
- *After all major storm events, inspect bubble-up risers for obstructions and remove if necessary.*
- *Continue general landscape maintenance, including pruning and cleanup throughout the year.*
- *Irrigate throughout the dry season. Irrigation shall be provided with sufficient quantity and frequency to allow plants to thrive.*
- *Excavate, clean and or replace filter media (sand, gravel, topsoil) to insure adequate infiltration rate (annually or as needed).*

Mitigation Measure HYD-3: *Design of the onsite drainage facilities shall meet with the approval of both the City Engineer and the Contra Costa County Flood Control and Water Conservation District prior to the issuance of grading permits.*

Mitigation Measure HYD-4: *Contra Costa County Flood Control and Water Conservation District drainage fees for the Drainage Area shall be paid prior to issuance of grading permits to the satisfaction of the City Engineer.*

Mitigation Measure HYD-5: *The Applicant/Developer shall ensure that the project site shall drain into a street, public drain, or approved private drain, in such a manner that un-drained depressions shall not occur. Satisfaction of this measure shall be subject to the approval of the City Engineer.*

Responses g), h), i): Less than Significant. According to the FEMA Flood Insurance Rate Map (FIRM) shown in Figure 11, the project site is not located within a designated flood zone. Additionally, as shown in Figure 12, the project site is not located within the dam inundation area for the Marsh Creek Reservoir and Dry Creek Dam. Therefore, a **less than significant** impact

would result from implementation of the proposed project with respect to this environmental topic.

Response j): Less than Significant. Tsunamis are defined as sea waves created by undersea fault displacement. A tsunami poses little danger away from shorelines; however, when a tsunami reaches the shoreline, a high swell of water breaks and washes inland with great force. Historic records of the Bay Area used by one study indicate that nineteen tsunamis were recorded in San Francisco Bay during the period of 1868-1968. Maximum wave height recorded at the Golden Gate tide gauge (where wave heights peak) was 7.4 feet. The available data indicate a standard decrease of original wave height from the Golden Gate to about half original wave height on the shoreline near Richmond, and to nil at the head of the Carquinez Strait. As Brentwood is several miles inland from the Carquinez Strait, the project site is not exposed to flooding risks from tsunamis and adverse impacts would not result. This is a **less than significant** impact.

A seiche is a long-wavelength, large-scale wave action set up in a closed body of water such as a lake or reservoir, whose destructive capacity is not as great as that of tsunamis. Seiches are known to have occurred during earthquakes, but none have been recorded in the Bay Area. In addition, the project is not located near a closed body of water. Therefore, risks from seiches and adverse impacts would not result. This is a **less than significant** impact.

Sources: FEMA National Flood Hazard Layer (Official); Map date: October 16, 2017.

CITY OF BRENTWOOD - CENTER POINTE

Figure 11. FEMA Flood Insurance Rate Map

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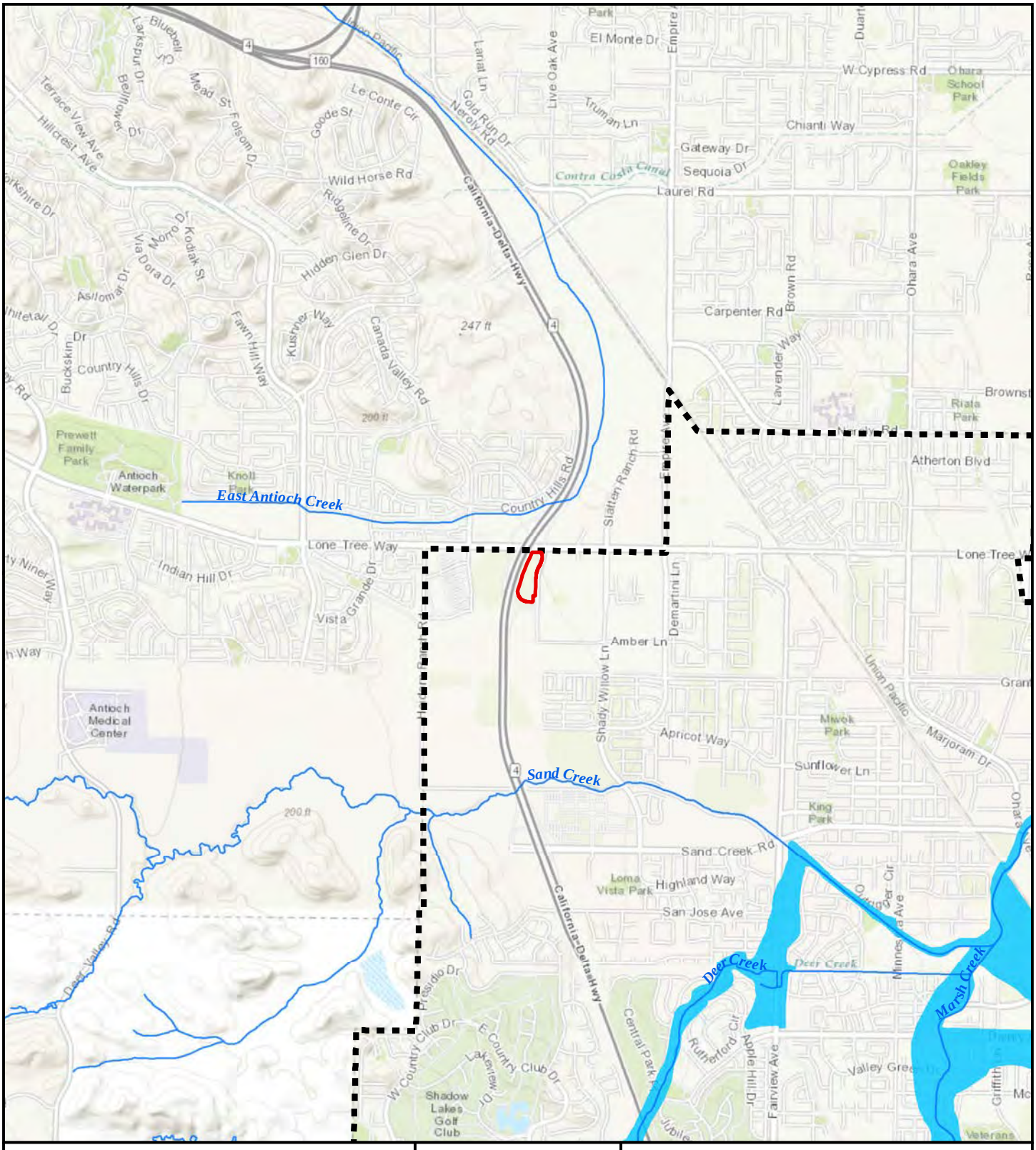

Legend

- Project Boundary (7.63 ac)
- Brentwood City Boundary
- Dam Inundation Areas:
  - Deer Creek
  - Marsh Creek

0 1,000 2,000
Feet

Sources: Dam Failure Inundation Areas, Contra Costa County; Map date: October 17, 2017.

CITY OF BRENTWOOD - CENTER POINTE

Figure 12. Dam Inundation Map

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X. LAND USE AND PLANNING -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			X	
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?			X	

RESPONSES TO CHECKLIST QUESTIONS

Response a): No Impact. As noted in the General Plan, the City of Brentwood has planned for orderly, logical development that supports compatibility among adjacent uses. The General Plan goals seek to retain the character of existing communities and ensure that future land uses are compatible with existing uses. The 7.63-acre project site is currently vacant and is surrounded by existing commercial and institutional land uses. The proposed project, which includes a fitness center, restaurant, and other commercial and retail uses, would not physically divide an established community due to the nature of the site, and its location on the northwestern city limits. Therefore, the project would have **no impact** related to physically dividing an established community.

Response b): Less than Significant. The recently adopted Brentwood General Plan identifies the project site for MUPT land uses. The MUPT designation identifies an area which, because of its strategic location, access, and visibility to SR 4, shall be developed predominately with jobs-generating and commercial uses. This designation is intended to provide high-quality jobs in office, professional, research and technology, and light industry sectors, and to allow commercial uses with a regional focus. This area is envisioned to be served by mass transit (i.e., eBART) or located at or near a destination point with a regular bus route. Other uses may include integrated medium to very high density residential development and amenities, including services, restaurants, and recreation opportunities, in a pedestrian-friendly environment. Multi-family housing units will be allowed at a density of 5.1 to 30.0 units per acre, in accordance with the policy direction provided by PA-1 (there is no applicable mid-range density for this designation).

The proposed project consists of the development of a commercial center, including a fitness center, restaurant, and other commercial and retail uses, which are within the General Plan use requirements. A General Plan Amendment would not be required for the project, and the proposed uses are consistent with the existing General Plan land use designation.

The project site is currently zoned Planned Development (PD-53) by the Brentwood Zoning Map. A Zoning Amendment is required for the project in order to adopt development standards within PD-53, Subarea D.

Overall, the project would have a **less than significant** impact related to conflicting with applicable land use plans, policies, regulations, or surrounding uses.

Response c): Less than Significant. The ECCC HCP/NCCP provides guidance for the mitigation of impacts to covered species. Mitigation of impacts is accomplished through payment of a mitigation fee. The mitigation fee requires payment based on a cost-per-acre for all acres converted to non- habitat with the cost-per-acre based on the quality of the habitat converted. The fees are used to acquire higher value habitats in preserved areas and to fund their restoration and management. Because the City of Brentwood is a signatory to the ECCC HCP/NCCP, anticipated project impacts could be mitigated through the payment of mitigation fees to the ECCC HCP/NCCP Conservancy. The proposed project would comply with the ECCC HCP/NCCP requirements regarding special-status species, and the applicant would be required to pay the associated mitigation fee to the Conservancy, per *Mitigation Measure BIO-2* above. Therefore, the proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan, resulting in a **less than significant** impact.

XI. MINERAL RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*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?			X	
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?			X	

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b): Less than Significant. The 2014 Brentwood General Plan Update EIR does not identify significant mineral resources within the area. In addition, Figure 3.6-6 in the 2014 Brentwood General Plan Update EIR does not show an existing active oil and gas well on the project site. Therefore, the impact regarding the loss of availability of a known mineral resource that would be of value to the region would be **less than significant**.

XII. NOISE -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			X	
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
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 expose people residing or working in the project area to excessive noise levels?				X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

BACKGROUND

A noise analysis for the proposed project was performed by J.C. Brennan & Associates, Inc. in October of 2017. The full report is included as Appendix G.

KEY NOISE TERMS

Acoustics The science of sound.

Ambient Noise The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.

Attenuation The reduction of noise.

A-Weighting A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.

Decibel or dB Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.

CNEL Community noise equivalent level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.

Frequency The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.

Impulsive Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.

L_{dn} Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.

L_{eq} Equivalent or energy-averaged sound level. This section provides a general description of the existing noise sources in the project vicinity, a discussion of the regulatory setting, and identifies potential noise impacts associated with the proposed project. Project impacts are evaluated relative to applicable noise level criteria and to the existing ambient noise environment.

L_{max} The highest root-mean-square (RMS) sound level measured over a given period of time.

$L_{(n)}$ The sound level exceeded a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50 percent of the time during the one hour period.

Loudness A subjective term for the sensation of the magnitude of sound.

Noise Unwanted sound.

SEL Sound exposure levels. A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.

FUNDAMENTALS OF ACOUSTICS

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 2 lists several examples of the noise levels associated with common situations.

TABLE 2: TYPICAL NOISE LEVELS

Common Outdoor Activities	*Noise Level (dBA)*	*Common Indoor Activities*
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. NOVEMBER 2009.

EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

METHODOLOGY

To predict existing noise levels due to traffic, the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. Traffic volumes for existing conditions were obtained from the traffic data prepared for the project (Fehr & Peer, 2017). Truck percentages and vehicle speeds on the local area roadways were estimated from field observations.

Traffic noise levels are predicted at a reference distance of 75-feet from the roadway centerline along each of the project-area roadway segments. Where traffic noise barriers are located along

roadway segments to shield existing residences, a -5 offset was added to the noise prediction model to account for various noise barrier heights. A -5 to dB offset was also applied where outdoor activity areas are shielded by intervening buildings. 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. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed in this report.

EXISTING AMBIENT NOISE LEVELS

Background noise level measurements were conducted on the project site on October 13, 2017. In addition, previous noise level measurements which were conducted in November 2016 for the Brentwood PA-1 Specific Plan, were also used to quantify the background noise levels. Figure 13 shows the locations of the noise measurement sites.

The sound level meters were programmed to record the hourly maximum, median, and average noise levels at each site during the survey. The maximum value, denoted L_{max}, represents the highest noise level measured during each hour. The average value, denoted L_{eq}, represents the energy average of all of the noise received by the sound level meter microphone. The median value, denoted L_{50}, represents the sound level exceeded 50 percent of the time during the monitoring period. Table 3 shows the results of the noise level measurements. Appendix G graphically shows the results of the continuous 24-hour and short-term noise measurements.

TABLE 3: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

Site	Location	Date/Time	L_{dn}	Average Measured Hourly Noise Levels, dB					
				Daytime (7am-10pm)			Nighttime (10pm-7am)		
				L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}
Continuous (24-hour) Noise Level Measurements									
A	West Side of SR 4[1]	11/9-10/2016 24-hour	71 dB	66	65	82	64	61	77
Short-Term Noise Level Measurements									
1	Central Portion of Site	10/13/2017 10:45 am	N/A	66.2	65.4	71.2	Traffic on SR 4 and Jeffery Way		
2	North Portion of Site	10/13/2017 11:20 am	N/A	67.9	66.6	80.7	Traffic on SR 4 and Lone Tree Way		
3	South Portion of Site	10/13/2017 11:45 am	N/A	63.6	63.0	68.9	Traffic on SR 4 and Jeffery Way		

NOTE: [1] NOISE LEVEL MEASUREMENTS WERE CONDUCTED FOR THE BRENTWOOD PRIORITY AREA 1 SPECIFIC PLAN.
SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2017.

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

Table 4 shows the existing traffic noise levels in terms of L_{dn} at closest sensitive receptors along each roadway segment. A complete listing of the FHWA Model input data is contained in Appendix G.

TABLE 4: EXISTING TRAFFIC NOISE LEVELS AND DISTANCES TO CONTOURS

Roadway	*Segment*	*Exterior Traffic Noise Level, dB L_{dn}*
SR 4	Lone Tree Way to Sand Creek Road	75.9
Lone Tree Way	SR 4 to Canada Valley	72.4
	SR 4 to Jeffery Way	72.1
	Jeffery Way to Slatten Ranch Center	71.7
	Slatten Ranch Center to Slatten Ranch Road	71.3
	Slatten Ranch Road to Empire Ranch Road	70.3
Jeffery Way	Lone tree Way to Driveway 1	64.5
	Driveway 3 to SR 4	64.1
	SR 4 to Amber Lane	42.3
Shady Willow Lane	Lone Tree Way to Amber Lane	58.4
	Amber Lane to Grant	57.0
Amber Lane	Shady Willow Lane to Jeffery Lane	38.9

SOURCES: FHWA-RD-77-108 WITH INPUTS FROM FEHR & PEERS, AND J.C. BRENNAN & ASSOCIATES, INC. 2017.

CRITERIA FOR ACCEPTABLE NOISE EXPOSURE

The City's Noise Element establishes noise standards in Tables N-1 and N-2, recreated below:

TABLE 5 (TABLE N-1 OF CITY OF BRENTWOOD NOISE ELEMENT): LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENT

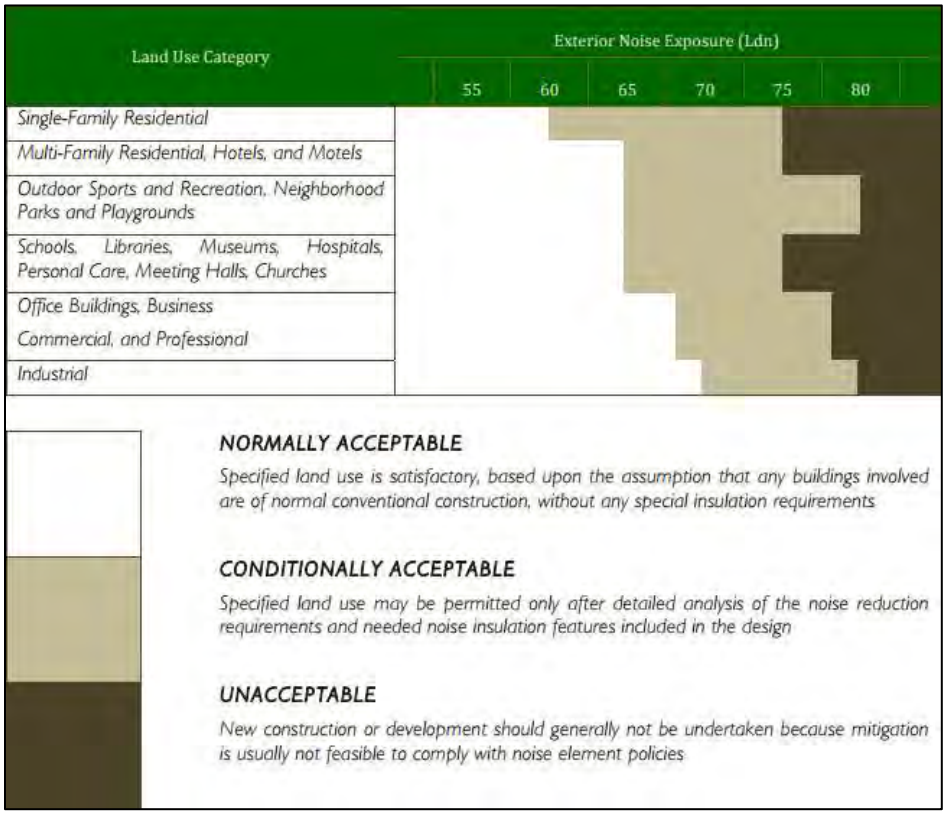

TABLE 6 (TABLE N-2 OF CITY OF BRENTWOOD NOISE ELEMENT): STATIONARY (NON-TRANSPORTATION) NOISE SOURCE STANDARDS)

Land Use Receiving the Noise	Hourly Noise-Level Descriptor	Exterior Noise-Level Standard (dBA) Daytime (7am-10pm)	Nighttime (10pm-7am)
Residential	L_{eq}	55	45
	L_{max}	70	65

Notes:

a) The residential standards apply to all properties that are zoned for residential use. The exterior noise level standard is to be applied at the property line of the receiving land use or at a designated outdoor activity area (at the discretion of the Community Development Director) of the new development. For mixed-use projects, the exterior noise level standard may be waived (at the discretion of the Community Development Director) if the project does not include a designated activity area and mitigation of property line noise is not practical. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings). The City can impose standards that are more restrictive than specified above based upon determination of existing low ambient noise levels.

b) Each of the noise levels specified above shall be lowered by 5 dBA for tonal noises characterized by a whine, screech, or hum, noises consisting primarily of speech or music, or recurring impulsive noises. In no case shall mitigation be required to a level that is less than existing ambient noise levels, as determined through measurements conducted during the same operational period as the subject noise source.

c) In situations where the existing noise level exceeds the noise levels indicated in the above table, any new noise source must include mitigation that reduces the noise level of the noise source to the existing level plus 3 dB.

d) Exterior noise exposure level not exceeding 65 dB L_{dn} is allowed along the State Route 4 corridor, the Union Pacific Railroad corridor, and arterial roadways.

Potential noise impacts will be evaluated using the following criteria:

Stationary and Non-Transportation Noise Sources

- A significant impact will occur if the project results in an exceedance of the noise level standards contained in the City's Noise Element, or the project will result in an increase in ambient noise levels by more than 3 dB, whichever is greater.

Transportation Noise Sources

- Where existing traffic noise levels are less than 60 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +5 dB L_{dn} increase in roadway noise levels will be considered significant;
- Where existing traffic noise levels range between 60 and 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +3 dB L_{dn} increase in roadway noise levels will be considered significant; and
- Where existing traffic noise levels are greater than 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +1.5 dB L_{dn} increase in roadway noise levels will be considered significant.

RESPONSES TO CHECKLIST QUESTIONS

Response a, c): Less than Significant.

Project-Generated Traffic Noise Levels at Off-Site Locations

The existing noise environment in the project area is primarily defined by the local roadway network including SR 4, Lone Tree Way, and Jeffery Way.

The project has the potential to increase traffic noise levels on the local roadway network. j.c. brennan has predicted traffic noise levels due to the project based upon three scenarios as follows: Existing vs. Existing Plus Project; Near Term vs. Near Term Plus Project; and Cumulative vs. Cumulative Plus Project. Tables 7, 8, and 9 show the changes in traffic noise levels.

TABLE 7: EXISTING AND EXISTING PLUS PROJECT TRAFFIC NOISE LEVELS

Roadway	*Segment*	*Noise Levels (L_{dn}, dB) at Nearest Sensitive Receptors*				
		Existing	*Existing + Project*	*Change*	*Criteria[1]*	*Significant?*
Lone Tree Way	SR 4 to Canada Valley	72.4	72.6	+0.2	+1.5	No
	SR 4 to Jeffery Way	72.1	72.3	+0.2	+1.5	No
	Jeffery Way to Slatten Ranch Center	71.7	72.1	+0.4	+1.5	No
	Slatten Ranch Center to Slatten Ranch Road	71.3	71.6	+0.3	+1.5	No
	Slatten Ranch Road to Empire Ranch Road	70.3	70.6	+0.3	+1.5	No
Jeffery Way	Lone tree Way to Driveway 1	64.5	65.9	+0.4	+3.0	No
	Driveway 3 to SR 4	64.1	64.3	+0.2	+3.0	No
	SR 4 to Amber Lane	42.3	42.3	0	+5.0	No
Shady Willow Lane	Lone Tree Way to Amber Lane	58.4	58.7	+0.3	+5.0	No
	Amber Lane to Grant	57.0	57.3	+0.3	+5.0	No
Amber Lane	Shady Willow Lane to Jeffery Lane	38.9	50.9	+12.0	+5.0	Potentially Yes

NOTE : [1] WHERE EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB LDN NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT.
SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2017.

Based upon Tables 7 and 8, the project could potentially result in a significant increase in traffic noise levels along Amber Lane between Shady Willow Lane and Jeffery Lane. Pioneer Elementary School is located along this roadway segment. However, this increase in traffic noise levels is due to the proposed extension of Amber Lane associated with the Brentwood PA-1 Specific Plan, and not the proposed project. This extension and resulting increased traffic noise will be analyzed in the Brentwood PA-1 Specific Plan EIR. Pioneer School will not be exposed to traffic noise levels which exceed the City of Brentwood 65 dB L_{dn} exterior noise level standard as a result of this project.

TABLE 8: NEAR TERM AND NEAR TERM PLUS PROJECT TRAFFIC NOISE LEVELS

Roadway	Segment	Noise Levels (L_{dn}, dB) at Nearest Sensitive Receptors				
		Near Term	Near Term + Project	Change	Criteria[1]	Significant?
Lone Tree Way	SR 4 to Canada Valley	73.1	73.3	+0.2	+1.5	No
	SR 4 to Jeffery Way	72.6	72.8	+0.2	+1.5	No
	Jeffery Way to Slatten Ranch Center	72.3	72.6	+0.3	+1.5	No
	Slatten Ranch Center to Slatten Ranch Road	71.8	72.1	+0.3	+1.5	No
	Slatten Ranch Road to Empire Ranch Road	70.9	71.2	+0.3	+1.5	No
Jeffery Way	Lone tree Way to Driveway 1	65.6	66.8	+1.2	+1.5	No
	Driveway 3 to SR 4	65.3	65.4	+0.1	+1.5	No
	SR 4 to Amber Lane	43.4	43.4	0	+5.0	No
Shady Willow Lane	Lone Tree Way to Amber Lane	58.9	59.1	+0.2	+5.0	No
	Amber Lane to Grant	57.7	58.0	+0.3	+5.0	No
Amber Lane	Shady Willow Lane to Jeffery Lane	40.1	52.9	+12.8	+5.0	Potentially Yes

NOTE : [1] WHERE EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB LDN NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT.
SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2017.

TABLE 9: CUMULATIVE AND CUMULATIVE PLUS PROJECT TRAFFIC NOISE LEVELS

Roadway	Segment	Noise Levels (L_{dn}, dB) at Nearest Sensitive Receptors				
		Cumula-tive	Cumula-tive + Project	Change	Criteria[1]	Significant?
Lone Tree Way	SR 4 to Canada Valley	74.3	74.5	+0.2	+1.5	No
	SR 4 to Jeffery Way	73.8	73.9	+0.1	+1.5	No
	Jeffery Way to Slatten Ranch Center	73.3	73.5	+0.2	+1.5	No
	Slatten Ranch Center to Slatten Ranch Road	72.9	73.1	+0.2	+1.5	No
	Slatten Ranch Road to Empire Ranch Road	72.0	72.2	+0.2	+1.5	No
Jeffery Way	Lone tree Way to Driveway 1	66.2	67.2	+1.0	+1.5	No
	Driveway 3 to SR 4	65.9	66.1	+0.2	+1.5	No
	SR 4 to Amber Lane	55.9	56.4	+0.5	+5.0	No
Shady Willow Lane	Lone Tree Way to Amber Lane	59.8	59.9	+0.1	+5.0	No
	Amber Lane to Grant	56.9	57.1	+0.2	+5.0	No
Amber Lane	Shady Willow Lane to Jeffery Lane	55.3	55.8	+0.5	+5.0	No

NOTE : [1] WHERE EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB LDN NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT.
SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2017.

The project will not result in significant increases in traffic noise levels at any other locations, and will not result in an exceedance of the City of Brentwood exterior noise level standards at any noise-sensitive receivers. This is a less than significant impact.

Traffic Noise Receivers at the Project Site

The project site is composed of uses which are not considered to be noise-sensitive. The uses which are proposed include the following:

- 38,000 sf fitness center (24 Hour Fitness);
- 5,400 sf commercial with drive-through (two tenants);
- 4,000 sf commercial/retail (one tenant);
- 6,510 sf restaurant (one tenant);
- 3,285 sf drive-through restaurant (one tenant); and
- 4,975 sf drive-through restaurant (Chick-Fil-A).

Generally, these types of uses are zoned in areas with high background noise levels. However, the City of Brentwood General Plan Noise Element provides a normally acceptable noise level range for commercial uses between 65 dB and 70 dB L_{dn}. The Noise Element also has a conditionally acceptable exterior noise level up to 78 dB L_{dn}. The exterior noise level standards are applied at outdoor activity areas which are used for individuals to congregate. The project site plan does not contain any outdoor activity areas.

This is a less than significant impact.

Non-Transportation Noise Sources

Parking Lot Noise Levels at Nearest Noise-Sensitive Receivers

The nearest noise-sensitive receiver is the Church of Jesus Christ of Latter-Day Saints, which is located to the east of the project site across Jeffery Way. Based upon the trip generation analysis conducted by Fehr & Peers, the peak hour trip generation is 272 vehicles in and out of the project site.

Based upon noise measurements conducted by j.c. brennan & associates, Inc., the typical parking lot Sound Exposure Level (SEL) associated with arrivals and departures from parking lots is 72 dB at a distance of 50 feet. The maximum noise level at 50-feet is approximately 65 dB. The nearest proposed parking lot is approximately 285-feet from the property line of the church. To determine the hourly noise level at the church property line, the following formula can be used:

L_{eq} = SEL + (10 times the logarithm of number of operations) - 35.6; where

The SEL is 72 at a distance of 50 feet;

10 log the number of operations (272 vehicles per hour) is 24;

35.6 is the 10 times the logarithm of the number of seconds in an hour.

The L_{eq} associated with the parking lot is 61 dB at 50-feet. The predicted L_{eq} at a distance of 285-feet (church property line) is 46 dB, and the maximum noise level is 50 dB. Because peak hour is

generally associated with the daytime hours, the project will comply with the City of Brentwood Table N-2 noise level standards. It is also noted that the project parking lot noise levels are considerably less than the background noise levels.

This impact is less than significant.

Drive-Through Noise Levels at Nearest Noise-Sensitive Receivers

The nearest noise-sensitive receiver is the Church of Jesus Christ of Latter-Day Saints, which is located to the east and across Jeffery Way from the project site. There are three drivethrough lanes proposed for the site.

The proposed drive-through speakers would be located between 400 and 425-feet from the nearest church property line.

To quantify the noise emissions from the fast-food drive through lanes, data from a Sacramento area drive-through restaurant was used. The data was collected by conducting noise level measurements at a distance of 30 feet from the drive-through lane and speaker box. The drive-through speaker apparatus used at the test site is typical of most fast food type drive-through speakers. The sound level meter was located on a tripod at a height of 5 feet above ground and fitted with a windscreen. The results of the noise level measurements are shown in Table 10.

TABLE 10: DRIVE-THROUGH SPEAKER NOISE LEVELS

# of Lanes	*Distance (ft)*	*Orientation*	*Maximum, L_{max}*	*Average, L_{eq}*	*Median, L_{50}*
1	30	Directly in Front	61 dB	55 dB	54 dB

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2017.

It should be noted that maximum noise levels were observed to include periods of speech from the drive-through speaker, as well as vehicle idling noise. Average (L_{eq}) and median (L_{50}) noise levels consisted primarily of vehicles idling.

Based upon a distance of 400-feet from the church property line to the three drive-through speakers, the noise levels are predicted to be 32 dB L_{eq} and 37 dB L_{max}. This would comply with the daytime and nighttime noise level standards contained in Table N-2 of the General Plan Noise Element.

This is a less than significant impact.

Truck Deliveries Noise Levels at Nearest Noise-Sensitive Receivers

The nearest noise-sensitive receiver is the Church of Jesus Christ of Latter-Day Saints, which is located to the east and across Jeffery Way from the project site.

The project does not currently have a detailed site plan depicting loading dock locations or estimates of loading dock usage for the proposed commercial uses. Therefore, the proposed commercial uses are predicted to receive deliveries at the fronts of the buildings. Worst-case truck activity for the commercial development is estimated to consist of one tractor-trailer truck delivery per hour and up to three step-size van deliveries per hour at the center of the project site.

Based on file data for these types of heavy truck passages and unloading activity noise level data, the SEL at a reference distance of 50 feet from the passage area is approximately 88 dB with a maximum noise level of 80 dB. Typical medium truck arrivals, departures, and unloading are approximately 84 dB SEL and 75 dB L_{max} at 50 feet. Based upon the data described above, the same formula for the parking lot and fueling island can be used to determine the hourly noise level due to the truck deliveries.

The formula indicates that the hourly L_{eq} associated with heavy trucks is 52dB L_{eq}, 80 dB L_{max} at a distance of 50 feet. Medium truck noise levels would be 53 dB L_{eq} at a distance of 50 feet. The overall noise level associated with truck deliveries is 56 dB L_{eq} and 80 dB L_{max} at 50 feet.

The approximate distance from the center of the project site to the nearest noise-sensitive receptor (the Church across Jeffery Way) is approximately 360-feet. Therefore, the hourly L_{eq} value at the church is predicted to be 39 dB L_{eq}, and the maximum noise level would be 63 dB. This would comply with the daytime and nighttime noise level standards contained in Table N-2 of the General Plan Noise Element.

This is a less than significant impact.

Conclusion

As described above, the project will not result in a significant increase in roadway noise levels or significant increases in operational noise levels at the nearest receptors. Therefore, implementation of the project would have a **less than significant** impact.

Response b): Less than Significant. The types of construction vibration impact include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 11 shows the typical vibration levels produced by construction equipment.

TABLE 11: REPRESENTATIVE VIBRATION SOURCE LEVELS FOR TYPICAL CONSTRUCTION EQUIPMENT

Equipment	*Peak Particle Velocity At 25 Feet*	*Approximate Velocity Level at 25 Feet*
Large Bulldozer	0.089 (inches/second)	87 (VdB)
Loaded Trucks	0.076 (inches/second)	86 (VdB)
Small Bulldozer	0.003 (inches/second)	58 (VdB)
Auger/drill Rigs	0.089 (inches/second)	87 (VdB)
Jackhammer	0.035 (inches/second)	79 (VdB)
Vibratory Hammer	0.070 (inches/second)	85 (VdB)

SOURCE: FTA TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, 2006.

The primary construction activities associated with the project would occur when the infrastructure, such as buildings and utilities, are constructed.

Based upon research conducted by Caltrans, the threshold for architectural damage to structures is 0.20 peak particle velocity in inches per second (in/sec p.p.v.) and continuous vibrations of 0.10 in/sec p.p.v., or greater, would likely cause annoyance to sensitive receptors.

Based upon Table 11, which shows potential vibration impacts at a distance of 25 feet, it is not expected that vibration impacts would occur which would cause any structural damage at any historic structures and is not expected to exceed the 0.10 in/second ppv criterion for human annoyance at the nearest off-site structures. As a result, short-term groundborne vibration impacts would be considered **less than significant** and no mitigation is required

Response d): Less than Significant. Construction noise was analyzed using data compiled by the USEPA that lists typical noise levels at 50 feet for construction equipment and various construction activities.

Noise from construction activities would add to the noise environment in the immediate project vicinity. Activities involved in typical construction would generate maximum noise levels, as indicated in Table 12, ranging from 80 to 89 dB at a distance of 50 feet.

TABLE 12: NOISE LEVELS FOR TYPICAL CONSTRUCTION EQUIPMENT

Equipment	*Typical Equipment Level (dBA) 50 Feet from Source*
Air Compressor	81
Backhoe	85
Concrete Pump	82
Concrete Breaker	82
Truck Crane	88
Dozer	87
Generator	78
Loader	84
Paver	88
Pneumatic Tools	85
Water Pump	76
Power Hand Saw	78
Shovel	82
Trucks	88

SOURCE: FTA TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, 2006.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A significant project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Noise impacts primarily occur when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours). These impacts also occur in areas

immediately adjoining noise sensitive land uses, or when construction noise lasts over an extended period of time.

Policy N1.15 of the Noise Element states that construction activities comply with standard best practices shown in Action N1E. The following are the best practices shown in Action item N1E:

Action N 1e: During the environmental review process, determine if proposed construction will constitute a significant impact on nearby residents and, if necessary, require mitigation measures in addition to the standard best practice controls. Suggested best practices for control of construction noise include:

1. *Construction period shall be less than 12 months;*
2. *Noise-generating construction activities, including truck traffic coming to and from the construction site for any purpose, shall be limited to between the hours of 7:00 am and 6:00 pm on weekdays, and between 8:00 am and 5:00 pm on Saturdays. No construction shall occur on Sundays or City holidays;*
3. *All equipment driven by internal combustion engines shall be equipped with mufflers, which are in good condition and appropriate for the equipment;*
4. *The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists;*
5. *At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from residences;*
6. *Unnecessary idling of internal combustion engines shall be prohibited;*
7. *Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities, to the extent feasible;*
8. *The required construction-related noise mitigation plan shall also specify that haul truck deliveries are subject to the same hours specified for construction equipment;*
9. *Neighbors located adjacent to the construction site shall be notified of the construction schedule in writing; and*
10. *The construction contractor shall designate a "noise disturbance coordinator" who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall be responsible for determining the cause of the noise complaint (e.g., starting too early, poor muffler, etc.) and instituting reasonable measures as warranted to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.*

Implementation of these required measures (i.e., engine muffling, placement of construction equipment, and strategic stockpiling and staging of construction vehicles), and compliance with the City Municipal Code requirements, would serve to further reduce exposure to construction noise levels. Adherence to the City General Plan and City Municipal Code Title 4.12, Article 9 (Noise Control Ordinance), would minimize any impacts from noise during construction. Requirements stated above are adopted by the City as Conditions of Approval (COAs) for all new

development projects prior to project approval. Therefore, no additional noise control measures would be required and this impact would be considered **less than significant**.

Responses e), f): No Impact. The project site is not within an airport land use plan or within two miles of an airport. The nearest airport, Funny Farm Airport, is a private airfield located approximately 5.3 miles southeast of the project site. Therefore, there would be **no impact**.

Legend

- Project Boundary (7.63 ac)
- Brentwood City Boundary

Noise Monitoring Locations

- Short-Term Traffic Noise Measurement Site
- Continuous (24-hr) Noise Measurement Site

0 250 500
Feet

Sources: J.C. Brennan & Associates; Contra Costa County GIS; Open Streets; ArcGIS Online Imagery Map Service. Map date: October 27, 2017.

CITY OF BRENTWOOD - CENTER POINTE

Figure 13. Noise Monitoring Locations

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

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XIII. POPULATION AND HOUSING -- WOULD THE PROJECT:

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

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. Implementation of the project would result in the construction of a commercial center, including a fitness center, restaurant, and other commercial and retail uses, on the project site. There are no residential uses proposed as part of the project. As such, the proposed project would not directly induce population growth. The proposed project is located near the northwestern edge of an existing urbanized area of the City. There is existing infrastructure (roads, water, sewer, etc.) in the immediate vicinity of the project site. While the project would extend these services onto the site to serve the proposed development, the project would not extend infrastructure beyond an area of the City not currently served. Therefore, the project would not indirectly induce population growth in other areas of the City of Brentwood.

This impact is **less than significant**, as demonstrated throughout this document. No additional mitigation is required.

Responses b), c): Less than Significant. The project site is currently undeveloped, and housing is not located on the project site. Therefore, the project would not displace substantial numbers of people or existing housing. As a result, the impact would be **less than significant** with respect to displacing people or housing.

XIV. PUBLIC SERVICES

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) 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:				
i) Fire protection?			X	
ii) Police protection?			X	
iii) Schools?			X	
iv) Parks?			X	
v) Other public facilities?			X	

RESPONSES TO CHECKLIST QUESTIONS

Response a.i): Less than Significant. The proposed project is located within the jurisdiction of the East Contra Costa Fire Protection District (ECCFPD). In accordance with ECCFPD efforts to reorganize due to budgetary constraints and the failure of the recent parcel tax, the district employs 28 personnel: 4 Battalion Chiefs, 9 Captains, 8 Engineers, and 7 Firefighters. The District currently staffs one station in Oakley, one in Discovery Bay, and one in Brentwood. An additional station is planned to be constructed along the East Cypress Road corridor in Oakley (to be known as Station 55) in the next several years.

- Station 52, at 201 John Muir Parkway, Brentwood
- Station 59, at 1685 Bixler Road, Discovery Bay
- Station 93, at 530 O'Hara Avenue, Oakley

The City of Brentwood is served primarily by Station 52. Station 52 is located approximately 2.3 miles south of the project site. Additionally, Station 93 is located approximately 2.7 miles northeast of the project site.

The Brentwood General Plan includes nine policies and four actions (Policies CSF 1-1 through 1-3, and 4-1 through 4-6, and Actions CSF 1a, and 4a-c) to ensure that fire protection services are provided in a timely fashion, are adequately funded, are coordinated between the City and appropriate service agency, and that new development pays their fair share of services. Among the action items included in the Brentwood General Plan that are applicable to the project are:

- Action CSF 1a: Requiring new development to pay their fair share fees of the cost of on and off-site community services and facilities;

- Action CSF 4a: Continue to enforce the California Building Code and the California Fire Code to ensure that all construction implements fire-safe techniques, including fire resistant materials, where required;
- Action CSF 4b: As part of the City's existing development review process for new projects, the City would continue to refer applications to the ECCFPD for determination of the project's potential impacts on fire protection services. Requirements would be added as conditions of project approval, if appropriate.

The project would comply with these General Plan actions. For example, the City of Brentwood collects development impact fees that support the construction of new fire facilities in the amount of $0.1695 per new commercial building square foot. The City also has Community Facilities Districts (special tax revenue) that can be used for a variety of services, and which are currently being allocated primarily towards public protection and safety services. These funds could be used to fund new facilities, maintain existing facilities and equipment, and pay for salaries and benefits. In addition to providing additional revenue for fire facilities, the project would be required to comply with all ECCFPD standard conditions of approval related to provision of fire flow, roadway widths, etc. The project is also subject to the California Fire Code requirements set forth in Chapter 15.06 of the Municipal Code.

The 2014 Brentwood General Plan Update EIR concluded implementation of the General Plan would result in a less than significant impact related to the provision of public services throughout the City.[5] The project is consistent with the General Plan designation for the site; therefore, the additional demand for fire protection services resulting from the proposed project has already been evaluated in the General Plan EIR. Given the project's compliance with the relevant General Plan policies and actions related to fire service, the impact from the proposed project, consistent with the General Plan EIR determination, would be **less than significant** regarding the need for the construction of new fire protection facilities which could cause significant environmental impacts.

Response a.ii): Less than Significant. The City of Brentwood Police Department would provide police protection services to the project site. Currently, the Brentwood Police Department provides law enforcement and police protection services throughout the City. Established in 1948, the Brentwood Police Department is a full service law enforcement agency that is charged with the enforcement of local, State, and Federal laws, and with providing 24-hour protection of the lives and property of the public. The Police Department functions both as an instrument of public service and as a tool for the distribution of information, guidance, and direction.

The Brentwood Police Department services an area of approximately 14 square miles. As of December 2017, the Department had 63 sworn police officers and another 29 civilian support staff. In addition to the permanent staff, the Department had approximately 20 volunteers who are citizens of the community and assist with day to day operations.

The Department is located at 9100 Brentwood Boulevard, approximately 4.3 miles southeast of the project site.

5 City of Brentwood. *2014 Brentwood General Plan Update EIR* [pg. 3.12-23]. July 22, 2014

The Brentwood General Plan includes eight policies and five actions (Policies CSF 1-1 through 1-3, and 3-1 through 3-5; and Actions CSF 1a and 3a-d) to ensure that police protection services are provided in a timely fashion, are adequately funded, are coordinated between the City and appropriate service agency, and that new development pays their fair share of services. Among the policies and actions items included in the Brentwood General Plan that are applicable to the project are:

- Policy CSF 3-4: Emphasize the use of physical site planning as an effective means of preventing crime. Open spaces, landscaping, parking lots, parks, play areas, and other public spaces should be designed with maximum feasible visual and aural exposure to community residents.
- Policy CSF 3-5: Promote coordination between land use planning and urban design through consultation and coordination with the Police Department during the review of new development applications.
- Action CSF 1a: Requiring new development to pay their fair share fees of the cost of on and off-site community services and facilities,
- Action CSF 3c: As part of the development review process, consult with the police department in order to ensure that the project design facilitates adequate police staffing and that the project addresses its impacts on police services.

The project applicant will be required by the City to comply with these policies and actions. Therefore, consistent with the General Plan EIR conclusion related to governmental facility impacts resulting from General Plan build-out, the project would have a **less than significant** impact regarding the need for the construction of new police protection facilities which could cause significant environmental impacts.

Response a.iii): Less than Significant. The project site is located within the Liberty Union High School District (LUHSD) and the Brentwood Union School District (BUSD). The LUHSD includes three comprehensive high schools: Liberty High, Freedom High, and Heritage High. In addition, the LUHSD includes one continuation high school, La Paloma, and one alternative high school, Independence High School.

According to the LUHSD, all three comprehensive high school sites were built with a 2,200-student capacity. According to the California Department of Education DataQuest online data reporting resource, Liberty High's 2016-2017 enrollment was 2,579 students, Freedom High's enrollment was 2,643 students, and Heritage High's enrollment was 2,499 students. Therefore, the 2,200-student capacity is currently being exceeded at all three high schools, and facility needs are currently being met with portables.[6]

The BUSD consists of eight elementary schools and three middle schools. In 2017-2018, the BUSD had a K-6th grade enrollment of 6,617 with K-6th capacity of 6,291 in 2017. The BUSD's 2017-2018 7-8th grade enrollment was 2,300 with a 7-8th grade capacity of 2,354 in 2017.[7] Therefore,

[6] As cited in the Bella Fiore IS/MND, dated August 2014 (pg. 86): Debra Fogarty, Chief Business Officer, Liberty Union High School District, email communication, November 12, 2013.

[7] Cooperative Strategies. School Facility Needs Analysis for Brentwood Union School District. May 9, 2017.

the District is over capacity for grades K-6th by 326 students, but has excess capacity for another 54 7-8th grade students.

The applicant is required to pay school impact fees. 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."

Because the proposed project is not a student-generating use, development of the proposed project would not result in substantial adverse physical impacts associated with the provision of new school facilities, and would not result in the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts. Regardless, the project applicant would be required to pay school impact fees. Therefore, impacts to schools would be **less than significant**.

Response a.iv): Less than Significant. Potential project impacts to parks and recreational facilities are addressed in the following Recreation section of this document.

Response a.v) Less than Significant. Other public facilities in the City of Brentwood include libraries, medical facilities, and activity centers such as the Brentwood Civic Center and the Brentwood Senior Activity Center. The proposed project would not result in the construction of any new homes, and would provide limited new employment opportunities. Therefore, the use of existing public facilities would not be substantially increased, and no new or expanded facilities would be required. Therefore, impacts to other public facilities are **less than significant.**

XV. RECREATION

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*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?			X	
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?			X	

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b): Less than Significant. The proposed project would not result in the construction of any new homes, and would provide limited new employment opportunities. Therefore, the use of existing parks and other recreational facilities would not be substantially increased, and no new or expanded facilities would be required. As such, this is a **less than significant** impact and no mitigation is required.

XVI. TRANSPORTATION AND CIRCULATION -- WOULD THE PROJECT:

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

RESPONSES TO CHECKLIST QUESTIONS

Response a), b): Less than Significant with Mitigation. In order to determine potential impacts related to traffic generated by the proposed Project, a Transportation Impact Assessment (TIA) was prepared by Fehr & Peers in June 2017. The full report is included as Appendix H.

This traffic impact study presents an analysis of AM and PM peak hour traffic operations under the following scenarios:

- *Existing* – Existing (2017) conditions based on recent traffic counts.
- *Existing with Project* – Existing (2017) conditions with project-related traffic.
- *Near-Term without Project* – Existing (2017) conditions considering the development of approved projects within the study area that could be constructed over the next five to ten years.
- *Near-Term with Project* – Near-Term conditions with project-related traffic.

- *Cumulative without Project* – Forecasts for the cumulative scenario were based on traffic growth trends as described in the Antioch and Brentwood General Plan EIRs, and supplemented by a check of traffic forecasts for the study area in the 2040 Contra Costa Countywide travel demand model and recent forecasts prepared for other projects were also reviewed.
- *Cumulative with Project* – Future forecast conditions with project-related traffic.

Study Area

The following is a description of area roadways that provide circulation to the project site:

- *State Route (SR) 4* is an east-west freeway, connecting Eastern Contra Costa County with the San Francisco Bay Area and California's Central Valley. SR 4 currently provides four travel lanes in each direction to SR 160; three travel lanes are provided in each direction from SR 160 to Laurel Road in Oakley. Two travel lanes in each direction are provided from Laurel Road to Sand Creek Road, and a single travel lane in each direction is provided from Sand Creek Road through Brentwood and beyond. Construction is underway to widen the two-lane section between Sand Creek Road and Balfour Road to provide two travel lanes in each direction, as well as a new SR 4 bridge crossing over Balfour Road and construction of a full interchange with Balfour Road. SR 4 is a designated Route of Regional Significance.

- *Lone Tree Way* is an east-west roadway that forms the northern boundary of the project site. The roadway provides two travel lanes in both directions to the west of Hillcrest Avenue, and three travel lanes in both directions east of Hillcrest Avenue, plus turn pockets at intersections. The posted speed limit is 45 miles per hour (mph). No on-street parking is permitted. Lone Tree Way is a designated Route of Regional Significance.

- *Jeffery Way* is a north-south roadway that forms the eastern boundary of the project site. The roadway provides two travel lanes in the northbound direction and one travel lane in the southbound direction. The posted speed limit is 35 mph. No on-street parking is permitted. Class II bicycle lanes are provided on Jeffery Way.

- *Shady Willow Lane* is a north-south roadway located east of the Project site. The roadway provides two travel lanes in both directions adjacent to developed parcels, with the roadway narrowing to provide one travel lane in each direction in the vicinity of Amber Lane. The posted speed limit is 35 mph. No on-street parking is permitted. Class II bike lanes are provided continuously on both sides of the roadway from Lone Tree Way to Amber Lane.

Evaluation Methodology

The following is a description of the methods used in this impact study to analyze intersection operations.

Level of Service Analysis Procedures

Level of service (LOS) analysis provides a basis for describing existing traffic conditions and for evaluating the significance of project-related traffic impacts. LOS measures the quality of traffic flow and is represented by letter designations from A to F, with a grade of A referring to the best conditions, and F representing the worst conditions. The characteristics associated with the various LOS for intersections are presented in Table 13 and further discussed below.

TABLE 13: INTERSECTION LOS CRITERIA

LOS	***Description***	***Average Control Delay Per Vehicle (Seconds)***	
		Signalized Intersections	***Unsignalized Intersections***
A	Free flow with no delays. Users are virtually unaffected by others in the traffic stream.	≤ 10.0	≤ 10.0
B	Stable traffic. Traffic flows smoothly with few delays.	> 10.0 to 20.0	> 10.0 to 15.0
C	Stable flow but the operation of individual users becomes affected by other vehicles. Modest delays.	> 20.0 to 35.0	> 15.0 to 25.0
D	Approaching unstable flow. Operation of individual users becomes significantly affected by other vehicles. Delays may be more than one cycle during peak hours.	> 35.0 to 55.0	> 25.0 to 35.0
E	Unstable flow with operating conditions at or near the capacity level. Long delays and vehicle queuing.	> 55.0 to 80.0	> 35.0 to 50.0
F	Forced or breakdown flow that causes reduced capacity. Stop and go traffic conditions. Excessive long delays and vehicle queuing.	> 80.0	> 50.0

SOURCE: HIGHWAY CAPACITY MANUAL, TRANSPORTATION RESEARCH BOARD, 2010.

The signalized study intersections have been analyzed using methods presented in the *2010 Highway Capacity Manual* (HCM). This methodology is as identified in the *CCTA Technical Procedures Update* (January 2013). Parameters and recommended default values as presented in Appendix C of the Technical Procedures have also been used. The "*Synchro*" traffic simulation software has been used to calculate the LOS at study intersections on Brentwood Boulevard using the HCM procedures.

Un-signalized intersections with side street stop sign control have also been evaluated using HCM procedures. With this method, operations are defined by the average control delay per vehicle (measured in seconds). 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.

Intersection Queuing

Vehicle queues were evaluated for the Lone Tree Way/Jeffery Way and the signalized project site access intersection at Jeffery Way using Synchro 9. Average and 95th percentile vehicle queues are estimated based on the level of vehicle traffic, traffic signal timings, as well as the intersection level of service and delay at the upstream intersection.

Study Intersections

The proposed project will generate new vehicular trips that will increase traffic volumes on the City street network. To quantitatively evaluate traffic conditions and to provide a basis for comparison of operating conditions with and without traffic generated by the proposed project, traffic operations at the following ten study area intersections were evaluated:

1. Lone Tree Way at SR 4 Eastbound (EB) Ramps
2. Lone Tree Way at SR 4 Westbound (WB) On-ramp/Jeffery Way
3. Lone Tree Way at Slatten Ranch Shopping Center/Brentwood Station Access
4. Lone Tree Way at Shady Willow Lane/Slatten Ranch Road
5. Jeffery Way at Brentwood Station Access I/Project Access I
6. Jeffery Way at Brentwood Station Access II/Project Access II (Future Signal)
7. Jeffery Way at Brentwood Station Access III/Project Access III
8. Jeffery Way at SR 4 WB Ramps
9. Jeffery Way at Amber Lane (Intersection exists only in Cumulative 2040 conditions)
10. Shady Willow Lane at Amber Lane.

Thresholds of Significance

The significance of the proposed project's impact on traffic operating conditions is based on a determination of whether project-generated traffic results in roadway or intersection operating conditions below acceptable standards as defined by the governing agency. A project's impact on traffic conditions is considered significant if implementation of the project would result in LOS changing from levels considered acceptable to levels considered unacceptable, or if the project would significantly worsen an already unacceptable LOS without the project. Relevant policies for the study area consist of the East County Action Plan for Routes of Regional Significance and the City's General Plan.

The East County Action Plan for Routes of Regional Significance (March 2014) identifies the following standard for Signalized Suburban Arterial Routes.

> *"On suburban arterial routes, maintain LOS D or better at all signalized intersections, except on Bailey Road where LOS E will be acceptable or at Traffic Management Program sites that use performance measures other than average intersection delay."*

Brentwood Boulevard is identified as a Signalized Suburban Arterial Route.

The City of Brentwood General Plan has established the following standards:

Circulation Element Policy CIR 1-4:

1. *Signalized Suburban Arterial Routes - Intersection levels of service should be maintained at LOS D or better.*

Circulation Element Policy CIR 1-5:

Maintain LOS D or better at intersections within Brentwood that are not on designated Routes of Regional Significance, and LOS E or better at intersections in the Downtown Specific Plan area. At unsignalized intersections, levels of service shall be determined for both controlled movements and for the overall intersection. Controlled movements operating at either LOS E or LOS F are allowable if the intersection is projected to operate at LOS C or better overall, and/or if the "Peak Hour" signal warrant outlined in the CA MUTCD remains unmet.

Project Characteristics

The amount of traffic associated with the project was estimated using a three-step process:

1. *Trip Generation* – The *amount* of vehicle traffic entering/exiting the project site was estimated.
2. *Trip Distribution* – The *direction* trips would use to approach and depart the site was projected.
3. *Trip Assignment* – Trips were then *assigned* to specific roadway segments and intersection turning movements.

Project Description

Several project variants were under consideration at the time the TIA was completed, with a maximum development footprint of approximately 61,000 square feet on the approximately 7.6-acre site. Common elements of the project variations include fast-food with drive-through and a high-turnover sit-down restaurant. Variants include an urgent care office, coffee shop, car wash, and general retail. At the time the TIA was completed, either a grocery store or fitness center was assumed to serve as the anchor tenant. As such, the TIA analyzed two options in order to determine potential traffic impacts associated with project implementation.

Specific land uses assumed for Option A include:

- 38,000 square foot fitness center or 31,000 square foot grocery store
- 10,500 square feet of general retail
- 2,700 square foot coffee shop with drive-through
- 6,510 square foot high-turnover sit-down restaurant
- 4,710 square feet of fast-food with drive-through
- 2,700 square foot urgent care center

Specific land uses assumed for Option B include:

- 38,000 square foot fitness center or 31,000 square foot grocery store
- 5,740 square foot high-turnover sit-down restaurant
- 12,750 square feet of fast-food with drive-through
- 4,330 square foot automated car wash

Under all project variants, vehicular access is proposed to occur from three driveways on Jeffery Way. Two driveways are proposed to be right-in/right-out only. The center driveway would be aligned with an existing driveway that serves the Brentwood Station shopping center, and is proposed to be signalized and provide full site access.

It is noted that the current project proposal is consistent with Option A. The TIA analyzes potential impacts associated with the two options outlined above.

Project Trip Generation

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. Estimates are created for the daily condition and for the peak one-hour period during the morning and evening commute when traffic volumes on the adjacent streets are typically the highest. Project trip generation was estimated using rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (9th Edition) for the various project uses.

At retail establishments such as the proposed project, driveway traffic comprises: (1) new traffic generated by the project, (2) traffic that would otherwise already be on the adjacent roadways but the driver decides to stop at the site (e.g., to purchase an item on their way home from work), and (3) traffic on other nearby roadways, but the driver decides to take a short detour to stop at the site. The trips in Item 2 are referred to as "pass-by" trips and the trips in Item 3 are referred to as "diverted-link" trips. Information contained in the ITE *Trip Generation Handbook* and surveys of similar uses was used to estimate pass-by and diverted link trips. The following pass-by/diverted trip rates for each of the proposed uses are summarized below:

- Fitness Center – 100 percent of trips to the fitness center are assumed to be primary trips and no pass-by trip reduction was taken for this use.
- Grocery Store – 30 percent of trips are considered pass-by for all time periods.
- High-Turnover Sit-Down Restaurant – 40 percent of daily and PM peak hour trips are passby/diverted trips; not assumed to be open for breakfast service. AM peak hour trips are associated with activity due to deliveries and employees.
- Fast-Food Restaurant with Drive-Through Window – 50 percent of trips are considered pass-by trips for all time periods.
- Coffee Shop with Drive-through – 40 percent daily and PM peak hour, 70 percent AM peak hour trips are considered pass-by.[8]
- Automated Car Wash – 10 percent of trips are considered pass-by trips for all time periods.

[8] Coffee shops with a drive through have atypical (higher) pass-by trip rates when compared to other land uses. Due to the nature of coffee shops, many of the trips generated are pass-by, as drivers stop off on their way to their intended destination. As there is no guidance in the ITE Trip Generation Manual, Fehr & Peers conducted a trip origin/destination survey in June, 2003 at a Starbucks located in San Jose, California. It was found that during the morning peak hour, 78-percent of trips were considered either pass-by or diverted link trips. The results of this study were applied to the proposed Project for the morning peak hour. A 40-percent pass-by rate was applied for the daily and evening peak hour trips.

- General Retail – 30 percent of trips are considered pass-by trips for all time periods.
- Urgent Care Center – 100 percent of trips to the urgent care center are assumed to be primary trips and no pass-by trip reduction was taken for this use.

Based on the application of the appropriate trip generation rate and pass-by trip reduction factor, separate trip generation estimates were developed for each project alternative under consideration, as summarized in Table 14 and detailed in Appendix H. For the purposes of the transportation impact assessment, the evaluation considered the highest trip generating alternative, Option B with a Grocery Store, with the detailed trip generation presented in Table 15. Potential impacts of a lower trip generating alternative (such as the proposed project) would be captured by the analysis of the highest trip generating option. Because the project proposes development of Option A, which has lower trip generation, the analysis in this section is considered conservative.

TABLE 14: SUMMARY OF TRIP GENERATION ESTIMATES (WEEKDAY)

Net New Trips by Scenario	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Option A with Fitness Center	4,570	158	143	301	155	117	272
Option A with Grocery Store	5,540	176	147	323	178	163	341
Option B with Fitness Center	5,320	229	221	449	237	201	428
Option B with Grocery Store	6,290	247	214	461	261	237	498

SOURCE: TRIP GENERATION MANUAL (9TH EDITION), ITE, 2012; FEHR & PEERS, 2017.

TABLE 15: OPTION B DETAILED TRIP GENERATION ESTIMATES (WEEKDAY)

Use	Size	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Grocery Store[1]	31,000 sf	3,170	65	40	105	150	144	294
High Turnover Restaurant[2]	5,740 sf	730	34	28	62	34	23	57
Drive Thru[3]	12,750 sf	6,330	295	284	579	216	200	416
Automated Car Wash[4]	4,330 sf	520	22	22	44	31	31	61
Subtotal		10,750	411	347	736	431	397	828
Pass-by Trip Reduction		*4,460*	*172*	*156*	*326*	*170*	*155*	*325*
Total Net New Project Trips		***6,290***	***239***	***191***	***410***	***261***	***242***	***503***

NOTES:

1. ITE TRIP GENERATION LAND USE CATEGORY (850) - SUPERMARKET (ADJ STREETS, 7-9A, 4-6P)
DAILY: T = 102.24(X)
AM PEAK HOUR: T = 3.40(X) (62% IN, 38% OUT)
PM PEAK HOUR: T = 9.48(X) (51% IN, 49% OUT)

2. ITE TRIP GENERATION LAND USE CATEGORY (932) - HIGH-TURNOVER RESTAURANT (NO BREAKFAST SERVICE) (ADJ STREETS, 7-9A, 4-6P)
DAILY: T = 127.15(X)
AM PEAK HOUR: NO BREAKFAST SERVICE ASSUMED; AM PEAK HOUR IS ASSUMED TO BE 1 PERCENT OF DAILY, WITH 80 PERCENT INBOUND/20 PERCENT OUTBOUND TRAFFIC TO ACCOUNT FOR EMPLOYEE ARRIVALS AND DELIVERIES.
PM PEAK HOUR: T = 9.85(X) (60% IN, 40% OUT)

3. ITE TRIP GENERATION LAND USE CATEGORY (948) - AUTOMATED CAR WASH (ADJ STREETS, PM PEAK HOUR) AND (942) – AUTOMOBILE CARE CENTER (ADJ STREETS, DAILY, 7-9A)
DAILY: T = 120(X)
AM PEAK HOUR: T = 10.2(X) (50% IN, 50% OUT)
PM PEAK HOUR: T = 14.12(X) (50% IN, 50% OUT)

4. ITE TRIP GENERATION LAND USE CATEGORY (934) - FAST-FOOD WITH DRIVE-THROUGH WINDOW (ADJ STREETS, 7-9A, 4 6P)
DAILY: T = 496.12(X)
AM PEAK HOUR: T = 45.42(X) (51% IN, 49% OUT)
PM PEAK HOUR: T = 32.65(X) (52% IN, 48% OUT)

SOURCE: TRIP GENERATION MANUAL (9TH EDITION), ITE, 2012; FEHR & PEERS, 2017.

Project Trip Distribution and Assignment

Project trip distribution refers to the directions of approach and departure that vehicles would take to access and leave the site. Estimates of regional project trip distribution were developed based on existing travel patterns in the area, a select zone analysis using the Contra Costa Transportation Authority (CCTA) travel demand model, and the location of complementary land uses.

Project trips were then assigned to the roadway network based on the directions of approach and departure, reflective of the expected trip generating potential of Option B. Project trip assignment would change in the cumulative year with the completion of the Amber Lane extension and other roadway improvements.

Existing Traffic Conditions

The following is a description of existing traffic operating conditions in the study area.

Existing Traffic Counts

Weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak period intersection turning movement counts were collected at the study intersections, including separate counts of pedestrians and bicyclists, in April 2017 with area schools in normal session.

Existing LOS at Study Intersections

Existing operations were evaluated for the weekday AM and PM peak hours at the study intersections, as summarized in Table 16. Observed peak hour factors[9] were used at all intersections for the existing analysis. Pedestrian and bicycle activity was also factored into the analysis. As shown, all signalized and unsignalized study intersections currently operate within the level of service standards set by the City of Brentwood and Contra Costa County.

Existing Signal Warrants

To assess the need for signalization of stop-controlled intersections, the Manual of Uniform Traffic Control (MUTCD) (Federal Highway Administration 2009) presents nine signal warrants. The Peak Hour Volume Warrant and the Peak Hour Delay Warrant was used as a supplemental analysis tool to assess operations at unsignalized intersections.[10] The three existing unsignalized driveway intersections on Jeffery Way do not currently meet signal warrants.

[9] The peak hour factor is the relationship between the peak 15-minute flow rate and the full hourly volume: PHF = Hourly volume / (4x (volume during the peak 15 minutes of flow)). The analysis level of served is based on peak rates of flow occurring within the peak hour because substantial short term fluctuations typically occurring during an hour.

[10] Unsignalized intersection warrant analysis is intended to examine the general correlation between existing conditions and the need to install new traffic signals. Existing peak-hour volumes are compared against a subset of the standard traffic signal warrants recommended in the MUTCD and associated State guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based

TABLE 16: EXISTING CONDITION INTERSECTION LOS

Intersection	*Control*[1]	*Peak Hour*	*Delay*[2,3]	*LOS*
1. Lone Tree Way at SR 4 EB Ramps	Signal	AM	21	C
		PM	36	D
2. Lone Tree Way at SR 4 WB On-ramp/Jeffery Way	Signal	AM	26	C
		PM	30	C
3. Lone Tree Way at Slatten Ranch Shopping Center/Brentwood Station Access	Signal	AM	4	A
		PM	7	A
4. Lone Tree Way at Shady Willow Lane/Slatten Ranch Road	Signal	AM	34	C
		PM	49	D
5. Jeffery Way at Brentwood Station Access I/Project Access I[4]	SSSC	AM	1 (11)	A (B)
		PM	1 (12)	A (B)
6. Jeffery Way at Brentwood Station Access II/Project Access II[4]	SSSC	AM	1 (13)	A (B)
		PM	1 (15)	A (C)
7. Jeffery Way at Brentwood Station Access III/Project Access III[4]	SSSC	AM	1 (11)	A (B)
		PM	1 (11)	A (B)
8. Jeffery Way at SR 4 WB Ramps	Signal	AM	7	A
		PM	10	B
9. Jeffery Way at Amber Lane (Exists only in Cumulative conditions)	N/A	AM	N/A	N/A
		PM		
10. Shady Willow Lane at Amber Lane	Signal	AM	14	B
		PM	16	A

*NOTES: **BOLD** TEXT INDICATES POTENTIALLY UNACCEPTABLE INTERSECTION OPERATIONS.*

1. SIGNAL = SIGNALIZED INTERSECTION; SSSC = SIDE-STREET STOP-CONTROLLED INTERSECTIONS; TRAFFIC ON THE MAIN STREET DOES NOT STOP WHILE TRAFFIC ON THE SIDE-STREET IS CONTROLLED BY A STOP SIGN.

2. AVERAGE INTERSECTION DELAY IS CALCULATED FOR ALL SIGNALIZED INTERSECTIONS USING THE 2010 HCM METHOD FOR VEHICLES.

3. FOR SSSC INTERSECTIONS, AVERAGE DELAY OR LOS IS LISTED FIRST FOLLOWED BY THE DELAY OR LOS FOR THE WORST APPROACH IN PARENTHESES.

4. INTERSECTION IS A THREE-LEG INTERSECTION THAT PROVIDES DRIVEWAY ACCESS TO PARCEL ON THE EAST SIDE OF JEFFERY WAY. IN ALL PLUS PROJECT SCENARIOS, THE INTERSECTION BECOMES A FOUR-LEG INTERSECTION AND PROVIDES DRIVEWAY ACCESS TO THE PROJECT SITE.

SOURCE: FEHR & PEERS, 2017.

Existing Intersection Queues

Vehicle queues were calculated for the intersection of Lone Tree Way at Jeffery Way for the northbound (NB) approach, and for the WB left movement. The 50th percentile queue represents an average, or most expected, queue that occurs on that movement. The 95th percentile queue represents a queue where 95 percent of the time during the hour of analysis, the queue is at or below this length. Essentially, this is the maximum expected queue length under typical peak conditions. As seen below in Table 17, the NB left-turn pocket queue exceeds capacity in both the AM and PM peak hours.

on field-measured traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely on the warrants because the installation of signals can lead to certain types of collisions. The responsible State or local agency should undertake regular monitoring of actual traffic conditions and accident data and conduct a timely reevaluation of the full set of warrants in order to prioritize and program intersections for signalization.

TABLE 17: EXISTING CONDITION VEHICLE QUEUE SUMMARY

Movement	Storage	AM Peak Hour		PM Peak Hour	
		50th Percentile	95th Percentile	50th Percentile	95th Percentile
NB Left	220	200	**220**	**220**	**220**
NB Through-Left	530	200	270	270	360
NB Right	530	0	50	70	140
WB Left	320	20	40	130	180

*NOTE: **BOLD** TEXT INDICATES QUEUES THAT EXCEED STORAGE CAPACITY.*
SOURCE: FEHR & PEERS, 2017.

Near-Term Conditions

The Near-Term scenario reflects existing traffic counts plus traffic from approved and pending developments that are expected to be completed and occupied in the next 5 to 10 years. Near-term conditions without and with the project are evaluated. The analysis of cumulative conditions considers development within the City of Brentwood as described in the General Plan and approved General Plan Amendments, and as such, reflects potential development applications received after the project was started that are consistent with the General Plan land use and circulation assumptions.

Near-Term Forecasts

The available *City of Brentwood Project Status Report* (April 1, 2017 for commercial projects and January 1, 2017 for residential projects) and the *City of Antioch Project Pipeline* (January, 2017) at the time this project analysis commenced were reviewed to identify developments to include in this scenario. The developments that could generate additional traffic through the study area are summarized in Table 18.

TABLE 18: APPROVED PROJECTS SUMMARY

Project Name	Size	Land Use	Status
City of Antioch Projects			
Parkridge Subdivision	123 units	Single Family Homes	Under Review
Heidorn Village	117 units	Single Family Homes	Approved, Awaiting Construction
Quail Cove	32 units	Single Family Homes	Under Review
The Promenade, Vineyards at Sand Creek	641 units	Single Family Homes	Approved, Awaiting Construction
City of Brentwood Projects			
TSM 9378 Bela Fiore	98 units	Single Family Homes	Complete
MS 356-05 Windy Springs Estates	5 units	Single Family Homes	Approved
TSM 9412/DR 15-011 Alvernaz	48 units	Single Family Homes	Approved
DR 15-004 Cornerstone Church	65,000 sf	Church	Approved, Permit Issued
DR 05-29 Lone Tree Crossing	118,000 sf	Retail	Approved, Permit Issued

SOURCES: CITY OF BRENTWOOD PROJECT STATUS REPORT (APRIL 1, 2017 FOR COMMERCIAL PROJECTS AND JANUARY 1, 2017 FOR RESIDENTIAL PROJECTS) AND CITY OF ANTIOCH PROJECT PIPELINE (JANUARY, 2017).

Near-Term project vehicle trip generation was estimated using trip generation rates and equations for the proposed land uses from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (9th Edition). Traffic generated by approved and pending developments was added to the existing traffic volumes to provide the basis for the Near-Term No Project analysis. Project traffic volumes were added to the Near-Term No Project forecasts to estimate Near-Term With Project volumes at the study intersections. The volumes also reflect pass-by and diverted trips.

Near-Term Roadway Assumptions

No roadway improvements, aside from those that would be constructed as part of the project, were included in the analysis of Near-Term conditions. Roadway improvements that would be constructed as part of the project include the widening of Jeffery Way from Lone Tree Way to the SR 4 WB Ramps to provide two southbound through lanes, as well as the signalization of the center driveway on Jeffery Way.

Near-Term No Project LOS at Study Intersections

Near-Term conditions were evaluated, and the results are presented in Table 19.

TABLE 19: NEAR-TERM CONDITION INTERSECTION LOS

Intersection	*Control*[1]	*Peak Hour*	*Delay*[2,3]	*LOS*
1. Lone Tree Way at SR 4 EB Ramps	Signal	AM	25	C
		PM	**59**	**E**
2. Lone Tree Way at SR 4 WB On-ramp/Jeffery Way	Signal	AM	28	C
		PM	30	C
3. Lone Tree Way at Slatten Ranch Shopping Center/Brentwood Station Access	Signal	AM	4	A
		PM	8	A
4. Lone Tree Way at Shady Willow Lane/Slatten Ranch Road	Signal	AM	36	D
		PM	**64**	**E**
5. Jeffery Way at Brentwood Station Access I/Project Access I[4]	SSSC	AM	1 (11)	A (B)
		PM	1 (14)	A (B)
6. Jeffery Way at Brentwood Station Access II/Project Access II[4]	SSSC/ Signal	AM	1 (15.7)	A (C)
		PM	1 (20.7)	A (C)
7. Jeffery Way at Brentwood Station Access III/Project Access III[4]	SSSC	AM	1 (11)	A (B)
		PM	1 (13)	A (B)
8. Jeffery Way at SR 4 WB Ramps	Signal	AM	10	A
		PM	12	B
9. Jeffery Way at Amber Lane (Exists only in Cumulative conditions)	SSSC	AM	N/A	N/A
		PM		
10. Shady Willow Lane at Amber Lane	Signal	AM	15	B
		PM	11	B

*NOTES: **BOLD** TEXT INDICATES POTENTIALLY UNACCEPTABLE INTERSECTION OPERATIONS.*

1. SIGNAL = SIGNALIZED INTERSECTION; SSSC = SIDE-STREET STOP-CONTROLLED INTERSECTIONS; TRAFFIC ON THE MAIN STREET DOES NOT STOP WHILE TRAFFIC ON THE SIDE-STREET IS CONTROLLED BY A STOP SIGN.

2. AVERAGE INTERSECTION DELAY IS CALCULATED FOR ALL SIGNALIZED INTERSECTIONS USING THE 2010 HCM METHOD FOR VEHICLES.

3. FOR SSSC INTERSECTIONS, AVERAGE DELAY OR LOS IS LISTED FIRST FOLLOWED BY THE DELAY OR LOS FOR THE WORST APPROACH IN PARENTHESES.

4. INTERSECTION IS A THREE-LEG INTERSECTION THAT PROVIDES DRIVEWAY ACCESS TO PARCEL ON THE EAST SIDE OF JEFFERY WAY. IN ALL PLUS PROJECT SCENARIOS, THE INTERSECTION BECOMES A FOUR-LEG INTERSECTION AND PROVIDES DRIVEWAY ACCESS TO THE PROJECT SITE.

SOURCE: FEHR & PEERS, 2017.

For the analysis of Near-Term conditions, signal timings, peak hour factors, pedestrian and bicycle activity, as well as truck percentages were unchanged from the Existing condition.

In the Near-Term Without Project condition, two intersections are projected to operate at deficient service levels during at least one peak hour prior to the addition of project traffic:

- Lone Tree Way at SR 4 EB Ramps (LOS E, PM Peak Hour)
- Lone Tree Way at Shady Willow Lane and Slatten Ranch Road (LOS E, PM Peak Hour)

Near-Term No Project Signal Warrants

To assess the need for signalization of stop-controlled intersections, the MUTCD (Federal Highway Administration 2009) presents nine signal warrants. The Peak Hour Volume Warrant and the Peak Hour Delay Warrant was used as a supplemental analysis tool to assess operations at unsignalized intersections.

Near-Term No Project Intersection Queueing

Intersection queues were calculated for the intersection of Lone Tree Way and Jeffery Way for all movements in the northbound approach, and for the westbound left movement, as well as for the new signalized project access on Jeffery Way. The 50th percentile queue represents an average, or most expected, queue that occurs on that movement. The 95th percentile queue represents a queue where 95 percent of the time, the queue is at or below this length. Essentially, this can be seen as a maximum expected queue length.

As presented in Table 20, vehicle queues are generally expected to be contained within the available storage, expect for the northbound left-turn movement, which currently exceeds the available storage length and extends into the adjacent left-through shared lane. With the addition of project traffic, the 95th percentile vehicle queue for the northbound left-through shared lane would extend beyond the adjacent intersection during the PM peak hour, and the 95th percentile westbound left-turn vehicle queue would exceed the storage capacity in the PM peak hour.

TABLE 20: NEAR-TERM VEHICLE QUEUE SUMMARY

Movement	Storage	AM Peak Hour		PM Peak Hour	
		50th Percentile	95th Percentile	50th Percentile	95th Percentile
NB Left	220	**220**	**220**	**220**	**220**
NB Through	530	230	310	350	520
NB Right	530	0	60	150	240
WB Left	320	20	50	30	60

*NOTE: **BOLD** TEXT INDICATES QUEUES THAT EXCEED STORAGE CAPACITY.*
SOURCE: FEHR & PEERS, 2017.

Vehicle queues at the signalized project driveway intersection would be contained within the available storage length.

Cumulative Conditions

This section discusses Cumulative traffic conditions without the project. The future conditions analysis considers development within the City of Brentwood as described in the Brentwood General Plan EIR, and supplemented by a check of traffic forecasts for the study area in the 2035/2040 Contra Costa Countywide travel demand model.

Cumulative Forecasts

The future conditions analysis considers development within the City of Brentwood as described in the Brentwood General Plan EIR, and supplemented by a check of traffic forecasts for the study area in the 2040 Contra Costa Countywide travel demand model and recent forecasts prepared for other projects.

Minor adjustments were made to the forecasts to balance traffic volumes between closely spaced intersections in the study area. The resulting Cumulative Without Project forecasts are representative of conditions over the next 20 to 25 years.

Cumulative Roadways Assumptions

Roadway improvements assumed for the analysis of Cumulative conditions include the planned extension of Amber Lane. The roadway was assumed to continue between Shady Willow Lane and Jeffery Way. No other intersection improvements beyond those to be constructed as part of the project were included in the peak hour intersection analysis.

The traffic forecasts consider a number of regional roadway improvements that could shift traffic volumes to other roadways, including the Sand Creek Road extension from its existing terminus at SR 4 through to Heidorn Ranch Road and Deer Valley Road beyond, and the Laurel Road extension.

Cumulative No Project LOS at Study Intersections

For the analysis of Cumulative conditions, peak hour factors, pedestrian, bicycle and heavy vehicle volumes were left unchanged from the analysis of the Existing conditions. Signal timings were optimized to better accommodate projected traffic volumes. The same signal timings were used for the analysis of without and with project conditions. The analysis results are presented in Table 21.

In the Cumulative No Project condition, two intersections are projected to operate at deficient service levels during at least one peak hour prior to the addition of project traffic:

- Lone Tree Way at SR 4 EB Ramps (LOS F, PM Peak Hour)
- Lone Tree Way at Shady Willow Lane and Slatten Ranch Road (LOS F, PM Peak Hour)

TABLE 21: CUMULATIVE CONDITION INTERSECTION LOS

Intersection	*Control[1]*	*Peak Hour*	*Delay[2,3]*	*LOS*
1. Lone Tree Way at SR 4 EB Ramps	Signal	AM	36	D
		PM	**118**	**F**
2. Lone Tree Way at SR 4 WB On-ramp/Jeffery Way	Signal	AM	20	C
		PM	24	C
3. Lone Tree Way at Slatten Ranch Shopping Center/Brentwood Station Access	Signal	AM	5	A
		PM	11	B
4. Lone Tree Way at Shady Willow Lane/Slatten Ranch Road	Signal	AM	34	C
		PM	**85**	**F**
5. Jeffery Way at Brentwood Station Access I/Project Access I[4]	SSSC	AM	1 (12)	A (B)
		PM	1 (14)	A (C)
6. Jeffery Way at Brentwood Station Access II/Project Access II[4]	SSSC/ Signal	AM	1 (25)	A (D)
		PM	1 (28)	A (D)
7. Jeffery Way at Brentwood Station Access III/Project Access III[4]	SSSC	AM	1 (12)	A (B)
		PM	1 (12)	A (B)
8. Jeffery Way at SR 4 WB Ramps	Signal	AM	19	B
		PM	28	C
9. Jeffery Way at Amber Lane (Exists only in Cumulative conditions)	SSSC	AM	8	A
		PM	8	A
10. Shady Willow Lane at Amber Lane	Signal	AM	18	B
		PM	16	B

*NOTES: **BOLD** TEXT INDICATES POTENTIALLY UNACCEPTABLE INTERSECTION OPERATIONS.*
1. SIGNAL = SIGNALIZED INTERSECTION; SSSC = SIDE-STREET STOP-CONTROLLED INTERSECTIONS; TRAFFIC ON THE MAIN STREET DOES NOT STOP WHILE TRAFFIC ON THE SIDE-STREET IS CONTROLLED BY A STOP SIGN.
2. AVERAGE INTERSECTION DELAY IS CALCULATED FOR ALL SIGNALIZED INTERSECTIONS USING THE 2010 HCM METHOD FOR VEHICLES.
3. FOR SSSC INTERSECTIONS, AVERAGE DELAY OR LOS IS LISTED FIRST FOLLOWED BY THE DELAY OR LOS FOR THE WORST APPROACH IN PARENTHESES.
4. INTERSECTION IS A THREE-LEG INTERSECTION THAT PROVIDES DRIVEWAY ACCESS TO PARCEL ON THE EAST SIDE OF JEFFERY WAY. IN ALL PLUS PROJECT SCENARIOS, THE INTERSECTION BECOMES A FOUR-LEG INTERSECTION AND PROVIDES DRIVEWAY ACCESS TO THE PROJECT SITE
SOURCE: FEHR & PEERS, 2017.

Cumulative No Project Signal Warrants

To assess the need for signalization of stop-controlled intersections, the MUTCD (Federal Highway Administration 2009) presents nine signal warrants. The Peak Hour Volume Warrant and the Peak Hour Delay Warrant was as a supplemental analysis tool to assess operations at unsignalized intersections.

Existing Plus Project Conditions

The following is a description of the Existing Plus Project conditions in the study area.

Existing Plus Project LOS at Study Intersections

The Existing Plus Project analysis results are presented in Table 22. As noted previously, in the Existing condition, all study intersections operate within the established LOS standard. The addition of project traffic would slightly increase average delay at the study intersections, but no intersections would degrade beyond their established LOS standard as a result of the project in the Existing Plus Project condition.

TABLE 22: EXISTING PLUS PROJECT CONDITIONS INTERSECTION LOS

Intersection	Control[1]	Peak Hour	Existing		Existing + Project	
			Delay[2,3]	LOS	Delay[2,3]	LOS
1. Lone Tree Way at SR 4 EB Ramps	Signal	AM	21	C	22	C
		PM	36	D	36	D
2. Lone Tree Way at SR 4 WB On-ramp/Jeffery Way	Signal	AM	26	C	32	C
		PM	30	C	52	D
3. Lone Tree Way at Slatten Ranch Shopping Center/Brentwood Station Access	Signal	AM	4	A	4	A
		PM	7	A	7	A
4. Lone Tree Way at Shady Willow Lane/Slatten Ranch Road	Signal	AM	34	C	35	C
		PM	49	D	33	D
5. Jeffery Way at Brentwood Station Access I/Project Access I[4]	SSSC	AM	1 (11)	A (B)	1 (12)	A (B)
		PM	1 (12)	A (B)	1 (14)	A (B)
6. Jeffery Way at Brentwood Station Access II/Project Access II[4]	SSSC	AM	1 (13)	A (B)	11	B
		PM	1 (15)	A (C)	7	A
7. Jeffery Way at Brentwood Station Access III/Project Access III[4]	SSSC	AM	1 (11)	A (B)	1 (12)	A (B)
		PM	1 (11)	A (B)	1 (12)	A (B)
8. Jeffery Way at SR 4 WB Ramps	Signal	AM	7	A	8	A
		PM	10	B	11	B
9. Jeffery Way at Amber Lane (Exists only in Cumulative conditions)	N/A	AM	N/A	N/A	N/A	N/A
		PM				
10. Shady Willow Lane at Amber Lane	Signal	AM	14	B	14	B
		PM	16	A	6	A

*NOTES: **BOLD** TEXT INDICATES POTENTIALLY UNACCEPTABLE INTERSECTION OPERATIONS.*

1. SIGNAL = SIGNALIZED INTERSECTION; SSSC = SIDE-STREET STOP-CONTROLLED INTERSECTIONS; TRAFFIC ON THE MAIN STREET DOES NOT STOP WHILE TRAFFIC ON THE SIDE-STREET IS CONTROLLED BY A STOP SIGN.

2. AVERAGE INTERSECTION DELAY IS CALCULATED FOR ALL SIGNALIZED INTERSECTIONS USING THE 2010 HCM METHOD FOR VEHICLES.

3. FOR SSSC INTERSECTIONS, AVERAGE DELAY OR LOS IS LISTED FIRST FOLLOWED BY THE DELAY OR LOS FOR THE WORST APPROACH IN PARENTHESES.

4. INTERSECTION IS A THREE-LEG INTERSECTION THAT PROVIDES DRIVEWAY ACCESS TO PARCEL ON THE EAST SIDE OF JEFFERY WAY. IN ALL PLUS PROJECT SCENARIOS, THE INTERSECTION BECOMES A FOUR-LEG INTERSECTION AND PROVIDES DRIVEWAY ACCESS TO THE PROJECT SITE.

SOURCE: FEHR & PEERS, 2017.

Existing Plus Project Signal Warrants

As noted previously, the Peak Hour Volume Warrant and the Peak Hour Delay Warrant was used as a supplemental analysis tool to assess operations at unsignalized intersections. The two right-in/right-out only driveways on Jeffery Way would not meet peak hour signal warrants with the addition of project traffic in the Existing Plus Project condition. The center driveway intersection on Jeffery Way would meet peak hour signal warrants with the addition of project traffic; however, a signal is planned to be installed as part of the project.

Existing Plus Project Intersection Queuing

Intersection queues were calculated for the intersection of Lone Tree Way and Jeffery Way for all movements in the northbound approach, and for the westbound left movement, as well as for the new signalized project access on Jeffery Way. As seen in Table 23, the addition of project traffic causes the westbound left-turn 95th percentile vehicle queue at the Lone Tree Way/Jeffery Way intersection to exceed the storage capacity in the PM peak hour. The northbound left queue

exceeds the storage capacity in both AM and PM peak hours in the Existing condition, which would be worsened with the addition of project traffic.

Vehicle queues at the signalized project driveway intersection would be contained within the available storage length.

TABLE 23: EXISTING PLUS PROJECT CONDITIONS VEHICLE QUEUE SUMMARY

Intersection	*Movement*	*Storage*	*Existing*				*Existing + Project*			
			AM Peak Hour		*PM Peak Hour*		*AM Peak Hour*		*PM Peak Hour*	
			50th	*95th*	*50th*	*95th*	*50th*	*95th*	*50th*	*95th*
Jeffery Way at Lone Tree Way	NB Left	220	**200**	**220**	**220**	**220**	**220**	**220**	**220**	**220**
	NB Through	530	200	270	270	360	230	300	310	420
	NB Right	530	0	50	70	140	20	90	170	260
	WB Left	320	20	40	130	180	130	270	190	**340**
Jeffery Way at Project Driveway	NB Left	290	--[1]	--[1]	--[1]	--[1]	10	30	10	60
	NB Through	520	--[1]	--[1]	--[1]	--[1]	30	120	50	170
	SB Let	240	--[1]	--[1]	--[1]	--[1]	10	30	10	30
	SB Through	530	--[1]	--[1]	--[1]	--[1]	30	100	30	110

*NOTES: **BOLD** TEXT INDICATES QUEUES THAT EXCEED STORAGE CAPACITY.*
1. INTERSECTION IS SIDE-STREET STOP-CONTROLLED IN THE EXISTING CONDITIONS, QUEUING CANNOT BE CAPTURED FOR UNCONTROLLED MOVEMENTS.
SOURCE: FEHR & PEERS, 2017.

Near-Term Plus Project Condition

The following is a description of the Near-Term Plus Project conditions in the study area.

Near-Term Plus Project LOS at Study Intersections

Near-Term conditions were evaluated using the methods described previously, with the analysis results presented in Table 24. As noted previously, in the Near-Term No Project condition, two intersections are projected to operate at deficient service levels during at least one peak hour prior to the addition of project traffic:

- Lone Tree Way at SR 4 EB Ramps (LOS E, PM Peak Hour)
- Lone Tree Way at Shady Willow Lane and Slatten Ranch Road (LOS E, PM Peak Hour)

The addition of project traffic would worsen the operation of the above intersections, but would not result in new deficiencies.

TABLE 24: NEAR-TERM PLUS PROJECT CONDITION INTERSECTION LOS

Intersection	Control[1]	Peak Hour	Near-Term Without Project		Near-Term With Project	
			Delay[2,3]	LOS	Delay[2,3]	LOS
1. Lone Tree Way at SR 4 EB Ramps	Signal	AM	25	C	24	C
		PM	**59**	**E**	**62**	**E**
2. Lone Tree Way at SR 4 WB On-ramp/Jeffery Way	Signal	AM	28	C	29	C
		PM	30	C	41	D
3. Lone Tree Way at Slatten Ranch Shopping Center/Brentwood Station Access	Signal	AM	4	A	4	A
		PM	8	A	8	A
4. Lone Tree Way at Shady Willow Lane/Slatten Ranch Road	Signal	AM	36	D	36	D
		PM	**64**	**E**	**71**	**E**
5. Jeffery Way at Brentwood Station Access I/Project Access I[4]	SSSC	AM	1 (11)	A (B)	1 (12)	A (B)
		PM	1 (14)	A (B)	1 (14)	A (C)
6. Jeffery Way at Brentwood Station Access II/Project Access II[4]	SSSC/ Signal	AM	1 (15.7)	A (C)	10	A
		PM	1 (20.7)	A (C)	11	B
7. Jeffery Way at Brentwood Station Access III/Project Access III[4]	SSSC	AM	1 (11)	A (B)	1 (12)	A (B)
		PM	1 (13)	A (B)	1 (14)	A (B)
8. Jeffery Way at SR 4 WB Ramps	Signal	AM	10	A	10	E
		PM	12	B	12	B
9. Jeffery Way at Amber Lane (Exists only in Cumulative conditions)	SSSC	AM	N/A	N/A	N/A	N/A
		PM				
10. Shady Willow Lane at Amber Lane	Signal	AM	15	B	15	B
		PM	11	B	11	B

*NOTES: **BOLD** TEXT INDICATES POTENTIALLY UNACCEPTABLE INTERSECTION OPERATIONS.*

1. SIGNAL = SIGNALIZED INTERSECTION; SSSC = SIDE-STREET STOP-CONTROLLED INTERSECTIONS; TRAFFIC ON THE MAIN STREET DOES NOT STOP WHILE TRAFFIC ON THE SIDE-STREET IS CONTROLLED BY A STOP SIGN.

2. AVERAGE INTERSECTION DELAY IS CALCULATED FOR ALL SIGNALIZED INTERSECTIONS USING THE 2010 HCM METHOD FOR VEHICLES.

3. FOR SSSC INTERSECTIONS, AVERAGE DELAY OR LOS IS LISTED FIRST FOLLOWED BY THE DELAY OR LOS FOR THE WORST APPROACH IN PARENTHESES.

4. INTERSECTION IS A THREE-LEG INTERSECTION THAT PROVIDES DRIVEWAY ACCESS TO PARCEL ON THE EAST SIDE OF JEFFERY WAY. IN ALL PLUS PROJECT SCENARIOS, THE INTERSECTION BECOMES A FOUR-LEG INTERSECTION AND PROVIDES DRIVEWAY ACCESS TO THE PROJECT SITE

SOURCE: FEHR & PEERS, 2017.

Near-Term Plus Project Signal Warrants

As noted previously, the Peak Hour Volume Warrant and the Peak Hour Delay Warrant was used in this study as a supplemental analysis tool to assess operations at unsignalized intersections. The two right-in/right-out only driveways on Jeffery Way would not meet peak hour signal warrants with the addition of project traffic in Near-Term condition. The center driveway intersection on Jeffery Way would meet peak hour signal warrants with the addition of project traffic in the Near-Term condition; however, a signal is planned to be installed as part of the project.

Near-Term Plus Project Intersection Queueing

Intersection queues were calculated for the intersection of Lone Tree Way and Jeffery Way for all movements in the northbound approach, and for the westbound left movement, as well as for the new signalized project access on Jeffery Way. As presented in Table 25, vehicle queues are generally expected to be contained within the available storage, expect for the northbound left-

turn movement, which currently exceeds the available storage length and extends into the adjacent left-through shared lane. With the addition of project traffic, the 95th percentile vehicle queue for the northbound left-through shared lane would extend beyond the adjacent intersection during the PM peak hour, and the 95th percentile westbound left-turn vehicle queue would exceed the storage capacity in the PM peak hour.

TABLE 25: NEAR-TERM PLUS PROJECT VEHICLE QUEUE SUMMARY

Intersection	Movement	Storage	Near-Term				Near-Term + Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			50th	95th	50th	95th	50th	95th	50th	95th
Jeffery Way at Lone Tree Way	NB Left	220	**220**	**220**	**220**	**220**	**220**	**220**	**220**	**220**
	NB Through	530	230	310	350	520	260	330	400	**610**
	NB Right	530	0	60	150	240	50	120	260	390
	WB Left	320	20	50	30	60	140	280	200	**350**
Jeffery Way at Project Driveway	NB Left	290	--[1]	--[1]	--[1]	--[1]	10	30	10	40
	NB Through	520	--[1]	--[1]	--[1]	--[1]	40	140	80	260
	SB Let	240	--[1]	--[1]	--[1]	--[1]	10	30	10	30
	SB Through	530	--[1]	--[1]	--[1]	--[1]	40	130	40	130

*NOTES: **BOLD** TEXT INDICATES QUEUES THAT EXCEED STORAGE CAPACITY.*
1. INTERSECTION IS SIDE-STREET STOP-CONTROLLED IN THE EXISTING CONDITIONS, QUEUING CANNOT BE CAPTURED FOR UNCONTROLLED MOVEMENTS.
SOURCE: FEHR & PEERS, 2017.

Vehicle queues at the signalized project driveway intersection would be contained within the available storage length.

Cumulative Plus Project Conditions

The following is a description of the Cumulative Plus Project conditions in the study area.

Cumulative Plus Project LOS at Study Intersections

Cumulative conditions were evaluated using the methods described previously, with the analysis results presented in Table 26. As noted previously, in the Cumulative No Project condition, two intersections are projected to operate at deficient service levels during at least one peak hour prior to the addition of project traffic:

- Lone Tree Way at SR 4 Eastbound Ramps (LOS F, PM Peak Hour)
- Lone Tree Way at Shady Willow Lane and Slatten Ranch Road (LOS F, PM Peak Hour)

The addition of project traffic would worsen the operation of the above intersections, but would not result in new deficiencies.

TABLE 26: CUMULATIVE PLUS PROJECT CONDITION INTERSECTION LOS

Intersection	Control[1]	Peak Hour	Cumulative Without Project		Cumulative With Project	
			Delay[2,3]	LOS	Delay[2,3]	LOS
1. Lone Tree Way at SR 4 EB Ramps	Signal	AM	36	D	37	D
		PM	**118**	**F**	**119**	**F**
2. Lone Tree Way at SR 4 WB On-ramp/Jeffery Way	Signal	AM	20	C	23	C
		PM	24	C	49	D
3. Lone Tree Way at Slatten Ranch Shopping Center/Brentwood Station Access	Signal	AM	5	A	5	A
		PM	11	B	11	B
4. Lone Tree Way at Shady Willow Lane/Slatten Ranch Road	Signal	AM	34	C	35	D
		PM	**85**	**F**	**101**	**F**
5. Jeffery Way at Brentwood Station Access I/Project Access I[4]	SSSC	AM	1 (12)	A (B)	1 (13)	A (B)
		PM	1 (14)	A (C)	1 (16)	A (C)
6. Jeffery Way at Brentwood Station Access II/Project Access II[4]	SSSC/ Signal	AM	1 (25)	A (D)	10	E
		PM	1 (28)	A (D)	12	B
7. Jeffery Way at Brentwood Station Access III/Project Access III[4]	SSSC	AM	1 (12)	A (B)	1 (13)	A (B)
		PM	1 (12)	A (B)	1 (14)	A (C)
8. Jeffery Way at SR 4 WB Ramps	Signal	AM	19	B	19	B
		PM	28	C	31	C
9. Jeffery Way at Amber Lane (Exists only in Cumulative conditions)	SSSC	AM	8	A	8	A
		PM	8	A	9	A
10. Shady Willow Lane at Amber Lane	Signal	AM	18	B	18	B
		PM	16	B	18	B

*NOTES: **BOLD** TEXT INDICATES POTENTIALLY UNACCEPTABLE INTERSECTION OPERATIONS.*
1. SIGNAL = SIGNALIZED INTERSECTION; SSSC = SIDE-STREET STOP-CONTROLLED INTERSECTIONS; TRAFFIC ON THE MAIN STREET DOES NOT STOP WHILE TRAFFIC ON THE SIDE-STREET IS CONTROLLED BY A STOP SIGN.
2. AVERAGE INTERSECTION DELAY IS CALCULATED FOR ALL SIGNALIZED INTERSECTIONS USING THE 2010 HCM METHOD FOR VEHICLES.
3. FOR SSSC INTERSECTIONS, AVERAGE DELAY OR LOS IS LISTED FIRST FOLLOWED BY THE DELAY OR LOS FOR THE WORST APPROACH IN PARENTHESES.
4. INTERSECTION IS A THREE-LEG INTERSECTION THAT PROVIDES DRIVEWAY ACCESS TO PARCEL ON THE EAST SIDE OF JEFFERY WAY. IN ALL PLUS PROJECT SCENARIOS, THE INTERSECTION BECOMES A FOUR-LEG INTERSECTION AND PROVIDES DRIVEWAY ACCESS TO THE PROJECT SITE
SOURCE: FEHR & PEERS, 2017.

Cumulative Plus Project Signal Warrants

As noted previously, the Peak Hour Volume Warrant and the Peak Hour Delay Warrant was used in this study as a supplemental analysis tool to assess operations at unsignalized intersections. The two right-in/right-out only driveways on Jeffery Way would not meet peak hour signal warrants with the addition of project traffic in the Cumulative condition. The center driveway intersection on Jeffery Way would meet peak hour signal warrants with the addition of project traffic in the Near-Term condition; however, a signal is planned to be installed as part of the project.

Conclusion

In the Existing Plus Project condition, the addition of project-generated vehicle trips in the PM peak hour would result in the 95th percentile westbound left-turn queue on Lone Tree Way at Jeffery Way to exceed the storage capacity. Based on the significance criteria, this is considered a **potentially significant** impact. Although the northbound left-turn movement queue from Jeffery

Way to Lone Tree Way currently extends beyond the available storage length of the exclusive left-turn pocket, vehicles then queue in the left-through shared lane, and this vehicle queue does not extend to the adjacent intersection. Therefore, the queue impact to the northbound approach is considered less than significant. Implementation of Mitigation Measure TRANS-1 would reduce this impact to a **less than significant** level.

In the Near-Term Plus Project condition, the addition of project-generated vehicle trips would worsen projected LOS E conditions during the PM peak hour, and increase average intersection delay by 3 seconds. Based on the significance criteria, this is considered a **potentially significant** impact. The analysis of Near-Term conditions was conducted using existing signal timings; signal timing optimization reduces delay, but does not result in acceptable levels of service. Implementation of Mitigation Measure TRANS-2 would reduce this impact to a **less than significant** level.

In the Near-Term Plus Project condition, the addition of project-generated vehicle trips would worsen projected LOS E conditions during the PM peak hour, and increase average intersection delay by 7 seconds. Based on the significance criteria, this is considered a **potentially significant** impact. The analysis of Near-Term conditions was conducted using existing signal timings; signal timing optimization reduces delay to LOS D conditions. Implementation of Mitigation Measure TRANS-3 would reduce this impact to a **less than significant** level.

In the Near-Term Plus Project condition, the addition of project-generated vehicle trips in the PM peak hour would result in the 95th percentile westbound left-turn queue on Lone Tree Way at Jeffery Way to exceed the storage capacity. Based on the significance criteria, this is considered a **potentially significant** impact. The northbound left-turn movement queue from Jeffery Way to Lone Tree Way currently extends beyond the available storage length of the exclusive left-turn pocket, vehicles then queue in the left-through shared lane. In the Near-Term condition with the addition of project traffic, the 95th percentile northbound left-through vehicle queue could extend to the adjacent intersection, resulting in a **potentially significant** impact. Implementation of Mitigation Measure TRANS-1 would reduce this impact to a **less than significant** level.

In the Cumulative Plus Project condition, the addition of project-generated vehicle trips would worsen projected LOS E operating during the PM peak hour, and increase average intersection delay by 1 second. Based on the significance criteria, this is considered a **potentially significant** impact. Project related traffic at the intersection of Lone Tree Way and SR 4 EB ramps ranges between 1 percent and 5 percent depending on the time of day and roadway segment, with project traffic, on average, comprising approximately 3 percent of the total cumulative volume. Implementation of Mitigation Measure TRANS-2 would reduce this impact to a **less than significant** level.

In the Cumulative Plus Project condition, the addition of project-generated vehicle trips would worsen projected LOS E operating during the PM peak hour, and increase average intersection delay by 16 seconds. Based on the significance criteria, this is considered a **potentially significant** impact. Implementation of Mitigation Measure TRANS-3 would reduce this impact to a **less than significant** level.

In the Cumulative Plus Project condition, the addition of project-generated vehicle trips in the PM peak hour would worsen the projected northbound queue lengths on Jeffery Way and would cause them to extend past the newly signalized intersection. Based on the significance criteria, this is considered a **potentially significant** impact. Implementation of Mitigation Measures TRANS-1 and TRANS-3 would reduce this impact to a **less than significant** level.

Mitigation Measure(s)

Mitigation Measure TRANS-1: *The project applicant shall restripe the westbound left-turn pocket on Lone Tree Way at Jeffery Way to provide a second westbound left-turn lane; the second receiving lane would be constructed as part of the project. Additionally, the new traffic signal at the project driveway shall be interconnected and coordinated with the two adjacent intersections at Jeffery Way/SR 4 WB Ramps and Lone Tree Way/SR 4 Ramps/Jeffery Way such that vehicle queues can be metered and managed. This improvement can be constructed within the existing pavement cross-section and would not increase the pedestrian crossing distance at the intersection. These details shall be reflected on the project's improvement plans.*

Mitigation Measure TRANS-2*: Prior to issuance of grading permits, the project applicant shall contribute their fair share to intersection improvements that would result in acceptable operations. Any potential secondary impact to pedestrians for all hours of the day shall be balanced against an intersection modification to improve vehicle travel during peak time periods. These details shall be reflected on the project's improvement plans.*

Mitigation Measure TRANS-3: *Prior to issuance of grading permits, the project applicant shall pay their fair share towards the retiming of traffic signals at the Lone Tree Way/Shady Willow Lane/Slatten Ranch Road intersection, which could include converting the north/south split phasing to north/south lead/lag phasing.*

Response c): Less than Significant. The project site is not within an airport land use plan or within two miles of an airport. The nearest airport, Funny Farm Airport, is a private airfield located approximately 5.3 miles southeast of the project site. The proposed project would not require any changes to existing regional air traffic activity and the nearest airport, Funny Farm Airport, is a private airfield. This impact is **less than significant**, and no mitigation is required.

Responses d) and e): **Less than Significant with Mitigation.** This section provides a high-level overview of site access and internal circulation.

Vehicular Site Access and Circulation

Vehicular access is proposed to occur from three driveways on Jeffery Way. Two driveways are proposed to be right-in/right-out only. The center driveway would be aligned with an existing driveway that serves the Brentwood Station shopping center, and is proposed to be signalized and provide full site access.

The project proposes three drive-through uses. For most of the uses, vehicle queues at the drive through, if they exceed the available storage, would spillback to the parking area. While this queue spillback could momentarily affect on-site circulation, it would not affect through traffic

on the City streets. For the potential Chick-Fil-A site, stacking for approximately 25 to 30 vehicles is provided. This level of vehicle storage is expected to be more than sufficient for typical peak demands. However, there could be periods of time when there is atypical demand and given the proximity of the restaurant to an entrance on Jeffery Way, there is a probability that vehicle queues could spillback to the public street if not managed.

Emergency Vehicle Access

Several factors determine whether a project has sufficient access for emergency vehicles, including:

1. Number of access points (both public and emergency access only)
2. Width of access points
3. Width of internal roadways

The site plan provides three vehicle access points on Jeffery Way. If one of these roadways was blocked or obstructed, emergency vehicles would have an alternative route to access the site. Based on preliminary site plan information, project driveways and drive aisles provide a minimum of 24-feet clear travel area which is sufficient for emergency vehicle access and circulation.

Conclusion

The proposed site plan provides adequate access to the project site, which would adequately accommodate emergency vehicles. Implementation of the proposed project would have a less than significant impact related to emergency access, and would not interfere with an emergency evacuation plan. However, mitigation may be required in order to ensure that adequate queue lengths and turning lanes are provided at the proposed drive thru areas and the proposed site access points. With implementation of the following mitigation measures, this impact would be **less than significant**.

Mitigation Measure(s)

Mitigation Measure TRANS-4: *Prior to approval of improvement plans, the project applicant shall perform a comprehensive site plan evaluation to ensure safe and efficient site access and circulation for vehicles, bicycles, pedestrians and transit users. The site plan shall be reviewed in terms of the following:*

1. *Vehicular circulation within the site*
2. *Vehicle queue stacking within site for the proposed drive-through locations*
3. *Parking layout and circulation within the site, including parking supply assessment*
4. *Pedestrian access and circulation within and adjacent to the site*
5. *Bicycle access and circulation within and adjacent to the site*
6. *Transit and shuttle vehicle circulation adjacent to site*
7. *Pedestrian access to and from transit stops*

Mitigation Measure TRANS-5: *Based on the projected level of through traffic on Jeffery Way, lane utilization, and the level of traffic that is expected to enter the site from the northernmost driveway, a southbound right-turn only lane shall be constructed on Jeffery Way into the northernmost right-in/right-out driveway. This turn pocket shall be 100 feet in length, with the associated bay taper length. These details shall be reflected on the project's improvement plans.*

Mitigation Measure TRANS-6: *As part of the signalization at the center driveway on Jeffery Way, crosswalks with pedestrian actuation shall be provided. This signal shall be interconnected and coordinated with the adjacent traffic signals. These details shall be reflected on the project's improvement plans.*

Mitigation Measure TRANS-7: *Prior to approval of improvement plans, a queue management plan shall be developed for the Chick-Fil-A restaurant that may include temporary rerouting of vehicles through the Chick-Fil-A parking field to increase on-site vehicle storage.*

Response f): Less than Significant with Mitigation. The guests and employees of the proposed project will have the option of driving, taking transit, walking or bicycling to and from the proposed project. As part of the project's TIA, the proposed project was evaluated to determine if it would likely conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks) or generate pedestrian, bicycle, or transit travel demand that would not be accommodated by existing transit, bicycle, or pedestrian facilities and plans.

Transit

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. Route 383, Route 385 and Route 395 run on Lone Tree Way, with bus stops on Lone Tree Way west of Canada Valley Road for both directions of travel.

Route 383 operates on Weekdays only headways varying between one and two hours. The service connects the Hillcrest Park & Ride lot and a number of schools, retail centers and other destinations between 18th Street, Empire Avenue, Lone Tree Way and Deer Valley Road.

Route 385 operates on Weekdays only with one-hour headways. The service runs between the Hillcrest Park & Ride lot, the John Muir Medical Center and the Brentwood Park & Ride lot.

Route 395 operates on Saturdays only with one-hour headways. The service runs between the Hillcrest Park & Ride lot and the shopping plazas on Lone Tree Way and Sand Creek Road between Empire Avenue and SR 4.

Although there is currently no transit service in the vicinity of the project site, it is expected that some customers or employees may use transit. Therefore, consultation should occur with Tri Delta Transit to identify potential transit amenities adjacent to the development.

Pedestrian

Pedestrian facilities in the project area include sidewalks, crosswalks, pedestrian signals and multi-use trails. Improved roadways in the project area generally provide sidewalks on both sides of the street with a landscape buffer. No sidewalks are provided on either side of Jeffery Way in the project vicinity. Sidewalks exist on both sides of Lone Tree Way in the project vicinity. At the signalized intersections in the area, crosswalks and pedestrian push-button actuated signals are provided.

The preliminary project plans indicate that sidewalks would be constructed along the Jeffery Way project frontage with landscape buffers. Sidewalks would also be provided to connect building entrances to the public pedestrian system.

With planned improvements, the project does not result in any unsafe condition for pedestrians and does not conflict with planned pedestrian facilities identified in adopted plans. Thus, the project's impact on pedestrian circulation is not considered significant.

Bicycle

Bicycle facilities 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.
- **Separated Bikeway (Class IV)** – Separated bikeways, also referred to as cycle tracks or protected bikeways, are bikeways for the exclusive use of bicycles which are physically separated from vehicle traffic. Separated Bikeways were recently adopted by Caltrans in 2015. Types of separation may include, but are not limited to, grade separation, flexible posts, physical barriers, or on-street parking.

The City of Brentwood currently has ten miles of Class I Bicycle paths and sixteen miles of Class II bike lanes. The Mokelumne Class I trail is located approximately ¼-mile south of the project site along the Grant Street alignment. In the immediate project area, there are Class II bike lanes along Jeffery Way and Shady Willow Lane. Class II facilities are also provided on Lone Tree Way, east of Empire Avenue.

As part of the project, bicycle lanes would be maintained on Jeffery Way with the widening along the project frontage. The proposed development will not alter existing bicycle facilities in the area. Thus, the project's impact on bicycle circulation is not considered significant.

Conclusion

Overall, project implementation would not result in significant impacts to pedestrian or bicycle facilities in the area. As noted above, it is expected that some customers or employees may use transit. Consultation should occur with Tri Delta Transit to identify potential transit amenities adjacent to the development. Therefore, with implementation of the following mitigation, the project would have a **less than significant** impact on public transit, pedestrian, and bicycle facilities.

Mitigation Measure(s)

Mitigation Measure TRANS-8: *Prior to approval of improvement plans, the project applicant shall consult with Tri Delta Transit to identify potential transit amenities adjacent to the development.*

XVII. TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
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:				
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)?		X		
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 resources to a California Native American tribe.		X		

BACKGROUND

Assembly Bill 52 (AB 52) requires a lead agency, prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if: (1) the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe, and (2) the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation. The City of Brentwood received requests from two California Native American tribes to be informed through formal notification of proposed projects in the City's geographic area. No requests for consultation were received from either tribe with respect to this project.

RESPONSES TO CHECKLIST QUESTIONS

Responses a-b): Less than Significant with Mitigation. The City of Brentwood General Plan and subsequent EIR does not identify the site as having prehistoric period cultural resources. Additionally, there are no unique cultural resources known to occur on, or within the immediate vicinity of the project site. The site has previously been used for agricultural uses. No instances of cultural resources or human remains have been unearthed on the project site. Based on the above information, the project site has a low potential for the discovery of prehistoric, ethnohistoric, or historic archaeological sites that may meet the definition of Tribal Cultural Resources. Although no Tribal Cultural Resources have been documented in the project site, the project is located in a region where cultural resources have been recorded and there remains a potential that undocumented archaeological resources that may meet the Tribal Cultural Resource definition could be unearthed or otherwise discovered during ground-disturbing and

construction activities. Examples of significant archaeological discoveries that may meet the Tribal Cultural Resources definition would include villages and cemeteries.

Due to the possible presence of undocumented Tribal Cultural Resources within the project site, construction-related impacts on tribal cultural resources would be potentially significant. Implementation of Mitigation Measures CUL-1 and CUL-2 would require appropriate steps to preserve and/or document any previously undiscovered resources that may be encountered during construction activities, including human remains. Implementation of this measure would reduce this impact to a **less than significant** level.

Mitigation Measure(s)

Implement Mitigation Measures CUL-1 and CUL-2

XVIII. UTILITIES AND SERVICE SYSTEMS -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			X	
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?		X		
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			X	
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments?			X	
f) Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs?			X	
g) Comply with federal, state, and local statutes and regulations related to solid waste?			X	

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b), and e): Less than Significant. The following discussion addresses available wastewater treatment plant (WWTP) capacity and wastewater infrastructure to serve the project site.

Wastewater Treatment Plant Capacity

The existing WWTP is located on approximately 70 acres of land owned by the City on the north side of Sunset Road and east of Brentwood Boulevard. The WWTP is designed to have sufficient capacity to handle all wastewater flows at build-out per the General Plan. The WWTP has a current treatment capacity of 5 million gallons per day (mgd) with an average dry weather flow (ADWF) of 3.8 mgd in 2017.

The current WWTP system is designed to expand to 10 mgd in 2.5 mgd increments and the City collects development impact fees from new development to fund future expansion efforts. Phase I of the WWTP expansion was completed in 1998-2002, to bring the treatment plant to current

levels. Preliminary planning of the Phase II expansion of the WWTP has been completed. Final design is currently underway and construction would follow after that. The existing 5 MGD (Million Gallons per Day) tertiary treatment facility was planned and constructed to accommodate future expansions, of up to 10 MGD. The original facility was designed based on 100 GPD (Gallons Per Day) per capita flow but the average flow in the last seven years has been 64 GPD per capita. The Phase II Expansion is designed to treat 6.4 MGD flow based on 69 GPD per capita, which will service the final buildout population of the city per the current General Plan. The project includes the addition of one diffused air oxidation basin, retrofit of existing oxidation ditches to diffused air, secondary clarifiers, converting chlorine contact facilities to free chlorine disinfection, new solids mechanical dryer, dried bio-solids storage building, Electrical Distribution System Upgrade and all related appurtenances. This project is necessary to keep the city in compliance with ever more stringent discharge requirements. The expansion will also accommodate the planned and approved development within the city.

The proposed project includes development of six commercial and retail buildings totaling 62,170 sf on the 7.63-acre project site. The six buildings would be constructed as follows:

- 38,000 sf fitness center (24 Hour Fitness);
- 5,400 sf commercial with drive-through (two tenants);
- 4,000 sf commercial/retail (one tenant);
- 6,510 sf restaurant (one tenant);
- 3,285 sf drive-through restaurant (one tenant); and
- 4,975 sf drive-through restaurant (Chick-Fil-A).

The 2014 Brentwood General Plan Update EIR uses a wastewater generation factor of 1,785 gallons per day per acre of commercial, office, business park, and industrial development. Utilizing this rate, the proposed fitness center, restaurant, and other commercial and retail uses would generate approximately 13,620 gallons per day (0.01362 mgd). Therefore, the current capacity of the WWTP would be sufficient to handle the wastewater flow from the proposed project. In addition, the proposed project is required to pay sewer impact fees which would contribute towards the cost of future upgrades, when needed. As a result, the proposed project would not have adverse impacts to wastewater treatment capacity.

Wastewater Infrastructure

The wastewater generated by the project would be collected by an internal sewer system. The project includes installation of sanitary sewer lines within the internal driveway and roadways which would connect to the existing lines along Jeffery Way and Lone Tree Way.

Conclusion

Because the project applicant would pay City sewer impact fees, and adequate long-term wastewater treatment capacity is available to serve full build-out of the project, a **less than significant** impact would occur related to requiring or resulting in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Response c): Less than Significant with Mitigation. As discussed in Questions 'c-e' of Section IX, Hydrology and Water Quality, of this IS/MND, according to the preliminary stormwater quality control plan for the project, seven bio-retention treatment areas would be located throughout the project site in order to serve the seven drainage management areas. Stormwater from the proposed project site would drain to storm drain catch basins. Low flows will percolate through the basin before being released into the stormdrain system. Project runoff from all seven drainage management areas would be self-treated on-site via the proposed bioretention areas.

The expansion and long-term maintenance of the local storm water drainage facilities could cause a potentially significant effect. However, implementation of the mitigation measures listed below would reduce impacts to **less than significant**.

Mitigation Measure(s)
Implement Mitigation Measures HYD-1, HYD-2, HYD-3, HYD-4, and HYD-5.

Response d): Less than Significant. The following discussion addresses available water supply infrastructure to serve the project site.

Water Supply System

The City of Brentwood has prepared a 2015 Urban Water Management Plan (UWMP) that predicts the water supply available to the City of Brentwood in normal, single-dry, and multiple-dry years out to 2035. The total supply available in 2035 during all scenarios (normal, single-dry, and multiple-dry) well exceeds the projected demand. The future demand projections included in the UWMP are based upon General Plan land uses. The proposed project's use is consistent with the General Plan; therefore, the proposed project's future water demand was considered in the UWMP. As a result, with respect to the availability of sufficient water supplies to serve the project, the impact from the proposed project would be **less than significant**.

Water Supply Infrastructure

The project would involve the construction of the necessary water infrastructure to serve the proposed buildings. The project includes installation of water lines within the internal driveway and roadways which would connect to the existing mains along Jeffery Way and Lone Tree Way.

Conclusion

Because adequate long-term water supply is available to serve full buildout of the proposed project and the project includes the extension of adjacent water line infrastructure, the project's impact to water supply would be **less than significant**.

Responses f) and g): Less than Significant. The City's Solid Waste Division, a division of the Public Works Department, provides municipal solid waste collection and transfer services for residential and commercial use within the City of Brentwood. The solid waste from Brentwood is disposed of at Keller Canyon County landfill. Keller Canyon Landfill covers 2,600 acres of land; 244 acres are permitted for disposal. The site currently handles 2,500 tons of waste per day, although the permit allows up to 3,500 tons of waste per day to be managed at the facility. As of

September 2008, the remaining capacity of the landfill's disposal area is estimated at 60-64 million cubic yards, and the estimated closing date for the landfill is 2050[11]. Because the 2014 Brentwood General Plan Update EIR determined that solid waste capacity is adequate to serve the demand resulting from General Plan build-out and the proposed project's use is consistent with the General Plan designation for the project site; the project's impact to solid waste would be less than significant. This is a **less than significant** impact.

[11] City of Brentwood. *2014 Brentwood General Plan Update EIR* [pg. 3.14-45]. July 22, 2014.

XVIV. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			X	
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)?			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant. Although relatively unlikely, based upon the current land cover types found onsite, special-status wildlife species and/or federally- or state-protected birds not covered under the ECCC HCP/NCCP could be occupying the site. In addition, although unlikely, the possibility exists for subsurface excavation of the site during grading and other construction activities to unearth deposits of cultural significance. However, this IS/MND includes mitigation measures that would reduce any potential impacts to less than significant levels. Therefore, the proposed project would have **less than significant** impacts related to degradation of the quality of the environment, reduction of habitat, threatened species, and/or California's history or prehistory.

Response b): Less than Significant. Development that converts undeveloped areas to urban uses may be regarded as achieving short-term goals to the disadvantage of long-term environmental goals. However, the inevitable impacts resulting from population and economic growth are mitigated by long-range planning to establish policies, programs, and measures for the efficient and economical use of resources. Long-term environmental goals, both broad and specific, have been addressed previously in the 2014 Brentwood General Plan Update, adopted on July 22, 2014. As discussed throughout this IS/MND, the proposed project would comply with all relevant goals set forth in the General Plan. Therefore, the impact is **less than significant**.

Response c): Less than Significant. The proposed project in conjunction with other development within the City of Brentwood could incrementally contribute to cumulative impacts in the area. However, mitigation measures for all potentially significant project-level impacts identified for the proposed project in this IS/MND have been included that would reduce impacts

to less than-significant levels. As such, the project's incremental contribution towards cumulative impacts would not be considered significant. In addition, all future discretionary development projects in the area would be required to undergo the same environmental analysis and mitigate any potential impacts, as necessary. Therefore, the proposed project would not have any impacts that would be cumulatively considerable, and impacts would be **less than significant**.

Response d): Less than Significant. The proposed project site is located within areas of existing and planned development and is consistent with the land use designation for the site. Due to the consistency of the proposed land use, substantial adverse effects on human beings are not anticipated with implementation of the proposed project. It should be noted that during construction activities, the project could result in potential impacts related to soil erosion. However, this IS/MND includes mitigation measures that would reduce any potential impacts to a less-than-significant level. In addition, the proposed project would be designed in accordance with all applicable building standards and codes to ensure adequate safety is provided for the future customers of the proposed project. Therefore, impacts related to environmental effects that could cause adverse effects on human beings would be **less than significant**.

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