INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

FOR THE

ARCO AM/PM PROJECT

APRIL 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

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A Land Use Planning, Design, and Environmental Firm

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TABLE OF CONTENTS

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INITIAL STUDY

PROJECT TITLE

ARCO AM/PM 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

Patrick Lemons
BP West Coast Products, LLC
P.O. Box 6038
Artesia, CA 90702

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 ARCO AM/PM 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 2.236 acres located at the northeast corner of Brentwood Boulevard and Sunset Road within the City of Brentwood. The project site is identified by Assessor Parcel Number (APN) 018-190-034. 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 occupied by a residence with four associated outbuildings, miscellaneous hardscape surface improvements, gravel paving, non-native trees, and grasses. The home does not appear to be occupied at this time as the site, including the driveways, is surrounded by a chain link fence and the windows on the structures are covered with ply-wood. The project site contains approximately 28 trees scattered throughout the site. Figure 3 shows an aerial view of the project site.

SURROUNDING LAND USES

The project site is bound by Sunset Road to the south, Brentwood Boulevard to the west, Homecoming Way to the north, and McHenry Way to the east. The area to the north of the project site opposite Homecoming Way is currently vacant and undeveloped commercial land. Lands to the east of the project site opposite McHenry Way consist of Marsh Creek and the associated Marsh Creek Regional Trail, Homecoming Park, a City-owned industrial property, and single-family residential uses. The parcel to the south of the project site, opposite Sunset Road and the Mokelumne Coast to Crest Trail, contains one vacant commercial building. The parcels to the west, opposite Brentwood Boulevard, consist of residential and commercial uses, including the City of Hope Church and Delta Fence Company.

PROJECT DESCRIPTION

The proposed project includes development of an ARCO AM/PM gas station with 18 fuel stations, and an associated single-story, 3,195 square foot (sf) convenience store with a 1,021-sf drive-through car wash on the southern 1.11-acre portion of the project site. The project site plan is shown in Figure 4, and the project plans are included as Appendix A. The water from the car wash would be collected and recycled, and all washing would occur within a covered structure. Additionally, the project includes development assumptions for the northern 0.83-acre portion of the project site consisting of a 4,000-square-foot fast-food restaurant facility with drive-through. All existing structures, foundations, surfacing, etc. would be demolished and removed as part of the project.

The heights of the proposed structures would range from 14.5 to 24.5 feet in height. The proposed convenience store building would be approximately 24.5 feet tall at the top of the proposed logo tower, and 14.5 to 16.5 feet tall for the remainder of the building. The convenience store building would include a mix of materials, varied roof lines, and building recesses and articulations. Landscaping would be provided throughout the site.

The project includes development of all associated supporting infrastructure (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.

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 (Brentwood Boulevard, Sunset Road, Homecoming Way, and McHenry Way). Sanitary sewer lines ranging in size from four to eight inches are currently located along McHenry Way and Homecoming Way. Water lines ranging in size from eight to 36 inches are currently located along Brentwood Boulevard, Sunset Road, and Homecoming Way. Additionally, non-potable water lines are present along Brentwood Boulevard and Sunset Road. Finally, eight to 18-inch storm drainage lines are currently located along McHenry Way and a portion of the Sunset Road frontage.

Access to the project site would be provided along Brentwood Boulevard, McHenry Way, and Homecoming Way. A proposed east-west roadway would be constructed through the center of the site, separating the northern and southern portions of the project site.

Figure 4 shows a vacant area for the northern 0.83-acre portion of the site. As noted previously, the project assumes development of a 4,000-square-foot fast-food restaurant facility with drive-through at this location. However, no buildings are currently proposed for this portion of the site, no tenant has been identified, and the City has not received any applications for development of this portion of the site. In the event that the City receives a development application for the northern portion of APN 018-190-034, the City would undertake the appropriate level of project review. 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 Brentwood Boulevard Specific Plan (BBSP) by the Brentwood General Plan Land Use Map. The BBSP designation provides for the current and future uses along the Brentwood Boulevard corridor, in accordance with the BBSP. The BBSP designation accommodates a range of residential, commercial, office, mixed use, and other complementary uses that encourage the revitalization of the Brentwood Boulevard corridor within the BBSP area.

The BBSP land use map designates land along Brentwood Boulevard as Medium Density Residential, High Density Residential, Mixed-Use: Commercial / Office / Industrial / Residential, Mixed-Use: Commercial / Office / Industrial, General Commercial, and Open Space. The BBSP

designates the proposed project site for General Commercial uses. The following uses are permitted within the General Commercial BBSP area:

A. Retail sales.
B. Restaurants operating between the hours of 7:00 am and 10:00 pm, including those that sell alcohol for on-premise consumption.
C. Personal services, including day spas.
D. Service uses, including copying, printing, and stenography.
E. Bed and breakfast establishments.
F. Hotels and motels.
G. Business, professional, medical, and dental offices.
H. Indoor health clubs.
I. Similar uses as determined by the Community Development Director.

The following uses are conditionally permitted within the General Commercial BBSP area:

A. Educational, instructional and/or training facilities or campuses including classrooms, administrative office space, and student and faculty services.
B. Alcohol sales for off-premise consumption.
C. Child care facilities.
D. Drive-through uses.
E. Other uses that the Community Development Director determines, because of type of operation, material stored or sold, or other special circumstances require special consideration and regulations through the conditional use permit procedure provided the use is consistent with the goals of the BBSP.

A General Plan Amendment would not be required for the project. However, because the proposed gas station portion of the project is not a permitted use, a Conditional Use Permit would be required. The BBSP requires that buildings on properties designated for General Commercial development must measure 20 feet high, but no more than 30 feet high. A review of the City's BBSP and Design Guidelines would be required in regard to architecture as the proposed elevations are not in compliance with either document.

The project site is currently zoned Brentwood Boulevard Specific Plan (BBSP) by the Brentwood Zoning Map. A Zoning Amendment would not be required for the project. The existing General Plan land use and zoning designations for the project site are shown on Figure 5 and Figure 6, respectively.

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);
- Approval of the requested Conditional Use Permit for the proposed uses;
- Design Review of the proposed gas station and convenience store.

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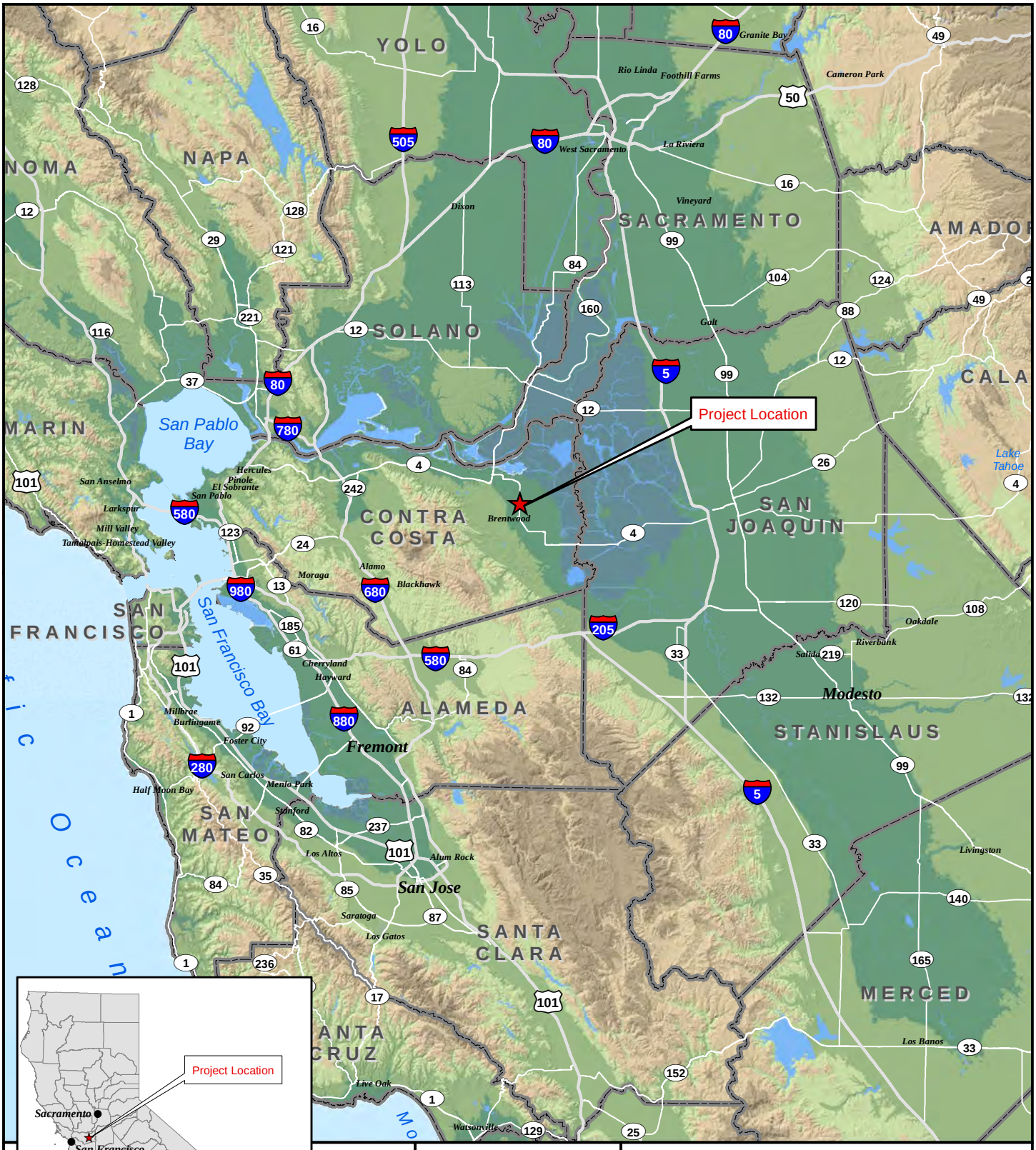

Sources: CalAtlas. Map date: August 28, 2017.

0 5 10
Miles

CITY OF BRENTWOOD - ARCO AM/PM

Figure 1: Regional Location Map

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Legend

- Project Location
- City of Brentwood
- Aqueduct
- Marsh Creek
- Marsh Creek Trail
- School
- Park
- Shopping Center
- Industrial Area
- Public Facility

0 250 500
Feet

Sources: Contra Costa County; OpenStreets; Google Maps.
Map date: August 30, 2017.

CITY OF BRENTWOOD - ARCO AM/PM

Figure 2. Vicinity Map

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Legend

Project Location

N

0 50 100

Feet

Sources: Contra Costa County; OpenStreets; ArcGIS Online World Imagery Map Service. Map date: August 29, 2017.

CITY OF BRENTWOOD - ARCO AM/PM

Figure 3. Aerial View of Project Site

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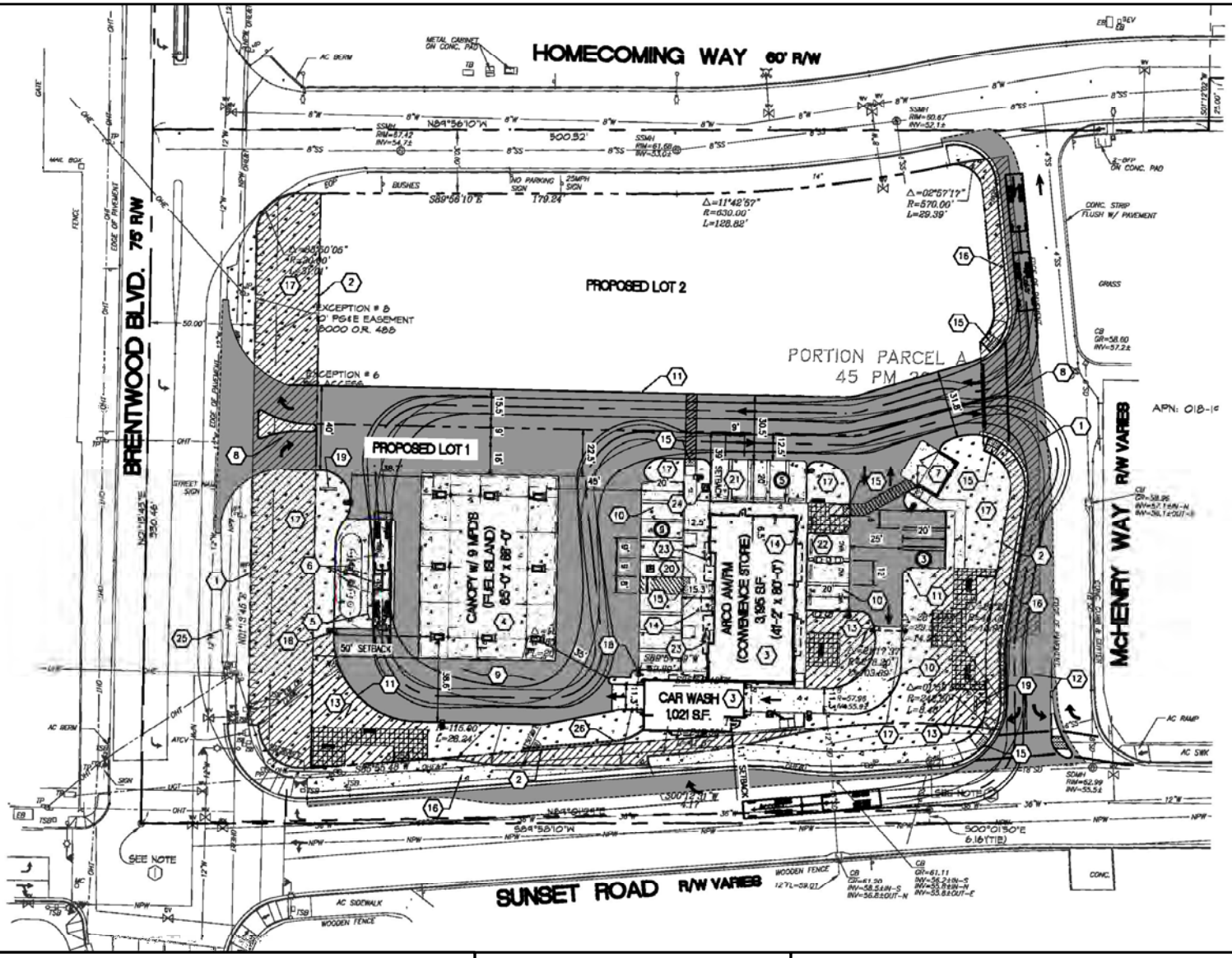

CITY OF BRENTWOOD - ARCO AM/PM

Figure 4. Site Plan

Source: Barghausen Consulting Engineers, Inc., 1/9/2017.
Map date: August 29, 2017.

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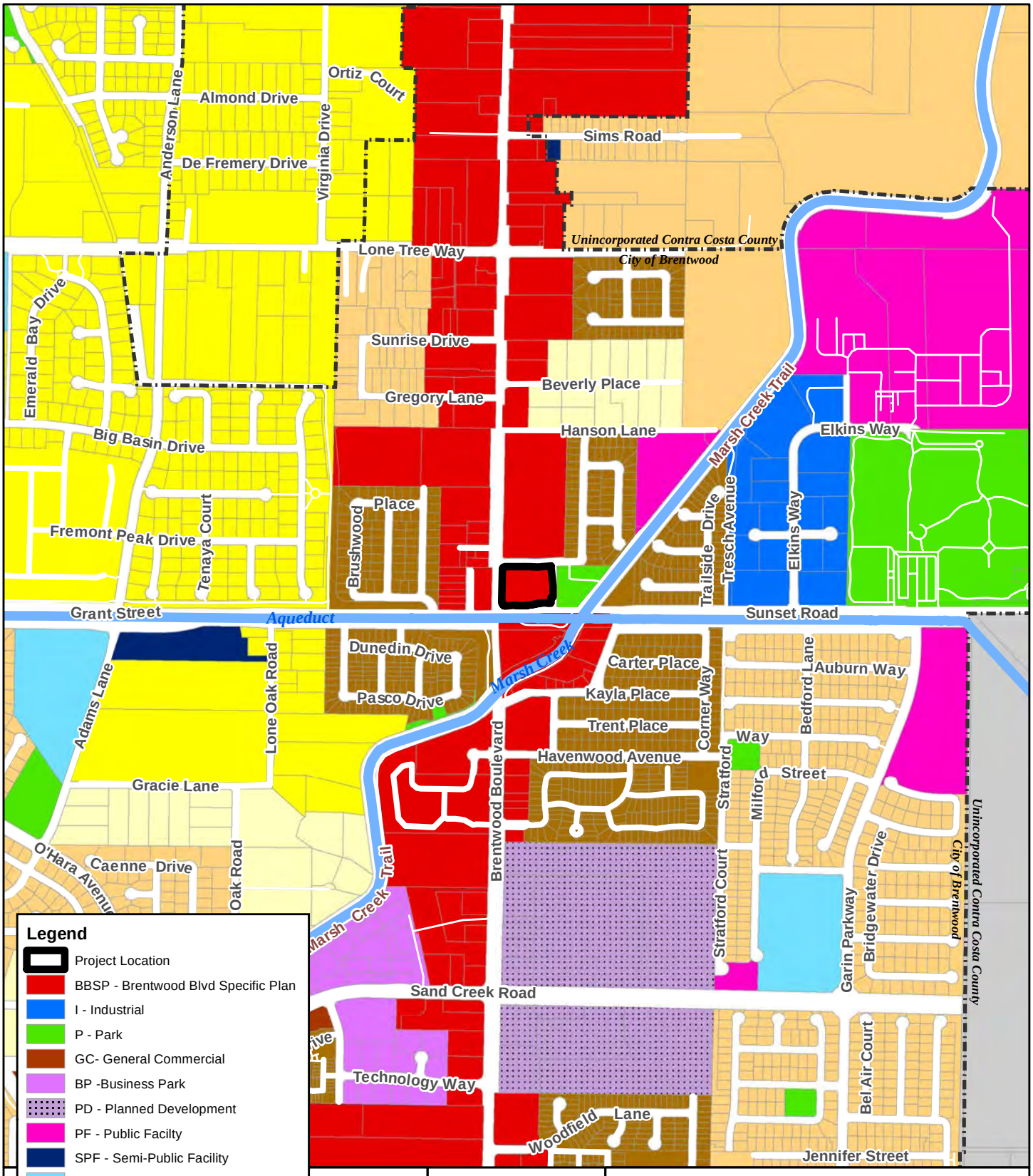

Sources: Contra Costa County; OpenStreets; City of Brentwood.
Map date: August 29, 2017.

CITY OF BRENTWOOD - ARCO AM/PM

Figure 5. Existing General Plan Land Use Map

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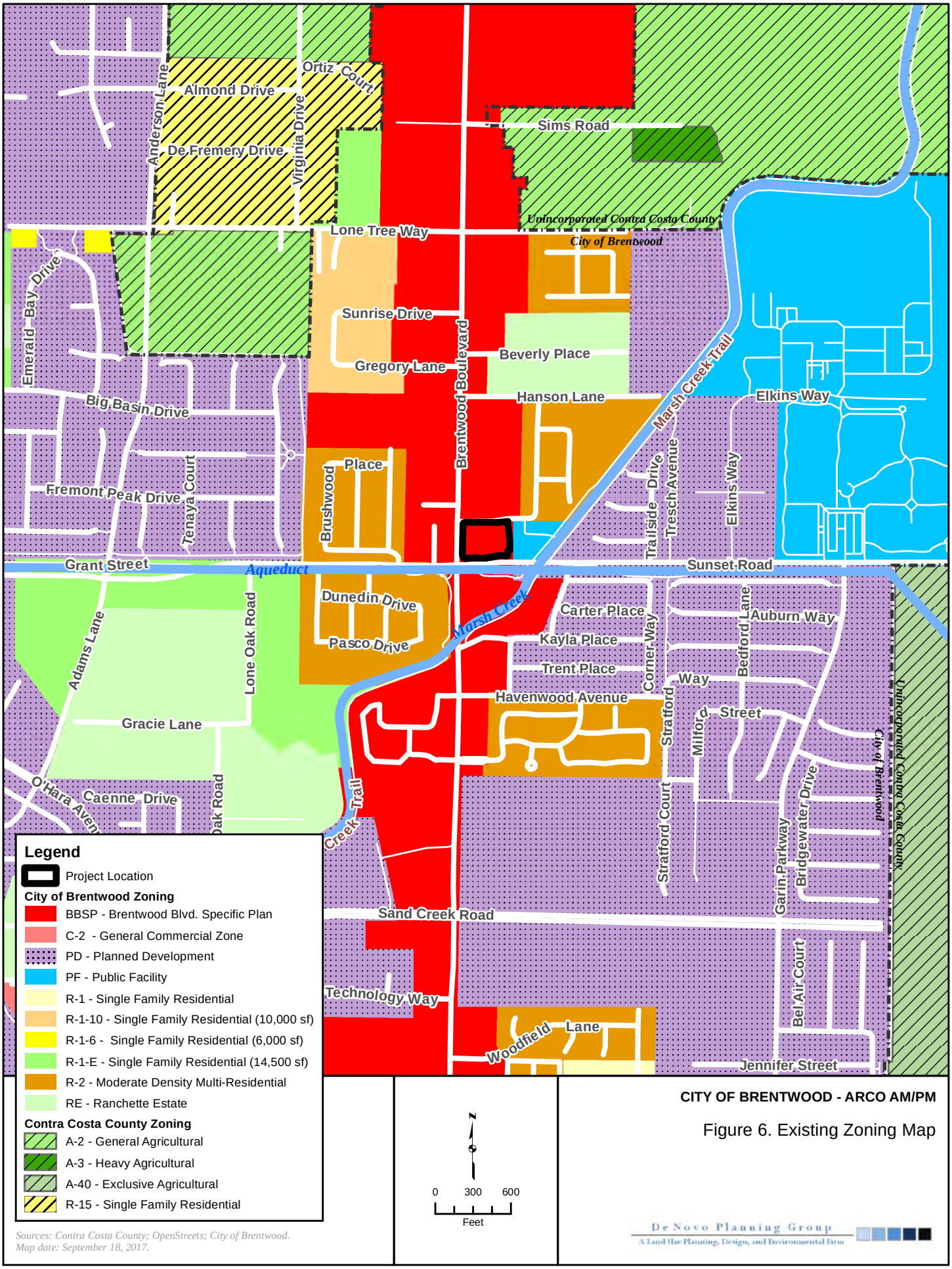

Sources: Contra Costa County; OpenStreets; City of Brentwood.
Map date: September 18, 2017.

CITY OF BRENTWOOD - ARCO AM/PM

Figure 6. Existing Zoning Map

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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) located approximately 2.6 miles to the west of the project site is listed as an Eligible State Scenic Highway, but has not yet been officially designated. The project would not damage any scenic resources, such as trees, rock outcroppings, or historic buildings, within a State Scenic Highway, and is not a highly visible feature from the SR 4 corridor, given the intervening development that exists between the project site and SR 4. 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 impede views of Mount Diablo currently

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

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 with one residential structure and associated improvements to an urban area consisting of a gas station, convenience store, car wash, 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 BBSP zoning designation identified in the City's Zoning Map.

The heights of the proposed structures would range from 14.5 to 24.5 feet. The proposed convenience store building would be approximately 24.5 feet tall at the top of the proposed logo tower, and 14.5 to 16.5 feet tall for the remainder of the building. The convenience store building would include a mix of materials, varied roof lines, and building recesses and articulations. Landscaping would be provided throughout the site.

The BBSP requires that buildings on properties designated for General Commercial development must measure 20 feet high, but no more than 30 feet high. A review of the City's BBSP and Design Guidelines would be required in regard to architecture as the originally-proposed elevations are not in compliance with either document in terms of the minimum height requirements. It is important to note, however, that the minimum height requirements contained in the BBSP were not adopted in order to reduce or mitigate and environmental impact. As such, the project's potential non-compliance with these height and design requirements does not constitute a significant environmental impact.

Implementation of the proposed project would alter the visual appearance on the project site through the removal of the existing residence, associated landscaping, and subsequent commercial development. An *Arborist Report and Tree Inventory Summary* was completed for the project site by Sierra Nevada Arborists in July 2016. According to the Report, 28 trees measuring four inches in diameter and larger measured at breast height were found within and/or overhanging the proposed project area. The tree species included Almond (1), American Elm (14), California Buckeye (1), Deodar Cedar (2), Fruitless Mulberry (2), Fremont Cottonwood (5), Interior Live Oak (1), Italian Stone Pine (1), and Mexican Fan Palm (2). All existing on-site structures, trees, foundations, surfacing, etc. would be demolished and removed to accommodate the proposed improvements.

The proposed landscaping plan includes the planting of trees, shrubs, and groundcovers throughout the project site, including along the western, southern, and eastern site boundaries, and around the proposed convenience store building. According to the landscaping plan, 32 trees

would be planted throughout the site. The proposed landscaping would help shield the proposed facilities and structures from nearby viewpoints.

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 contains one residential structure with four associated outbuildings, miscellaneous hardscape surface improvements, gravel paving, non-native trees, and grasses. Minimal light and glare is currently emitted from the project site. The change from a predominantly vacant property to a commercial development, including a gas station, convenience store, and car wash and associated street lighting, would generate new permanent sources of light and glare. The project site is adjacent to existing commercial, institutional, and industrial facilities to the west and east. The residential structures located in the immediate vicinity of the site would be considered sensitive receptors, which could be adversely affected by additional sources of light and glare.

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. Development of the project site would be subject to all applicable local regulations and standards, including Policy 14, Street Amenities & Lighting, of the BBSP. According to Policy 14 of the BBSP, full-cutoff light fixtures shall be provided to reduce glare while also ensuring safety and security within the BBSP rights-of-ways.

The project also includes design and landscaping features in order to reduce the potential light impacts resulting from the customers' vehicle headlights. For example, as noted above, various trees and shrubs would be planted throughout the site, including along the western, southern, and eastern site boundaries, and around the proposed convenience store building. The landscaping plan indicates that the shrubs would be full and bushy in order to shield lighting from headlights. Therefore, vehicle headlight glare would not be exacerbated given the existing level of traffic on Brentwood Boulevard, and landscaping that would restrict project vehicle light sources.

Nevertheless, 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 majority of the on-site soil is Rincon clay loam, 0-2% slopes (RbA), with Delhi sand, 2-9% slopes (DaC) along the western third of the project site. Delhi sand is classified as a Farmland of Statewide Importance soil, and Rincon clay loam is classified as a Prime Farmland soil, when irrigated.

Development of the site for urban uses and the subsequent removal of Farmland of Statewide Importance soil and 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

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

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 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 Farmland of Statewide Importance soil and 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)

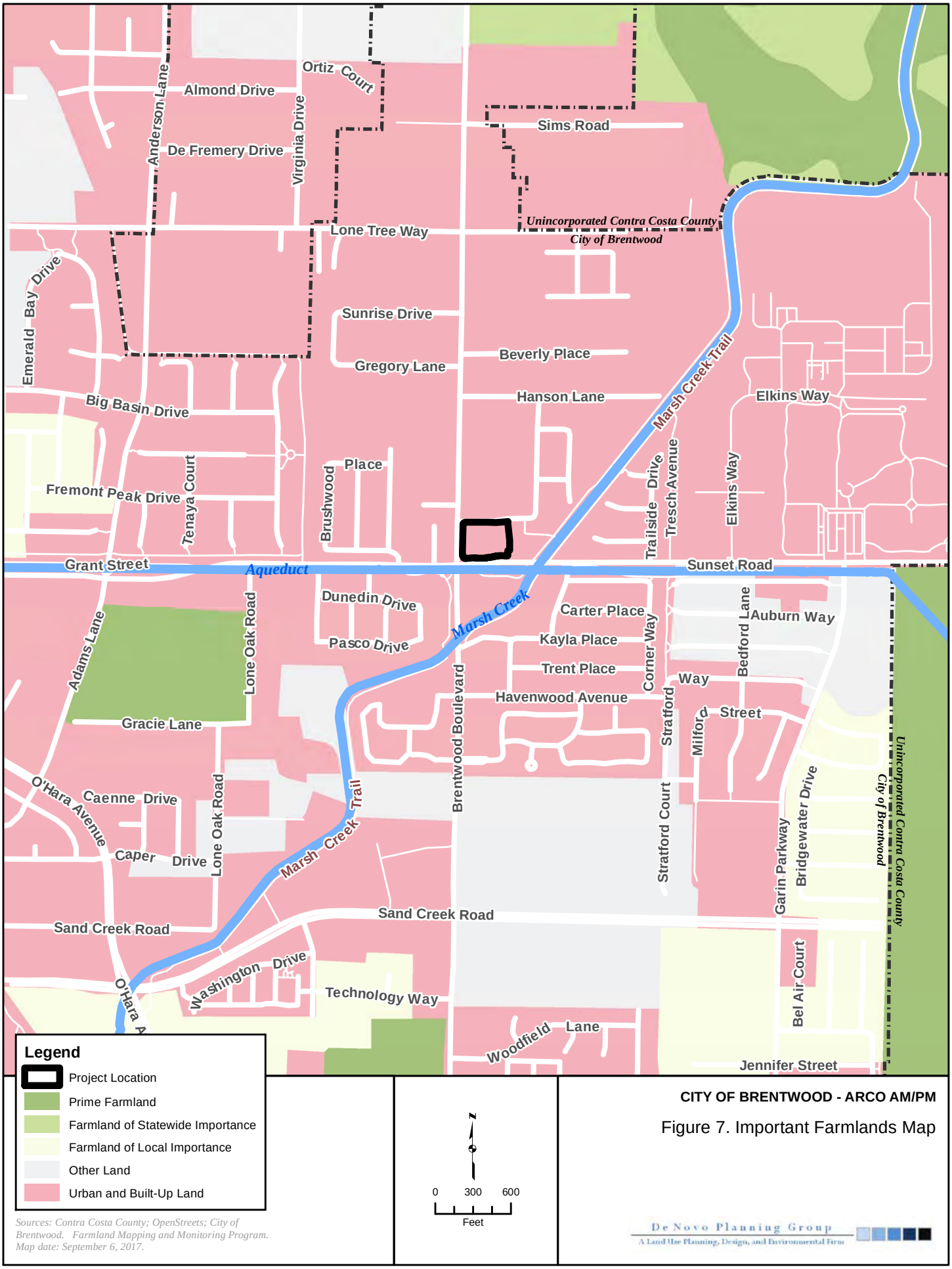
Mitigation Measure AG-1*: The project applicant must preserve agricultural lands by paying an in-lieu fee established by City Council resolution. The fee may be adjusted annually but may not be increased by more than ten percent during any twelve-month period.*

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 BBSP. 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]). 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 north of the project site is designated BBSP 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.



Sources: Contra Costa County; OpenStreets; City of Brentwood. Farmland Mapping and Monitoring Program. Map date: September 6, 2017.

CITY OF BRENTWOOD - ARCO AM/PM

Figure 7. Important Farmlands Map

De Novo Planning Group
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 BBSP 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 convenience market with gas pumps, and development assumptions for a fast

food restaurant with drive-through. The screening criteria for these types of development are if the development is less than or equal to the following screening level sizes:

- Convenience market with gas pumps:
  - 4,000 sf for operational criteria pollutants;
  - 1,000 sf for operational greenhouse gas (GHG) (addressed in Section XII); or
  - 277,000 sf for construction criteria pollutants.
- Fast food restaurant with drive through:
  - 6,000 sf for operational criteria pollutants;
  - 1,000 sf for operational GHG (addressed in Section XII); or
  - 277,000 sf for construction criteria pollutants.

Accordingly, if a convenience market with gas pumps development or a fast food restaurant with drive through development is less than or equal to the above listed screening size for operational or construction criteria pollutants, or for operational GHG, the development would not be expected to result in potentially significant air quality impacts, and a detailed air quality assessment would not be required.

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 GHG emissions. The Court of Appeal 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's thresholds of significance presented in Table 1, and the screening criteria, are utilized for this analysis.

Implementation of the proposed project would contribute local emissions in the area during both the construction and operation of the proposed project. The project includes development of an ARCO AM/PM gas station with 18 fuel stations, and an associated single-story, 3,195-sf convenience store with a 1,021-sf drive-through car wash on the southern 1.11-acre portion of the project site. This portion of the development is below the screening size for construction criteria pollutants, but is above the screening size for operational criteria pollutants and operational GHG.

The project also includes development assumptions for the northern 0.83-acre portion of the project site consisting of a 4,000-sf fast-food restaurant facility with drive-through. This portion of the development is below the screening size for construction criteria pollutants and operational criteria pollutants, but is above the screening size for operational GHG.

Out of an abundance of caution, De Novo Planning Group calculated the construction and operational air emissions resulting from the project to conclusively determine whether thresholds could be exceeded.

Construction-Related Emissions

The following section outlines the construction schedule, modeling assumptions, and results of the modeling. CalEEMod™ (v.2016.3.1) was used to estimate construction emissions for the proposed project.

Construction Activities/Schedule

Construction activities will consist of multiple phases over several months. These construction activities can be described as site improvements (grading, underground infrastructure, and topside improvements) and vertical construction (building construction and architectural coatings). For purposes of this analysis, it is assumed that the entire project is built-out from early May 2018 to late October 2018. The assumptions made for the air quality and greenhouse gas emissions analysis are included as Appendix B.

Site Improvements: For purposes of this analysis it is assumed that site improvements are installed in one phase. This approach will present a more conservative and worst-case scenario.

The site improvement phase of construction will begin with demolition and site preparation. The demolition step will include the use of concrete/industrial saws, dozers, and backhoes. The existing structures, totaling approximately 3,655 sf, will be demolished during this step. This task will generally take approximately five days to complete and will include vehicle trips from construction workers.

The site preparation step will include the use of dozers, backhoes, and graders to strip all organic materials and the upper half-inch to inch of soil from the project site. This task will generally take approximately five days to complete and will include vehicle trips from construction workers.

After the site is stripped of organic materials, grading will begin. This activity will involve the use of graders, dozers, loaders, and backhoes to move soil around the project site to create specific engineered grade elevations and soil compaction levels. After grading and compaction all underground infrastructure would be installed. This includes the excavation of trenches to install storm water, wastewater, potable water, and dry utilities, as well as the installation of underground fuel storage tanks, and then backfilling and compacting the soil over the infrastructure. Grading and infrastructure for the project site would take approximately 10 days and will include vehicle trips from construction workers. *(Note: It would be possible to grade the*

site under a more compacted schedule with extra equipment operating or under a longer timeframe with less equipment.).

The last task is to install the topside improvements, which includes pouring concrete curbs, gutters, sidewalks, and access aprons and then paving of all streets and parking lots. This task will involve the use of cement and mortar mixers, pavers, paving equipment, rollers, and loaders, and will take approximately 10 days and will include vehicle trips from construction workers. *(Note: It would be possible to install the topside improvements under a more compacted schedule with extra equipment operating or under a longer timeframe with less equipment).*

Building Construction/Architectural Coatings: Building construction involves the vertical construction of structures and landscaping around the structures. This task will involve the use of cranes, forklifts, generator sets, small tractors/loaders/backhoes, and welders. The exact construction schedule of the entire project is largely dependent on market demands. For purposes of this analysis it is assumed that the entire project is constructed in approximately 80 days. The actual building construction phase may vary based on market conditions. Architectural coatings involve the interior and exterior painting associated with the structures. This task will generally begin one month after construction begins on the structure and will generally be completed with the completion of the individual buildings.

Construction Emissions

A quantification of the emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ that will be emitted by project construction has been performed. CalEEMod™ (v.2016.3.1) was used to estimate construction emissions for the proposed project. Below is a list of model assumptions used in the construction screens of CalEEMod. Table 2 presents the estimated construction phase schedule, which shows the duration of each construction phase. Table 3 shows the off-road construction equipment used during construction for each phase. Following these tables are a list of default factors that were used in the model.

TABLE 2: CONSTRUCTION PHASE

Phase #	*Phase Name*	*Start Date*	*End Date*	*# Days/Week*	*# Days*
1	Demolition	5/1/2018	5/7/2018	5	5
2	Site Preparation	5/7/2018	5/11/2018	5	5
3	Grading	5/12/2018	5/25/2018	5	10
5	Paving	5/26/2018	6/7/2018	5	10
4	Building Construction	6/7/2018	9/26/2020	5	80
6	Architectural Coating	7/7/2018	10/26/2018	5	80

SOURCE: CALEEMOD (V.2016.3.1)

TABLE 3: OFF-ROAD EQUIPMENT

Equipment Type	Unit Amount	Hours/Day	Horsepower	Load Factor
Demolition				
Concrete/Industrial Saws	1	8.00	81	0.73
Rubber Tired Dozers	1	8.00	247	0.40
Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation				
Graders	1	8.00	187	0.41
Rubber Tired Dozers	1	7.00	247	0.40
Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading				
Graders	1	6.00	187	0.41
Rubber Tired Dozers	1	6.00	247	0.40
Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction				
Cranes	1	6.00	226	0.29
Forklifts	1	6.00	89	0.20
Generator Sets	1	8.00	84	0.74
Tractors/Loaders/Backhoes	1	6.00	97	0.37
Welders	3	8.00	46	0.45
Paving				
Cement and Mortar Mixers	1	6.00	9	0.56
Pavers	1	6.00	130	0.42
Paving Equipment	1	8.00	132	0.36
Rollers	1	7.00	80	0.38
Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coatings				
Air Compressors	1	6.00	78	0.48

SOURCE: CALEEMOD (V.2016.3.1)

Table 4 shows the construction emissions for the construction year 2018.

TABLE 4: CONSTRUCTION EMISSIONS (UNMITIGATED)

Thresholds	ROG	NO_X	PM_{10}	$PM_{2.5}$
	≤ 54 lbs/day	≤ 54 lbs/day	≤ 82 lbs/day	≤ 54 lbs/day
2018	4.4167	46.3079	9.0818	5.3422
Maximum	**4.4167**	**46.3079**	**9.0818**	**5.3422**
Threshold Exceeded?	**No**	**No**	**No**	**No**

NOTES: LBS/DAY = POUNDS PER DAY.
SOURCE: CALEEMOD (V.2016.3.1)

The BAAQMD has established construction-related emissions thresholds of significance as follows: 54 pounds per day (lbs/day) of ROG, NO_x, or $PM_{2.5}$, and 852 lbs/day for PM_{10}. If the proposed project's emissions will exceed the BAAQMD's threshold of significance for construction-generated emissions, the proposed project will have a significant impact on air quality and all feasible mitigation are required to be implemented to reduce emissions. As shown in Table 4, annual construction emissions of ROG, NO_x, PM_{10}, and $PM_{2.5}$ will not exceed the BAAQMD thresholds of significance in any given year. Therefore, the proposed project would not exceed the BAAQMD's threshold of significance for construction-generated emissions, the proposed project would have a less than significant impact related to construction emissions.

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.

Operational Emissions

Operational emissions of ROG, NOX, PM_{10}, and $PM_{2.5}$ would be generated by the proposed project from both mobile and stationary sources. Day-to-day activities such as future customers' vehicle trips to and from the project site would make up the majority of the mobile emissions. Emissions would occur from area sources such as natural gas combustion from heating mechanisms, landscape maintenance equipment exhaust, and consumer products. CalEEMod™ (v.2016.3.1) was used to estimate operational emissions for the proposed project. Table 5 shows the emissions, which include mobile, area source, and energy emissions of criteria pollutants that would result from operations of the proposed project.

TABLE 5: OPERATIONAL BUILDOUT GENERATED EMISSIONS (UNMITIGATED)

	ROG	***NO_X***	***PM_{10}***	***$PM_{2.5}$***
Thresholds Category	***≤ 54 lbs/day***	***≤ 54 lbs/day***	***≤ 82 lbs/day***	***≤ 54 lbs/day***
Area	0.1748	2.0000e-005	1.0000e-005	1.0000e-005
Energy	0.0248	0.2257	0.0172	0.0172
Mobile	5.1491	15.0478	4.5619	1.2821
Total	**5.3487**	**15.2735**	**4.5791**	**1.2993**
Threshold Exceeded?	**No**	**No**	**No**	**No**

SOURCE: CALEEMOD (V.2016.3.1).

The long-term operational emissions estimate for buildout of the proposed project, incorporates the potential area source and vehicle emissions, and emissions associated with utility and water usage, and wastewater and solid waste generation. The modeling included mitigation inputs including the following:

Traffic Modeling Assumptions

- Low Density Suburban Project Setting
- Improve pedestrian network so that the project site connects to offsite pedestrian networks

Energy Modeling Assumptions

- Exceed Title 24 (15% improvement)
    - Note: The Project would meet or exceed this mitigation by conforming to the current version of the Title 24 Energy Efficiency Standards.

- Install High Efficiency Lighting (16% lighting energy reduction)
    - Note: According to CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures*, a minimum of a 16% reduction in electricity usage is expected compared with low-efficiency lighting (i.e., metal halide post top lights as opposed to typical mercury cobrahead lights).

Area Modeling Assumptions

- No Hearths
- Use low VOC paint not to exceed 100 g/L
    - Note: low VOC paint limits are set per BAAQMD Rule 49.

Water Modeling Assumptions

- Install low flow bathroom faucets
- Install low-flow kitchen faucets
- Install low-flow toilets
- Install low-flow showers
- Use water-efficient irrigation systems

As shown in Table 5, the proposed project's operational emissions of ROG, NO_x, PM_{10}, and $PM_{2.5}$ would not exceed the applicable thresholds of significance. Therefore, the proposed project would not violate operational air quality standards or contribute to the area's nonattainment status of ozone and PM, and impacts associated with operational emissions would be considered less than significant.

Cumulative Emissions

The long-term emissions associated with operation of the proposed project in conjunction with other existing or planned development in the area would incrementally contribute to the region's air quality. In order to determine the proposed project's cumulative contribution to regional air quality, the City, as lead agency, has chosen to utilize the BAAQMD's cumulative thresholds as presented in Table 6. The proposed project's contribution to cumulative emissions of criteria air pollutants was calculated using CalEEMod and is presented in Table 6 below. As shown in Table 6, the proposed project's unmitigated cumulative emissions would be below the applicable cumulative thresholds of significance. Therefore, the proposed project's incremental contribution to cumulative air quality impacts would be considered less than significant.

TABLE 6: CUMULATIVE EMISSIONS (UNMITIGATED)

	ROG	***NO_X***	***PM_{10}***	***$PM_{2.5}$***
Thresholds Category	***10 tons/yr***	***10 tons/yr***	***10 tons/yr***	***10 tons/yr***
Construction				
2018	0.1780	1.0369	0.1042	0.0799
Operation				
Area	0.0319	0.0000	0.0000	0.0000
Energy	4.5300e-003	0.0412	3.1300e-003	3.1300e-003
Mobile	0.6170	2.1549	0.0128	0.1731
Subtotal	*0.6534*	*2.1960*	*0.0159*	*0.1762*
Construction + Operation				
Total	**0.8314**	**3.2329**	**0.1201**	**0.2561**
Threshold Exceeded?	**No**	**No**	**No**	**No**

SOURCE: CALEEMOD (V.2016.3.1).

Conclusion

As presented and discussed above, the proposed project would result in operational and cumulative emissions below 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, places of worship, and convalescent facilities are examples of sensitive receptors. Several residences are located nearby the project site to the north and west. In addition, a church is also located to the west of the site, on the opposite side of Brentwood Boulevard.

Short-Term Construction Toxics

Construction activities would emit pollutants that could negatively affect sensitive receptors in the project area. However, the exposure would be temporary and exhaust from construction equipment dissipates rapidly. Furthermore, as identified under Issue 4.3(b), 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 MM AQ-1, which includes standard BAAQMD dust control measures, would be required. With implementation of mitigation measure MM AQ-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. However, because the proposed gas station portion of the project is not a permitted use, a Conditional Use Permit would be required. The proposed uses are generally 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 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

The proposed project would be a source of gasoline vapors that would include toxic air contaminants (TACs) such as benzene. Benzene is the primary TAC associated with gasoline storage and refueling at gasoline stations. Benzene is a carcinogen, in addition to representing a non-cancer health risk (including the potential for anemia). Gasoline vapors are released during the filling of the stationary underground storage tanks (USTs), during the transfer from those underground tanks to individual vehicles, and during individual vehicle refueling and associated spillage.

BAAQMD has stringent requirements for the control of gasoline vapor emissions from gasoline-dispensing facilities. BAAQMD Regulation 8 Rule 7, Gasoline Dispensing Facilities, limits emissions of organic compounds from gasoline-dispensing facilities. Regulation 8 Rule 7

prohibits the transfer or allowance of the transfer of gasoline into stationary tanks at a gasoline-dispensing facility unless a CARB-certified Phase I vapor recovery system is used; and further prohibits the transfer or allowance of the transfer of gasoline from stationary tanks into motor vehicle fuel tanks at a gasoline-dispensing facility unless a CARB-certified Phase II vapor recovery system is used during each transfer. Vapor recovery systems collect gasoline vapors that would otherwise escape into the air during bulk fuel delivery (Phase I) or fuel storage and vehicle refueling (Phase II). Phase I vapor recovery system components include the couplers that connect tanker trucks to the underground tanks, spill containment drain valves, overfill prevention devices, and vent pressure/vacuum valves.

Phase II vapor recovery system components include gasoline dispensers, nozzles, piping, break away hoses, face plates, vapor processors, and system monitors. Regulation 8 Rule 7 also requires fuel storage tanks to be equipped with a permanent submerged fill pipe at the storage tank which prevents the escape of gasoline vapors. BAAQMD's permitting procedures require substantial control of emissions, and permits are not issued unless TAC risk screening or TAC risk assessment can show that risks are not significant. BAAQMD may impose limits on annual throughput to ensure that risks are within acceptable limits. In addition, California has statewide limits on the benzene content in gasoline, which greatly reduces the toxic potential of gasoline emissions.

Gasoline-dispensing facilities are also regulated by BAAQMD Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants, which provides for the review of TAC emissions in order to evaluate potential public exposure and health risk, to mitigate potentially significant health risks resulting from these exposures, and to provide net health risk benefits by improving the level of control when existing sources are modified or replaced. Pursuant to BAAQMD Regulation 2, Rule 5, stationary sources having the potential to emit TACs, including gas stations, are required to obtain permits from BAAQMD. Permits may be granted to these operations provided they are operated in accordance with applicable BAAQMD rules and regulations.

Additionally, BAAQMD has recommended that a TAC health risk screening be completed for the proposed project in order to determine the potential health risk impacts resulting from the operation of the gasoline station on nearby sensitive receptors.[3] The potential health impacts from gasoline vapor on nearby receptors were modelled using AERSCREEN. AERSCREEN is a BAAQMD-recommended screening model that provides worst-case estimates for the one-hour concentrations of TACs on nearby receptors. This software also utilizes worst-case meteorological conditions to ensure a conservative analysis, for the purposes of screening. If a screening model, such as AERSCREEN, shows that a project would not exceed the applicable BAAQMD thresholds for TACs, the project would have a less-than-significant impact related to TACs.

A separate model, the Hotspots Analysis and Reporting Program (HARP) model, was used to calculate maximum cancer and non-cancer risks associated with the concentrations of TACs

[3] Personal communication with Virginia Lau, Advanced Project Advisor, BAAQMD. September 22, 2017.

modelled by AERSCREEN. The HARP is a software suite that addresses the programmatic requirements of the Air Toxics "Hot Spots" Program (Assembly Bill 2588).

De Novo Planning Group modelled the health risks associated with the release of benzene vapor from the proposed gasoline fueling stations on the nearest residential and non-residential receptors. The nearest residential receptor is located approximately 56 meters (184 feet) west of the nearest proposed fueling station, and the nearest non-residential receptor (City of Hope Church) is located approximately 62 meters (203 feet) to the west of the nearest proposed fueling station. The results of the analysis are provided in Table 7. The outputs of the modelling are provided in Appendix B.

TABLE 7: SUMMARY OF MAXIMUM HEALTH RISKS

Risk Metric	*Maximum Project-Generated Risk*	*BAAQMD Significance Threshold*	*Is Threshold Exceeded?*
Residential Cancer Risk (70 Year Exposure)	1.73 per million	10 per million	No
Workplace Cancer Risk (30 Year Exposure)	0.09 per million	10 per million	No
Chronic (Non-Cancer)	0.00643	Hazard Index ≥ 1	No
Acute (Non-Cancer)	0.00179	Hazard Index ≥ 1	No

SOURCES: AERSCREEN (LAKES ENVIRONMENTAL SOFTWARE, 2017); HARP-2 AIR DISPERSION AND RISK TOOL (CARB, 2017); BAAQMD, 2012.

As shown in the table, the maximum health risks associated with the release of gasoline vapor on the nearest residential and non-residential receptors are below the applicable TAC thresholds established by the BAAQMD. TAC risk levels are based on worst-case maximum one-hour concentrations, as modelled by AERSCREEN. Because the modelled maximum TAC risks associated the proposed project on nearby sensitive receptors are below the applicable thresholds (for both cancer and non-cancer risks), further refined TAC health risk modelling is not required (BAAQMD, 2017). This is a less than significant impact.

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 living 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 further reduce potential air quality impacts by requiring implementation of best management practices during the construction phase of the project, further ensuring that this impact remains at 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.

The project site could be considered a source of unpleasant odors by some given the proposed future uses; however, as noted previously, BAAQMD has stringent requirements for the control

of gasoline vapor emissions from gasoline-dispensing facilities as articulated in BAAQMD Regulation 8 Rule 7. Additionally, BAAQMD Regulation 7, Odorous Substances, states that no person shall discharge any odorous substance which causes the ambient air at or beyond the property line of such person to be odorous and to remain odorous after dilution with four parts of odor-free air. Therefore, 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	

RESPONSES TO CHECKLIST QUESTIONS

Response a): Less than Significant with Mitigation. A biological field survey to assess site conditions was undertaken by De Novo Planning Group's Principal Biologist, Steve McMurtry, on October 3, 2017. The site was systematically searched by walking throughout the project site.

The property consists primarily of ruderal grasslands. The project site has been previously used for agricultural production. Historical aerial photographs show orchard uses on the project site in 1993. Due to cultivation practices, the site contains no high-quality habitat for covered and no-take plant species. In addition, none of the covered or no-take plant species were observed during the site survey on October 3, 2017, and none are expected to occur on the site due to the site's history of heavy disturbance. According to Google Earth imagery, the project site is routinely mowed, which would preclude the establishment of special status plant species.

Vegetation observed on the project site includes: wild oats (*Avena fatua*), ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum*), prickly lettuce (*Lactuca serriola*), black mustard (*Brassica nigra*), prickly lettuce (*Lactuca serriola*), black mustard (*Brassica nigra*), common mallow (*Malva neglecta*), morning glory (*Convolvulus arvensis*), and filaree (*Erodium* spp.).

An *Arborist Report and Tree Inventory Summary* was completed for the project site by Sierra Nevada Arborists in July 2016 (see Appendix C). According to the Report, 28 trees measuring four inches in diameter and larger measured at breast height were found within and/or overhanging the proposed project area. The tree species included Almond (1), American Elm (14), California Buckeye (1), Deodar Cedar (2), Fruitless Mulberry (2), Fremont Cottonwood (5), Interior Live Oak (1), Italian Stone Pine (1), and Mexican Fan Palm (2). According to the Arborist Report, none of the trees identified on this site are desirable candidates for retention.

A records search reveals that there are 49 known special status species (federal or state listed, of CNPS List 1B or 2) within the 9-quad region radius search of the project site (see Table 8).

TABLE 8: SPECIAL-STATUS PLANTS

Species	*Status (Fed/State/CNPS)*	*Habitat*
Large-flowered fiddleneck *Amsinckia grandiflora*	FE/CE/1B.1	Cismontane woodland, valley and foothill grassland. 270 – 550 meters.
Slender silver moss *Anomobryum julaceum*	--/--/4.2	Damp rock and soil on outcrops, usually on roadcuts, broadleafed upland forest, lower montane coniferous forest, North Coast coniferous forest. 100 – 1,000 meters.
Mt. Diablo manzanita *Arctostaphylos auriculata*	--/--/1B.3	Chaparral (sandstone), cismontane woodland. 135 – 650 meters.
Contra Costa manzanita *Arctostaphylos manzanita ssp. laevigata*	--/--/1B.2	Chaparral (rocky). 430 – 1,100 meters.
Alkali milk-vetch *Astragalus tener var. tener*	--/--/1B.2	Favors alkaline playas, valley and foothill grasslands, and vernal pools. Also occurs in open, alkaline and seasonally moist meadows. 1 – 60 meters.
Heartscale *Atriplex cordulata var. cordulata*	--/--/1B.2	Grows in grasslands with sandy alkaline or saline soils. Favors chenopod scrub, meadows, seeps, valley and foothill grasslands. 0 – 650 meters.
Brittlescale *Atriplex depressa*	--/--/1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools. 1 – 320 meters.
Big tarplant *Blepharizonia plumosa*	--/--/1B.1	Usually clay, valley and foothill grassland. 30 – 505 meters.
Watershield *Brasenia schreberi*	--/--/2B.3	Marshes and swamps (freshwater). 30 – 2,200 meters.
Round-leaved filaree *California macrophylla*	--/--/1B.2	Clay, cismontane woodland and valley and foothill grasslands
Mt. Diablo fairy-lantern *Calochortus pulchellus*	--/--/1B.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. 30 – 840 meters.
Bristly sedge *Carex comosa*	--/--/2B.1	Coastal prairie, marshes and swamps (lake margins), valley and foothill grassland. 0 – 625 meters.
Congdon's tarplant *Centromadia parryi ssp. congdonii*	--/--/1B.1	Valley and foothill grassland (alkaline). 0 – 230 meters.
Soft salty bird's-beak *Chloropyron molle ssp. molle*	FE/CR/1B.2	Marshes and swamps (coastal salt). 0 – 3 meters.
Bolander's water-hemlock *Cicuta maculata var. bolanderi*	--/--/2B.1	Marshes and swamps Coastal, fresh or brackish water. 0 – 200 meters.

Species	*Status (Fed/State/CNPS)*	*Habitat*
Hoover's cryptantha *Cryptantha hooveri*	--/--/1A	Inland dunes, valley and foothill grassland (sandy). 9 – 150 meters.
Recurved larkspur *Delphinium recurvatum*	--/--/1B.2	This perennial herb is found in alkaline soils typically in chenopod scrub, cismontane woodland, and valley and foothill grasslands. 3-790 meters.
Dwarf downingia *Downingia pusilla*	--/--/2B.2	Annual herb found in vernal pools and valley and foothill grasslands (mesic). At elevations of 1-445 meters.
Antioch Dunes buckwheat *Eriogonum nudum var. psychicola*	--/--/1B.1	Inland dunes. 0 – 20 meters.
Mt. Diablo buckwheat *Eriogonum truncatum*	--/--/1B.1	Chaparral, coastal scrub, valley and foothill grassland. 3 – 350 meters.
Jepson's coyote-thistle *Eryngium jepsonii*	--/--/1B.2	Vernal pools or other seasonal wetlands such as valley and foothill grasslands. Mostly found in clay habitats at elevations of 3-300 meters.
Delta button-celery *Eryngium racemosum*	--/CE/1B.1	Riparian scrub (vernally mesic clay depressions). 3 – 30 meters.
Spiny-sepaled button-celery *Eryngium spinosepalum*	--/--/1B.2	Valley and foothill grassland, vernal pools. 80 – 975 meters.
Contra Costa wallflower *Erysimum capitatum var. angustatum*	FE/CE/1B.1	Inland dunes. 3 – 20 meters.
Diamond-petaled California poppy *Eschscholzia rhombipetala*	--/--/1B.1	Valley and foothill grassland (alkaline, clay). 0 – 975 meters.
San Joaquin spearscale *Extriplex joaquinana*	--/--/1B.2	Alkaline. Chenopod scrub, meadows and seeps, playas, valley and foothill grassland
Stinkbells *Fritillaria agrestis*	--/--/4.2	Chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland. 10 – 1,555 meters.
Fragrant fritillary *Fritillaria liliacea*	--/--/1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland. 3 – 410 meters.
Diablo helianthella *Helianthella castanea*	--/--/1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. 60 – 1,300 meters.
Brewer's western flax *Hesperolinon breweri*	--/--/1B.2	Chaparral, cismontane woodland, valley and foothill grassland
Woolly rose-mallow *Hibiscus lasiocarpos var. occidentalis*	--/--/1B.2	Marshes and swamps (freshwater). Moist, freshwater-soaked river banks and low peat islands in sloughs; can also occur on riprap and levees. In California. Found at elevations of 0-120 meters.
Contra Costa goldfields *Lasthenia conjugens*	FE/--/1B.1	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools. 0 – 470 meters.
Delta tule pea *Lathyrus jepsonii var. jepsonii*	--/--/1B.2	Marshes and swamps (freshwater and brackish). 0 – 5 meters.
Mason's lilaeopsis *Lilaeopsis masonii*	--/CR/1B.1	Prefers brackish or freshwater swamps, intertidal marshes, and riparian scrub at or below 35 feet.
Delta mudwort *Limosella australis*	--/--/2B.1	Marshes and swamps (freshwater or brackish), riparian scrub. 0 – 3 meters.
Showy golden madia *Madia radiata*	--/--/1B.1	Valley and foothill grassland, cismontane woodland, chenopod scrub
Hall's bush-mallow *Malacothamnus hallii*	--/--/1B.2	Chaparral, coastal scrub. 10 – 760 meters.
Shining navarretia *Navarretia nigelliformis ssp. radians*	--/--/1B.2	Cismontane woodland, alley and foothill grassland, vernal pools. 65 – 1,000 meters.

Species	Status (Fed/State/CNPS)	Habitat
Antioch Dunes evening-primrose *Oenothera deltoides ssp. howellii*	FE/CE/1B.1	Inland dunes. Remnant river bluffs and sand dunes east of Antioch. 0-30M.
Bearded popcornflower *Plagiobothrys hystriculus*	--/--/1B.1	Valley and foothill grassland (mesic), vernal pools margins. 0 – 274 meters.
Eel-grass pondweed *Potamogeton zosteriformis*	--/--/2B.2	Marshes and swamps (assorted freshwater). 0 – 1,860 meters.
California alkali grass *Puccinellia simplex*	--/--/1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools. 2 – 930 meters.
Marsh skullcap *Scutellaria galericulata*	--/--/2B.2	Lower montane coniferous forest, meadows and seeps (mesic), marshes and swamps. 0 – 2,100 meters.
Side-flowering skullcap *Scutellaria lateriflora*	--/--/2B.2	Meadows and seeps (mesic), marshes and swamps. 0 – 500 meters.
Chaparral ragwort *Senecio aphanactis*	--/--/2B.2	Chaparral, cismontane woodland, coastal scrub. 15 – 800 meters.
Keck's checkerbloom *Sidalcea keckii*	FE/--/1B.1	Cismontane woodland, valley and foothill grassland. 75 – 650 meters.
Suisun Marsh aster *Symphyotrichum lentum*	--/--/1B.2	Marshes and swamps (brackish and freshwater). 0 – 3 meters.
Caper-fruited tropidocarpum *Tropidocarpum capparideum*	--/--/1B.1	Valley and foothill grassland (alkaline hills). 1 – 455 meters.
Oval-leaved viburnum *Viburnum ellipticum*	--/--/2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. 215 – 1,400 meters.

NOTES: (--) = NONE; FEDERAL: FE = FEDERAL ENDANGERED.
STATE: CE = CALIFORNIA ENDANGERED; CR = CALIFORNIA RARE.
CALIFORNIA NATIVE PLANT SOCIETY (CNPS): LIST 1B = RARE OR ENDANGERED IN CALIFORNIA; LIST 2 = RARE AND ENDANGERED IN CALIFORNIA, MORE COMMON ELSEWHERE; LIST 4 = PLANTS RARE IN CALIFORNIA, COMMON ELSEWHERE.
CNPS THREAT RANKS: 0.1-SERIOUSLY THREATENED IN CALIFORNIA (OVER 80% OF OCCURRENCES THREATENED / HIGH DEGREE AND IMMEDIACY OF THREAT); 0.2-MODERATELY THREATENED IN CALIFORNIA (20-80% OCCURRENCES THREATENED / MODERATE DEGREE AND IMMEDIACY OF THREAT); 0.3-NOT VERY THREATENED IN CALIFORNIA (LESS THAN 20% OF OCCURRENCES THREATENED / LOW DEGREE AND IMMEDIACY OF THREAT OR NO CURRENT THREATS KNOWN).
SOURCE: CNDDB. 2017.

Table 9 shows the 66 special-status wildlife species which are known to occur within the 9-quad region radius search of the project site. The table shows the species name, protection status, geographic distribution, and habitat requirements.

TABLE 9: SPECIAL-STATUS WILDLIFE

Species	Status (Fed/State)	Geographic Distribution	Habitat Requirements
Amphibians/Reptiles			
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT/CE	Inner coast range of California — mostly in Contra Costa and Alameda counties. Some have been found in San Joaquin and Santa Clara counties	Chaparral — northern coastal sage scrub and coastal sage. Rock outcrops, rock crevices and mammal burrows.
California glossy snake *Arizona elegans occidentalis*	--/SSC	Central California, southern Nevada, southern Utah, southwestern and eastern Colorado, and southern Nebraska south through southern California, Arizona, New Mexico, Kansas, Oklahoma, and Texas in the United States, to northern Baja California, south to Sinaloa,	Semi-arid grasslands, desert scrub, rocky outcroppings and barren sandy deserts

Species	*Status (Fed/State)*	*Geographic Distribution*	*Habitat Requirements*
		Aguascalientes and Tamaulipas in Mexico.	
California red-legged frog *Rana draytonii*	FT/SSC	California red-legged frogs are found almost exclusively in California with a few sightings in Baja, Mexico. Historically, they could be seen throughout most of the California coastal areas.	Prefer slow-moving or standing deep ponds, pools and streams. Tall vegetation, like grasses, cattails and shrubs, provide protection from predators and the sun.
California tiger salamander *Ambystoma californiense*	FT/CE	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County.	Small ponds, lakes, or vernal pools in grass-lands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy.
Coast horned lizard *Phrynosoma blainvillii*	--/SSC	Found at elevations from sea level to 8,000 ft. (2,438 m).	Inhabits open areas of sandy soil and low vegetation in valleys, foothills and semiarid mountains. Found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. Often found in lowlands along sandy washes with scattered shrubs and along dirt roads, and frequently found near ant hills.
Foothill yellow-legged frog *Rana boylii*	--/SSC	Occurs in the Klamath, Cascade, north Coast, south Coast, Transverse, and Sierra Nevada Ranges up to approximately 6,000 feet.	Creeks or rivers in woodland, forest, mixed chaparral, and wet meadow habitats with rock and gravel substrate and low overhanging vegetation along the edge. Usually found near riffles with rocks and sunny banks nearby.
Giant gartersnake *Thamnophis gigas*	FT/CT	Because of the direct loss of natural habitat, the giant garter snake relies heavily on rice fields in the Sacramento Valley, but also uses managed marsh areas in Federal National Wildlife Refuges and State Wildlife Areas. There have been only a few recent sightings of giant garter snakes in the San Joaquin Valley.	Inhabits agricultural wetlands and other waterways such as irrigation and drainage canals, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands in the Central Valley.
Northern California legless lizard *Anniella pulchra*	--/SSC	California legless lizards are found in California and Mexico. They are found from western central California (San Joaquin and the coastal regions), through northwestern Baja California, and as far south as Colonia Guerrero, Mexico.	Require loose sand for burrowing (sand, loam, or humus), moisture, warmth, and plant cover. Also prefer lower temperatures.
San Joaquin coachwhip *Masticophis flagellum ruddocki*	--/SSC	Endemic to California, ranging from Arbuckle in the Sacramento Valley in Colusa County southward to the Grapevine in the Kern County portion of the San Joaquin Valley and westward into the inner South Coast Ranges	Occurs in open, dry, treeless areas, including grassland and saltbush scrub. Takes refuge in rodent burrows, under shaded vegetation, and under surface objects.
Western pond turtle *Emys marmorata*	--/SSC	Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of Sierra Nevada	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in

Species	*Status (Fed/State)*	*Geographic Distribution*	*Habitat Requirements*
			woodlands, grasslands, and open forests
Birds			
American peregrine falcon *Falco peregrinus anatum*	--/FP	Peregrines can be seen all over North America, but they are more common along coasts.	Breeding habitats containing cliffs and almost always nest near water. Generally utilize open habitats for foraging. Non-breeding may also occur in open areas without cliffs. Many artificial habitats like towers, bridges and buildings are also utilized by Peregrine Falcons.
Bank swallow *Riparia riparia*	--/CT	Occurs along the Sacramento River from Tehama County to Sacramento County, along the Feather and lower American Rivers, in the Owens Valley; and in the plains east of the Cascade Range in Modoc, Lassen, and northern Siskiyou Counties. Small populations near the coast from San Francisco County to Monterey County	Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam
Burrowing owl *Athene cunicularia*	--/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast	Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows
California black rail *Laterallus jamaicensis coturniculus*	--/CT	Permanent resident in the San Francisco Bay and east-ward through the Delta into Sacramento and San Joaquin Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties	Tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations
California horned lark *Eremophila alpestris actia*	--/--	Found along the coast of California.	The barer the ground, the more Horned Larks like it. Look for them in open country with very short or no vegetation, including bare agricultural fields. They breed in short grassland, short-stature sage shrubland, desert, and even alpine and arctic tundra.
Double-crested cormorant *Phalacrocorax auritus*	--/--	Double-crested Cormorants are the most widespread cormorant in North America, and the one most frequently seen in freshwater. They breed on the coast as well as on large inland lakes.	Coasts, bays, lakes, rivers. Very adaptable, may be found in almost any aquatic habitat, from rocky northern coasts to mangrove swamps to large reservoirs to small inland ponds. Nests in trees near or over water, on sea cliffs, or on ground on islands.
Ferruginous hawk *Buteo regalis*	--/--	Can be found in North America, as far north as Canada, south through western and central United States to northern Texas. It winters south to northern Mexico.	Most often found in the interior in lowlands, plateaus, valleys, plains, rolling hills of grass land, agricultural land, ranches, and the edges of deserts.
Grasshopper sparrow *Ammodramus savannarum*	--/SSC	Dense grasslands on rolling hills, lowland plains, in valleys & on hillsides on lower mountain slopes.	Favors native grasslands with a mix of grasses, forbs & scattered shrubs. Loosely colonial when nesting. Valley & foothill grassland

Species	*Status (Fed/State)*	*Geographic Distribution*	*Habitat Requirements*
Great blue heron *Ardea herodias*	--/--	Found throughout much of North America and into Central and South America. Common throughout California.	Rookeries occur in tall trees near a variety of wetland habitat types. Isolated areas that discourage predation and human disturbance are preferred.
Golden eagle *Aquila chrysaetos*	--/FP	They occur throughout Eurasia, in northern Africa, and in North America. In North America, golden eagles are found in the western half of the continent, from Alaska to central Mexico, with small numbers in eastern Canada and scattered pairs in the eastern United States	Are found in open and semi-open habitats from sea level to 3600 m elevation. Habitat types that they inhabit include tundra, shrublands, grasslands, woodland-brushlands, and coniferous forests. Most golden eagles are found in mountainous areas, but they also nest in wetland, riparian and estuarine habitats.
Loggerhead shrike *Lanius ludovicianus*	--/SSC	Distributed along southern Canada and the contiguous USA. There populations are declining and more reside in southern costal California.	Open country with scattered shrubs and trees is the typical habitat of Loggerhead Shrike, but the species can also be found in more heavily wooded habitats with large openings and in very short habitats with few or no trees.
Northern harrier *Circus cyaneus*	--/SSC	Have a broad distribution across North America and Eurasia.	Found mostly in open habitats. Reside in fields, savannas, meadows, marshes, prairies and deserts. The largest populations tend to be in dense and low vegetative areas.
Prairie falcon *Falco mexicanus*	--/--	*Falco mexicanus* is found throughout the western United States as well as parts of Mexico and Canada. It is commonly found in the desert and prairie regions of British Columbia, Alberta, and Saskatchewan in Canada. In the United States, *Falco mexicanus* is found from North and South Dakota south to Texas, Arizona, and New Mexico. Sightings in Manitoba, Minnesota, Illinois, Iowa, and Indiana have been recorded as well.	In spring and fall migrations, prairie falcons prefer open grassland habitats, although they are found in forested habitats in Canada during migrations as well. In winter, prairie falcons prefer open desert and grassland habitats. Prairie falcons breed in open, arid grasslands with cliffs and bluffs for nesting.
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	--/SSC	San Francisco Bay area, Tomales Bay to Carquinez Strait to San Jose, San Diego	Breeds in salt marshes of the San Francisco Bay area, ranging from Tomales Bay to Carquinez Strait to San Jose. Non-breeding habitat along California coast from the breeding range to San Diego, casual north to northern California.
Song sparrow ("Modesto" population) *Melospiza melodi*	--/SSC	Occurs primarily below 200 ft (61 m) elevation in the Central Valley from Colusa County in the Sacramento Valley south through the Sacramento–San Joaquin River Delta (exclusive of Suisun Marsh) to the northern San Joaquin Valley of Stanislaus County.	Emergent freshwater marshes dominated by tules and cattails as well as riparian willow thickets. Also nest in riparian forests of Valley Oak with a sufficient understory of blackberry along vegetated irrigation canals and levees, and in recently planted Valley Oak restoration sites

Species	*Status (Fed/State)*	*Geographic Distribution*	*Habitat Requirements*
Suisun song sparrow *Melospiza melodia maxillaris*	--/SSC	California endemic. Year-round range is confined to tidal salt and brackish marshes fringing the Carquinez Strait and Suisun Bay east to Antioch, at the confluence of the San Joaquin and Sacramento rivers.	Occurs in tidal salt and brackish marshes. dense vegetation is required for nesting sites, song perches, and cover for refuge from predators. Where vegetation is too short and sparse, Suisun song sparrow nests are more likely to be exposed to predators or flooding during high tides.
Swainson's hawk *Buteo swainsoni*	--/CT	Range from the Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County.	Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields
Tricolored blackbird *Agelaius tricolor*	/ SSC (CC)	Permanent resident in the Central Valley from Butte County to Kern County. Breeds at scattered coastal locations from Marin County south to San Diego County; and at scattered locations in Lake, Sonoma, and Solano Counties. Rare nester in Siskiyou, Modoc, and Lassen Counties.	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields. Habitat must be large enough to support 50 pairs. Probably requires water at or near the nesting colony
White-tailed kite *Elanus leucurus*	--/FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging
Fish			
Delta smelt *Hypomesus transpacificus*	FT/CE	Endemic to the Sacramento-San Joaquin River Delta in California, where it is distributed from the Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, and Solano Counties	Estuarine waters with salinities up to 14 parts per thousand.
Eulachon *Thaleichthys pacificus*	FT/--	Eulachon are endemic to the eastern Pacific Ocean, ranging from northern California to southwest Alaska and into the southeastern Bering Sea. In the continental United States, most eulachon originate in the Columbia River Basin. Other areas in the United States where eulachon have been documented include the Sacramento River, Russian River, Humboldt Bay and several nearby smaller coastal rivers (e.g., Mad River), and the Klamath River in California; the Rogue River and Umpqua Rivers in Oregon; and infrequently in coastal rivers and tributaries to Puget Sound, Washington.	Eulachon occur in nearshore ocean waters and to 1,000 feet (300 m) in depth, except for the brief spawning runs into their natal (birth) streams. Spawning grounds are typically in the lower reaches of larger snowmelt-fed rivers with water temperatures ranging from 39 to 50°F. Spawning occurs over sand or coarse gravel substrates.
Sacramento perch *Archoplites interruptus*	--/SSC	Sacramento--San Joaquin, Pajaro, and Salinas River drainages, and Clear Lake in Lake County, California	Sloughs, slow-moving rivers. found primarily in warm, turbid, and alkaline farm ponds, reservoirs, and recreational lakes that it has been introduced into.

Species	*Status (Fed/State)*	*Geographic Distribution*	*Habitat Requirements*
Steelhead – Central Valley DPS *Oncorhynchus mykiss irideus*	FT/--	This distinct population segment, or DPS, includes all naturally spawned populations of steelhead (and their progeny) in the Sacramento and San Joaquin Rivers and their tributaries, excluding steelhead from San Francisco Bay and San Pablo Bays and their tributaries.	Free of heavy sedimentation with adequate flow and cool, clear water. Gravel that is between 0.5 to 6.0 inches in diameter, dominated by 2 to 3 inch gravel. Escape cover such as logs, undercut banks, and deep pools for spawning adults.
Invertebrates			
Antioch andrenid bee *Perdita scitula antiochensis*	--/--	Oakley and Antioch, Contra Costa County, California	Interior dunes.
Antioch Dunes anthicid beetle *Anthicus antiochensis*	--/--	Apparently extirpated from the type locality at Antioch Dunes. In the early 1990s, it was collected for the first time at several sites along the Sacramento River in Glenn, Tehama, Shasta, and Solano Counties, and from one site at Nicolas on the Feather River in Sutter County.	Interior sand dunes and sand bars. Commonly collected in pitfall traps in bare, unvegetated sand.
Antioch Dunes halcitid bee *Sphecodogastra antiochensis*	FC/CT	Antioch Dunes of Contra Costa County.	Only known from the Antioch Dunes of Contra Costa County, California. It is geographically isolated from other species in its genus; the nearest records are for *S. lusoria* at Delhi and Livingston, Merced County, California, approximately seventy miles southeast of Antioch.
Antioch efferian robberfly *Efferia antiochi*	--/--	Known only from Antioch, Fresno, and Scout Island in the San Joaquin River.	No specific habitat information is available.
Antioch multilid wasp *Myrmosula pacifica*	--/--	Antioch.	Nest in the ground, usually in sandy soils.
Antioch sphecid wasp *Philanthus nasalis*	--/--	Antioch.	No specific habitat information is available.
Blennosperma vernal pool andrenid bee *Andrena blennospermatis*	--/--	California.	Vernal pool communities.
Bridges' coast range shoulderband *Helminthoglypta nickliniana bridgesi*	--/--	Contra Costa and Alameda Counties.	Open hillsides; lives in rock piles surrounded by grass and herbaceous vegetation.
California linderiella *Linderiella occidentalis*	--/--	Range from Redding in the north to Fresno County in the south, mainly east of the Sacramento and San Joaquin rivers.	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools has very low alkalinity, conductivity, and TDS.

Species	*Status (Fed/State)*	*Geographic Distribution*	*Habitat Requirements*
Conservancy fairy shrimp *Branchinecta conservatio*	FE/--	The historical distribution of the Conservancy fairy shrimp is not known. The species is currently known from several disjunct populations: the Vina Plains in Tehama County, south of Chico in Butte County, the Jepson Prairie Preserve and surrounding area in Solano County, Sacramento National Wildlife Refuge in Glenn County, Mapes Ranch west of Modesto, San Luis National Wildlife Refuge and the Haystack Mountain/Yosemite Lake area in Merced County, and two locations on the Los Padres National Forest in Ventura County.	Inhabit rather large, cool-water vernal pools with moderately turbid water.
Crotch bumble bee *Bombus crotchii*	--/--	This species occurs primarily in California, including the Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California.	Inhabits open grassland and scrub habitats. Nesting occurs underground. Males perch and chase moving objects in search of mates
Curved-foot hygrotus diving beetle *Hygrotus curvipes*	--/--	Contra Costa County	Known habitat was a shallow muddy "pool". Not clear if this was really a palustrine or lacustrine habitat.
Hurd's metapogon robberfly *Metapogon hurdi*	--/--	San Joaquin Valley	No specific habitat information is available. Robber flies are predaceous on other insects, and larvae usually develop in the ground or in rotting wood where they prey upon other insect larvae.
Lange's metalmark butterfly *Apodemia mormo langei*	FE/--	Endemic to California, where it is known from one strip of riverbank in the San Francisco Bay Area	Has a close relationship with the food plant of its larvae: nakedstemmed buckwheat (*Eriogonum nudum*).
Longhorn fairy shrimp *Branchinecta longiantenna*	FE/--	Alameda, Contra Costa, Merced, and San Luis Obispo Counties.	Inhabits small, clear-water depressions in clear to turbid clay/grass-bottomed pools and in shallow swales.
Middlekauff's shieldback katydid *Idiostatus middlekauffi*	--/--	Antioch	Interior dunes.
Midvalley fairy shrimp *Branchinecta mesovallensis*	--/--	Southeastern Sacramento, Southern Sierra Foothill, San Joaquin, and Solano-Colusa Vernal Pool Regions	Vernal pools or grass-bottomed swales ranging from 4 to 660 square feet.
Molestan blister beetle *Lytta molesta*	--/--	Distribution of this species is poorly known.	Annual grasslands, foothill woodlands or saltbush scrub.
Redheaded sphecid wasp *Eucerceris ruficeps*	--/--	Antioch	Interior dunes.

Species	*Status (Fed/State)*	*Geographic Distribution*	*Habitat Requirements*
Sacramento anthicid beetle *Anthicus sacramento*	--/--	Sacramento, Shasta, San Joaquin Counties	Sand dunes.
San Joaquin dune beetle *Coelus gracilis*	--/--	Antioch	Sand dunes.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT/--	Range from Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County.	Common in vernal pools; they are also found in sandstone rock outcrop pools.
Vernal pool tadpole shrimp *Lepidurus packardi*	FE/--	Shasta County south to Merced County	Vernal pools and ephemeral stock ponds.
Western bumble bee *Bombus occidentalis*	--/--	Once common and widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.	Live in colonies made up of one queen, female workers and, near the end of the season, reproductive members of the colony (new queens, or gynes, and males). Typically nest underground in abandoned rodent burrows or other cavities. Generalist foragers and have been reported visiting a wide variety of flowering plants. Bumble bees require plants that bloom and provide adequate nectar and pollen throughout the colony's life cycle, which is from early February to late November.
Mammals			
American badger *Taxidea taxus*	--/SSC	Southern Canada, most of the northern, western, and central United States, and south to Puebla and Baja California, Mexico.	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Need sufficient food, friable soils and open, uncultivated ground. Prey on burrowing rodents. Dig burrows.
Hoary bat *Lasiurus cinereus*	--/--	Occur in all 50 states. Rare in the eastern United States and northern Rockies. Found mainly in the Pacific Northwest and California, Arizona, and New Mexico.	Prefer older large leaf trees such as cottonwoods, willows, and fruit/nut trees for daytime roosts. Often found in association with riparian corridors. Need open spaces to forage.
Pallid bat *Antrozous pallidus*	--/SSC	Occurs throughout California except the high Sierra from Shasta to Kern County and the northwest coast, primarily at lower and mid elevations	Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts

Species	*Status (Fed/State)*	*Geographic Distribution*	*Habitat Requirements*
Salt-marsh harvest mouse *Reithrodontomys raviventris*	FE/CE	San Francisco Bay and its tributaries	Only in saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat. Do not burrow, build loosely organized nests. Require higher areas for flood escape.
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	--/SSC	San Francisco Bay Area	Forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded grass, leaves and other material. May be limited by availability of nest building materials.
San Joaquin kit fox *Vulpes macrotis mutica*	FE/CT	San Joaquin Valley	Principally occurs in the San Joaquin Valley and adjacent open foothills to the west; recent records from 17 counties extending from Kern County north to Contra Costa County. Saltbush scrub, grassland, oak, savanna, and freshwater scrub
San Joaquin pocket mouse *Perognathus inornatus*	--/--	Endemic to California. Sacramento Valley, San Joaquin Valley, and Salinas Valley.	Inhabits annual grasslands or grassy open stages with scattered shrubby vegetation; needs loose-textured, sandy soils for burrowing and suitable prey base.
Western red bat *Lasiurus blossevillii*	--/SSC	Occur in southern British Columbia, the majority of the western United States, throughout Central America and Mexico, and even further south including Brazil, Bolivia, and Chile.	Prefers edges that have trees for roosting as well as open areas. Requires water. Feeds on a multitude of insects. Roosts primarily in trees and sometimes in shrubs but less often. Roost 2-40 ft above the ground.

NOTES: FEDERAL: FE = ENDANGERED, FT = THREATENED; FC = CANDIDATE SPECIES FOR LISTING.
STATE: CE = ENDANGERED, CT = THREATENED, CC = CANDIDATE SPECIES FOR LISTING; FP = FULLY PROTECTED UNDER THE CALIFORNIA FISH AND GAME CODE; SSC = SPECIES OF SPECIAL CONCERN IN CALIFORNIA.
SOURCE: CNDDB. 2017.

Special Status Plant Species

Surveys to assess whether the project site contains potentially suitable habitat for special-status plants, and to search for special-status plants, were undertaken by Steve McMurtry, De Novo Biologist, on October 3, 2017. The site was systematically searched by walking throughout the project site.

The survey revealed that the ruderal vegetation is dominated by non-native species that are periodically mowed and/or disked. None of the covered or no-take species were found during the survey, and due to its disturbed state, the site is highly unlikely to contain any of these species. Potentially occurring special-status plant species are not expected to occur onsite because of the heavy disturbance the site has received being regularly mowed and/or disked. Therefore, the project is not expected to impact any covered or no-take plants.

Special Status Wildlife Species

Based upon the onsite habitats, four covered wildlife species may occur on the project site. Each of these species is discussed below.

San Joaquin Kit Fox: The project site is just within the northern tip of the historical range of San Joaquin kit fox (*Vulpes macrotis mutica*). The California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) does not contain any records of this species within 3.0 miles of the project site. The nearest CNDDB occurrence of San Joaquin kit fox is located approximately 4.0 miles south of the project site. The onsite grasslands were inspected for burrows or dens with evidence of kit fox occupancy (i.e., scat, tracks) or burrows or dens that meet the dimensional criteria for kit fox. Comprehensive inspection of potential den habitat was accomplished by walking meandering transects throughout the property. No evidence for San Joaquin kit fox was observed.

Western Burrowing Owl: The project site is within the range of western burrowing owl (*Athene cunnicularia*). CDFW's CNDDB contains two occurrences of western burrowing owl within 0.5 miles of the site (located 0.35 miles southwest and southeast of the site). The site was inspected for burrowing owls and ground squirrel burrows with evidence of burrowing owl occupancy (i.e., white wash, pellets, feathers). Comprehensive inspection of potential western burrowing owl habitat was accomplished by walking meandering transects throughout the property. No western burrowing owls or potential burrows with evidence of burrowing owl occupancy were observed.

Swainson's Hawk: The project site is along the extreme western edge of the range of Swainson's hawk (*Bueto swainsoni*). CNDDB contains one occurrence of Swainson's hawk within 0.5 miles of the site (located 0.35 miles southwest of the site). The only potential nest trees in the site are some of the large trees around the residence and along Brentwood Blvd and Sunset Road. There are only a few potential nest trees near and visible from the site. All of the trees in and visible from the site were inspected for raptor stick nests. No raptor stick nests were observed in the onsite trees or offsite trees visible from the project site. Due to the location of the site along the extreme west edge of the Swainson's hawk nesting range, it is considered unlikely this species will nest in trees in or near the project site in the future.

Golden Eagle: The project site is within the range of golden eagles (*Aquila chysaetos*). CDFW's CNDDB does not contain any records of this species within 5.0 miles of the project site. The nearest CNDDB occurrence of golden eagle is located approximately 5.7 miles south of the project site. The only potential nest trees in the site are some of the large trees around the residence and along Brentwood Boulevard and Sunset Road. There are also a few potential nest trees near and visible from the site. All of the trees in and visible from the site were inspected for raptor stick nests. No raptor stick nests were observed in the onsite trees or offsite trees visible from the project site. No golden eagles were observed and this species nests more often on cliffs in remote natural areas than in trees in urban settings.

Other Birds and Raptors: No fully-protected wildlife species have been observed or are likely to occur within the property. The site does not provide high-quality nesting habitat for any of the

raptors (Swainson's hawk, or golden eagle). However, if/when the site contains growing grain crops, the cropland land cover type does provide moderately suitable foraging habitat for Swainson's hawk and other migratory birds. The site contains 28 trees, some of which have the potential for migratory bird nesting habitat.

Conclusion

Due to the disturbed nature of the project site's ruderal annual grassland cover type, suitable habitat does not exist to support special-status plant species known to occur within the annual 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, wildlife species surveys are necessary to determine whether any special-status wildlife species are occupying the project site prior to initiating onsite ground disturbance and vegetation removal. 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)
Western Burrowing Owl

Mitigation Measure BIO-1: *Prior to any ground disturbance, a preconstruction survey of the project site shall be completed in accordance with CDFW survey guidelines (California Department of Fish and Game 1995). On the parcel where the activity is proposed, the biologist will 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 will not be surveyed. Surveys should take place near sunrise or sunset in accordance with CDFW guidelines. All burrows or burrowing owls will be identified and mapped. Surveys will take place no more than 30 days prior to construction. During the breeding season (February 1 to August 31), surveys will document whether burrowing owls are nesting in or directly adjacent to disturbance areas. During the nonbreeding season (September 1 to January 31), surveys will document whether burrowing owls are using habitat in or directly adjacent to any disturbance area. Survey results will be valid only for the season (breeding or nonbreeding) during which the survey is conducted. If burrowing owls and/or suitable burrows are not discovered, then further mitigation is not necessary. If burrowing owls and/or burrows are identified in the survey area, Mitigation Measure Bio-2 shall be implemented.*

Mitigation Measure BIO-2: *If burrowing owls are found during the breeding season (February 1 to August 31), the project proponent will 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 will 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 to January 31), the project proponent should avoid the owls and the burrows they are using, if possible. Avoidance will 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 will be established around each occupied burrow (nest site). Buffer zones of 160 feet will be established around each burrow being used during the nonbreeding season. The buffers will be delineated by highly visible, temporary construction fencing, if occupied burrows for burrowing owls are not avoided, passive relocation will 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 1 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.

San Joaquin Kit Fox

Mitigation Measure BIO-3: *Prior to any ground disturbance related to covered activities, a biologist shall conduct a preconstruction survey in areas identified in the planning surveys as supporting suitable breeding or denning habitat for San Joaquin kit fox. The survey will establish the presence or absence of San Joaquin kit fox and/or suitable dens and evaluate use by kit foxes in accordance with USFWS survey guidelines (USFWS, 1999). Preconstruction surveys shall be conducted within 30 days of ground disturbance. On the parcel where activity is proposed, the biologist shall survey the proposed disturbance footprint and a 250-foot radius from the perimeter of the proposed footprint to identify San Joaquin kit fox and/or suitable dens. Adjacent parcels under different land ownership shall not be surveyed. The status of all dens shall be determined and mapped. Written result of preconstruction surveys shall be submitted to the USFWS within 5 working days after survey completion and before start of ground disturbance. Concurrence is not required prior to initiation of covered activities. If San Joaquin kit fox and/or suitable dens are not discovered, then further mitigation is not necessary. If San Joaquin kit fox and/or suitable dens are identified in the survey area, Mitigation Measure Bio-4 shall be implemented.*

Mitigation Measure BIO-4: *If a San Joaquin kit fox den is discovered in the proposed development footprint, the den shall be monitored for 3 days by a CDFW/USFWS-approved biologist using a tracking medium or an infrared beam camera to determine if the den is currently being used. Unoccupied dens shall be destroyed immediately to prevent subsequent use. If a natal or pupping den is found, the USFWS and CDFW shall be notified immediately. The den shall not be destroyed until the pups and adults have vacated and then only after further consultation with USFWS and CDFW. If kit fox activity is observed at the den during the initial monitoring period, the den shall be monitored for an additional 5 consecutive days from the time of the first observation to allow any resident animals to move to another den while den use is actively discouraged. For dens other than natal or pupping dens, use of the den can be discouraged by partially plugging the entrance with soil such that any resident animal can easily escape. Once the den is determined to be unoccupied, it may be excavated under the direction of the biologist. Alternatively, if the animal is still present after*

5 or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgement of a biologist, it is temporarily vacant (i.e., during the animal's normal foraging activities).

Swainson's Hawk

Mitigation Measure BIO-5: *Prior to any ground disturbance conducted during the nesting season (March 15 to September 15), a USFWS/CDFW-approved biologist shall conduct a preconstruction survey no more than 30 days prior to construction in order to establish whether occupied Swainson's hawk nests are located within 1,000 feet of the project site. If any potentially-occupied nests within 1,000 feet are off the project site, then their occupancy will be determined by observation from public roads or by observations of Swainson's hawk activity (e.g. foraging) near the project site. A written summary of the survey results shall be submitted to the City of Brentwood Community Development Department. If occupied nests occur on- site or within 1,000 feet of the project site, then Mitigation Measure BIO-6 shall be implemented. If occupied nests are not found, further mitigation is not necessary.*

Mitigation Measure BIO-6: *During the nesting season (March 15 to 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, and limited activities) indicate that a smaller buffer could be used, the City of Brentwood may coordinate with CDFW/USFWS to determine the appropriate buffer size. If young fledge prior to September 15, covered activities could 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 City of Brentwood for a waiver of this avoidance measure. Any waiver must also be approved by USFWS and CDFW. While nest is occupied, activities outside the buffer can take place.*

All active nest trees will be preserved on site, if feasible. Nest trees, including non-native trees, lost to covered activities will be mitigated by the project proponent according to the requirements of Mitigation Measure BIO-7.

Mitigation Measure BIO-7: *The loss of non-riparian Swainson's hawk nest trees shall be mitigated by the project proponent by:*

- *If feasible onsite, 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 below and the project proponent shall plant, maintain, and monitor 15 saplings for every tree lost at a site to be approved by the City of Brentwood, 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 3 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 shall 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 will help to ensure that nest trees will be available in the short term (5 to 10 years for cottonwoods and willows) and in the long term (e.g., Valley oak, sycamore). This will 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 shall 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 shall occur closest to suitable foraging habitat outside the Urban Development Area (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.*

Golden Eagle

Mitigation Measure BIO-8: *Prior to implementation of covered activities, a qualified biologist shall conduct a preconstruction survey to establish whether nests of golden eagles are occupied. A written summary of the survey results shall be submitted to the City of Brentwood Community Development Department. If nests are occupied, then Mitigation Measure BIO-9 shall be implemented. If occupied nests are not found, further mitigation is not necessary.*

Mitigation Measure BIO-9: *Covered activities shall be prohibited within 0.5 mile of active golden eagle nests. If site-specific conditions, or the nature of the covered activity (e.g., steep topography, dense vegetation, and limited activities) indicate that a smaller buffer could be used, the City of Brentwood may coordinate with CDFW/USFWS to determine the appropriate buffer size. The qualified biologist, at the applicant's expense, shall also engage in construction monitoring. Construction monitoring shall focus on ensuring that ground disturbance related activities do not occur within the buffer zone established around an active nest. Construction monitoring would ensure that direct effects to golden eagles are minimized.*

Covered Migratory Birds

Mitigation Measure BIO-10: *Prior to any ground disturbance a pre-construction survey for covered migratory birds shall be completed. This survey shall be conducted in the morning or evening hours within 30 days prior to any construction activities. The entire site, including the trees and surrounding vegetation, will be surveyed for birds, nests and nesting behavior. Common nesting behavior by birds includes; collecting nesting materials, bringing food items to a nest and*

vocalizations from young or from adults to attract a mate and to establish or defend a nesting territory. A construction-free buffer of suitable dimensions must be established around any active migratory bird nests (up to 250 feet, depending on the location and species) for the duration of the project or until it has been determined that the chicks have fledged and are independent of their parents.

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.

According to the survey of the project site, the site does not contain any potentially jurisdictional Waters of the U.S. or wetlands of any type. Therefore, no Army Corps of Engineers 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 field area to the north 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.

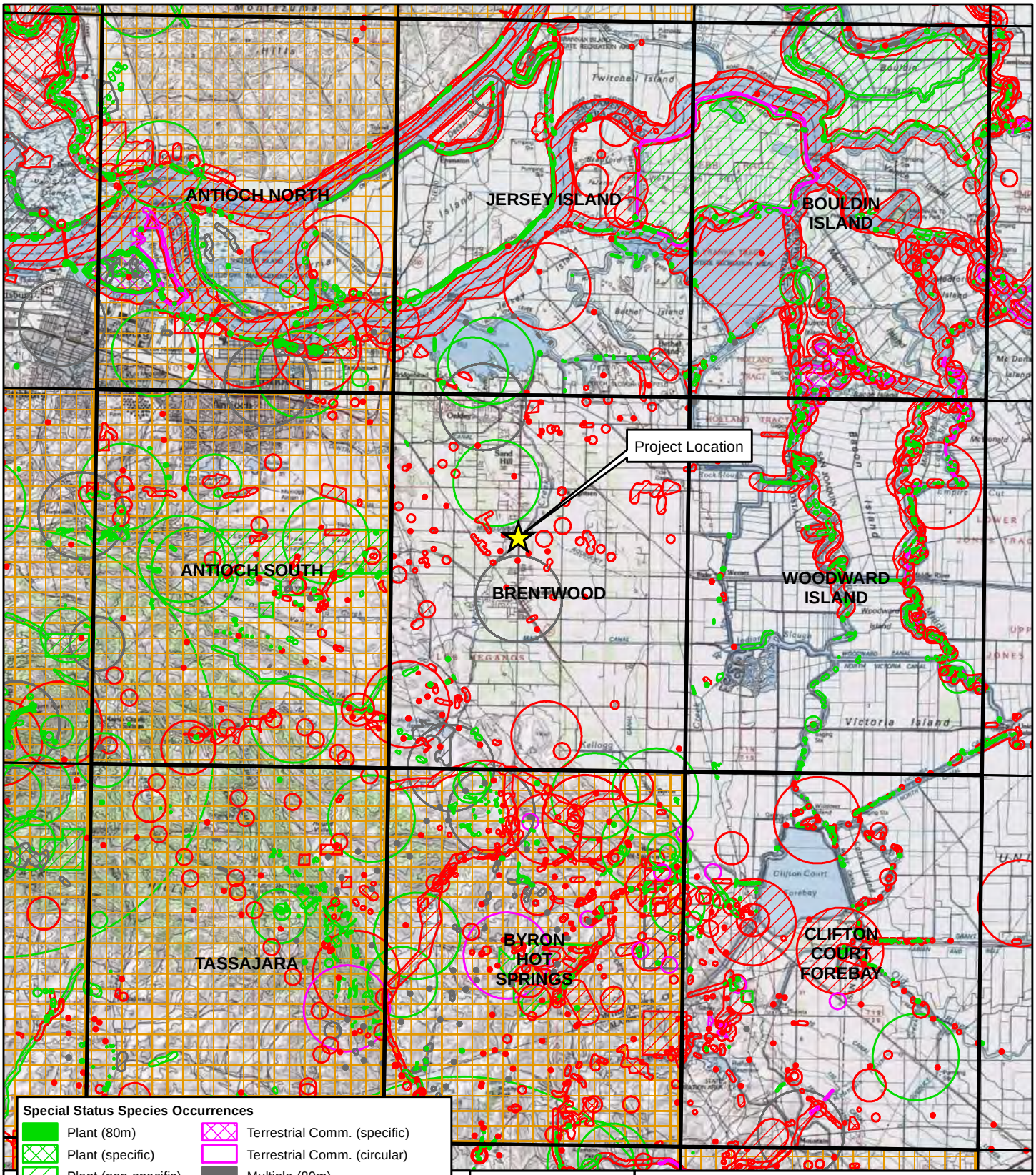
Given that the project site provides limited habitat, impacts related to the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impeding the use of wildlife nursery sites are considered **less than significant**.

Responses e), f): Less than Significant. The City of Brentwood's Tree Ordinance defines a "Protected Tree" as any existing tree that is six caliper inches or larger. Protected trees that are proposed to be removed shall be replaced in accordance with minimum planting requirements. An *Arborist Report and Tree Inventory Summary* was completed for the project site by Sierra Nevada Arborists in July 2016. Field reconnaissance and inventory efforts completed as part of the Report identified "Protected Trees". According to the Report, 28 trees measuring four inches in diameter and larger measured at breast height were found within and/or overhanging the

proposed project area. The tree species included Almond (1), American Elm (14), California Buckeye (1), Deodar Cedar (2), Fruitless Mulberry (2), Fremont Cottonwood (5), Interior Live Oak (1), Italian Stone Pine (1), and Mexican Fan Palm (2). According to the Arborist Report, none of the trees identified on this site are desirable candidates for retention. There are undesirable species (Cottonwood, Mulberry, and Elm all have issues relating to surface rooting, structural defects, and/or debris dropping and pest infestations) which would ultimately result in being a nuisance or a hazard, and some are not tolerant of the types of environmental changes that will be occurring on this site. Additionally, one tree has been recommended for removal from the proposed project area due to the nature and extent of defects, compromised health, and/or structural instability noted at the time of field inventory efforts.

The City of Brentwood regulates both the removal of "protected trees" and the encroachment of construction activities within their driplines. Therefore, a tree permit and/or additional development authorization would be obtained from the City of Brentwood prior to the removal of any trees within the proposed project site. All terms and conditions of the tree permit and/or other Conditions of Approval are the sole and exclusive responsibility of the project applicant. Therefore, because the project would be required to comply with the City's Tree Ordinance, removal of any on-site trees would not conflict with the provisions of a tree preservation ordinance. Additionally, Mitigation Measure BIO-8 includes detailed requirements for onsite tree replanting (associated with the loss of non-riparian Swainson's Hawk nest trees).

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. However, given the level of development that was present on this parcel at the time that the ECCC HCP/NCCP was adopted, the site was mapped with a land cover designation of Urban, Turf, Landfill, or Aqueduct, and will not be assessed the Development Fee, as the site is not considered suitable for covered species habitat. 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.**



CNDDB version 09/2017. Please Note: the occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not been surveyed and/or mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area. Basemap: ArcGIS Online Topographic Map Service. Map date: September 6, 2017.

CITY OF BRENTWOOD - ARCO AM/PM

Figure 8. California Natural Diversity Database

9-Quad Search

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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		

RESPONSES TO CHECKLIST QUESTIONS

Response a): 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 June 28, 2016 (NWIC file No.:15-1918) (see Appendix D). The record search indicates that the project site does not contain any recorded buildings or structures listed on the State Office of Historic Preservation Historic Property Directory (which includes listings of the California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and the National Register of Historic Places). In addition to these inventories, the NWIC base maps show no recorded buildings or structures within the proposed project area.

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.[4] However, a review of historical literature and maps indicates the possibility of historic-period activity within the project site. The 1940 Byron 15-minute topographic quadrangle depicts one building or structure within the project site, and the 1954 Brentwood USGS 7.5-minute topographic quadrangle depicts two buildings or structures within the project site. These unrecorded buildings/structures meet the Office of Historic Preservation's minimum age standard that buildings, structures, and objects 45 years or older may be of historical value. With this in mind, there is a moderate potential for unrecorded historic-period archaeological resources in the proposed project site.

Implementation of the following mitigation measure would ensure that the on-site structures are evaluated for their potential historic importance. With implementation of the following mitigation measure, development of the proposed project would have a **less than significant** impact on historical resources.

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

Mitigation Measure(s)

Mitigation Measure CUL-1: *Prior to ground disturbing activities, the on-site structures shall be evaluated for their potential architectural and/or historic importance by a Qualified Architectural Historian, at the cost of the Project applicant.*

Work shall not continue at the site(s) until the Qualified Architectural Historian conducts sufficient research and data collection to determine if the site(s) is eligible for listing on the NRHP or CRHR; or not a significant Public Trust Resource. Should the site(s) be determined to not be significant or eligible, no further action is required. Should the site(s) be determined to be significant or eligible, the Project applicant shall work with the Registered Professional Historian to develop a mitigation plan for the site(s).

If a building or building complex is determined to be important under the criteria of the CRHR, and the buildings cannot be preserved, then it is recommended that the buildings be documented through the preparation of the DPR 523 forms with large scale "HABS-like" photographs taken. Sets of these photographs shall be placed with the County museum or a suitable archival facility and the Northwest Information Center, thereby preserving information on early architecture for future researchers.

Responses b), c), d): Less than Significant with Mitigation. As noted above, a record search was conducted for the project area and surrounding area through the NWIC of the California Historical Resources Information System on June 28, 2016 (NWIC file No.:15-1918). There are no known sites in the project area or within a one-eighth mile radius of the project area. The project area was previously surveyed for cultural resources as part of a cultural resources study completed in 1980.

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 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-2: *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-3: *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

RESPONSES TO CHECKLIST QUESTIONS

Responses a.i), a.ii): Less than Significant with Mitigation. Figure 9 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 approximately 12.3 miles southwest and 4.0 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 12.3 miles southwest and 4.0 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 onsite 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. The soil liquefaction potential of the soils on the project site is shown in Figure 11. As shown in the figure, the risk of liquefaction is considered Medium to High at the project site.

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 High. 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 high 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 geotechnical evaluation of the project site. Implementation of Mitigation Measure GEO-3 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 Measures GEO-2 and GEO-3.

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 currently consists of a single-family residence and associated improvements. 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. According to the City of Brentwood General Plan Draft EIR Figure 3.6-4, the project site has low (0%-3%) to moderate (3%-6%) 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.

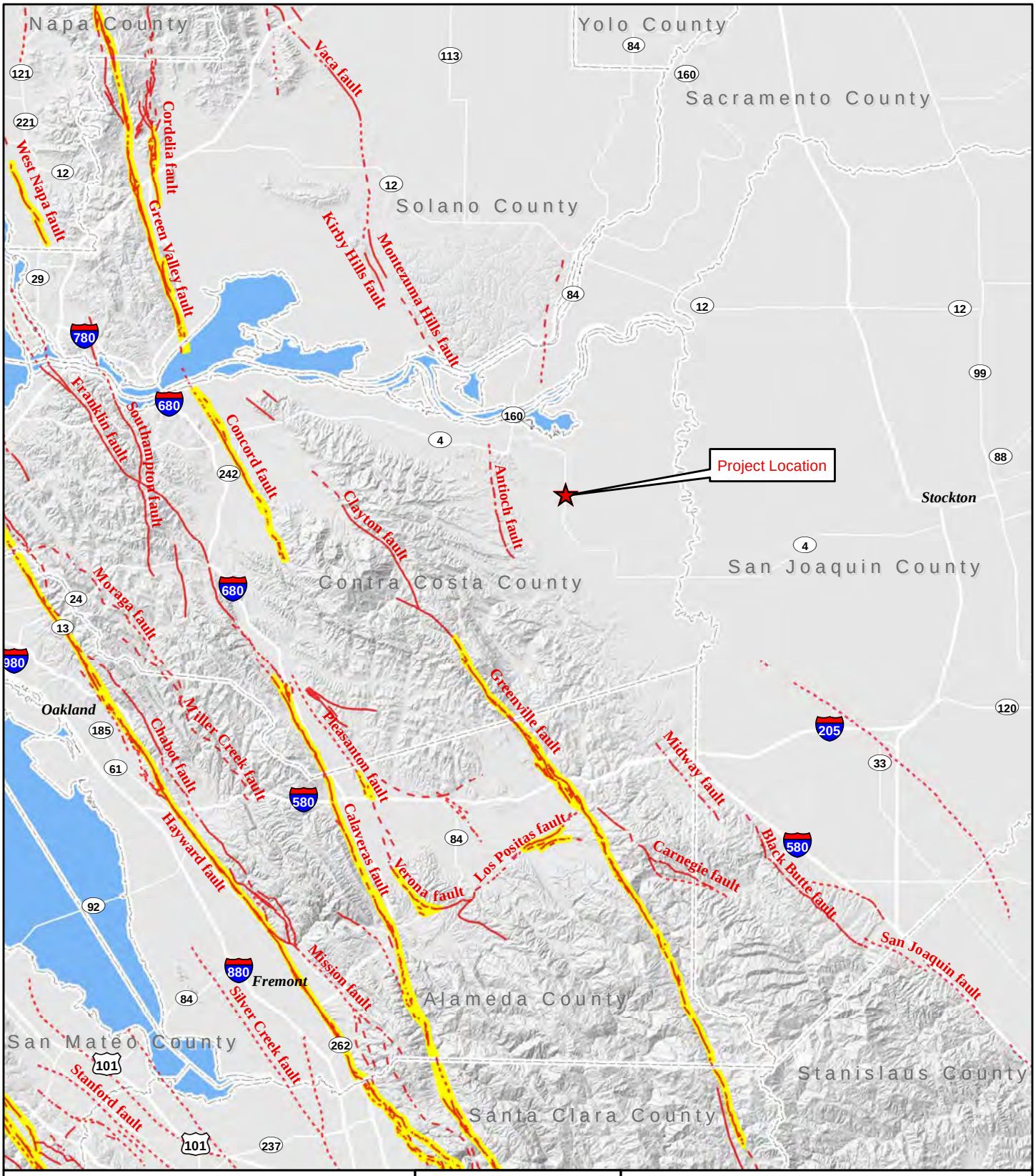

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Figure 9. Earthquake Fault Map

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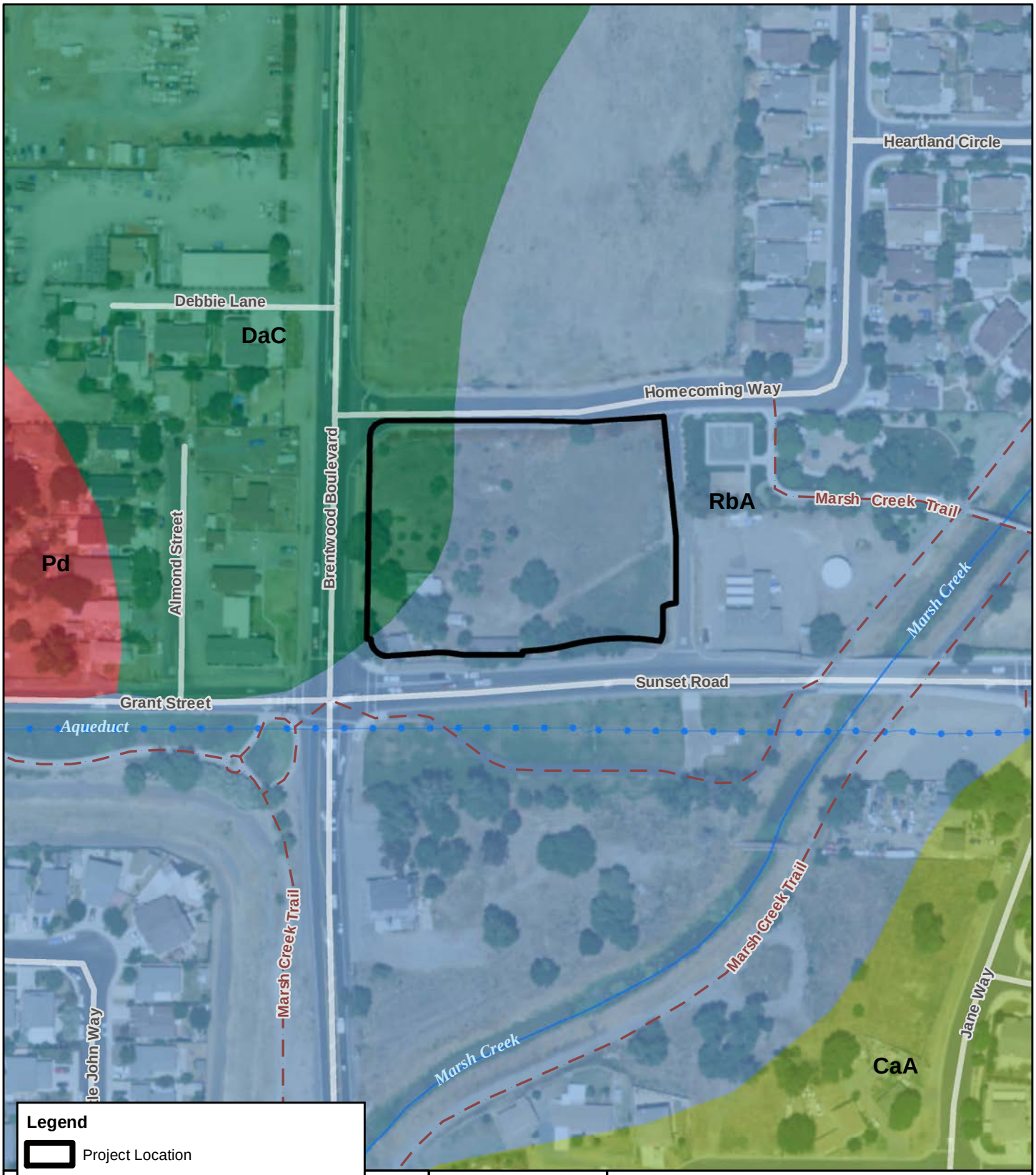

Sources: NRCS Web Soil Survey; Contra Costa County; OpenStreets; ArcGIS Online World Imagery Map Service. Map date: September 8, 2017.

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Figure 10. Project Site Soils

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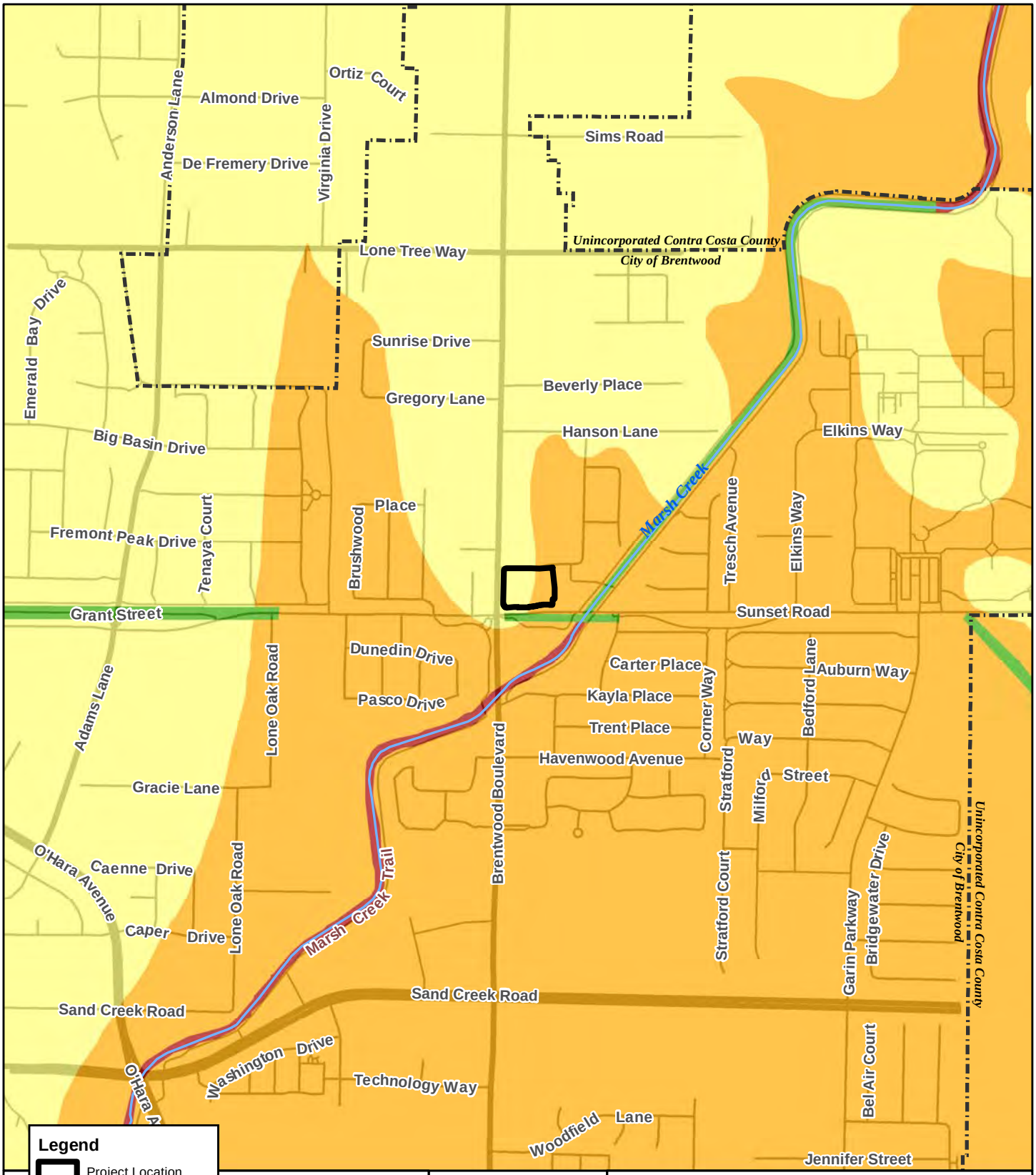

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Figure 11. Liquefaction Susceptibility

Sources: Contra Costa County; OpenStreets; City of Brentwood. ABAG Resilience Program, Earthquake Basics. Map date: September 6, 2017.

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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	

BACKGROUND

Various gases in the Earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

Naturally occurring greenhouse gases include water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. Although the direct greenhouse gases CO_2, CH_4, and N_2O occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2005, concentrations of these three greenhouse gases have increased globally by 36, 148, and 18 percent, respectively (IPCC 2007)[5].

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs).

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors (California Energy Commission 2006a)[6]. In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (California Energy Commission 2006a).

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5 Intergovernmental Panel on Climate Change. 2007. "Climate Change 2007: The Physical Science Basis, Summary for Policymakers." Available at: http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm.

6 California Energy Commission. 2006a. Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004. Available at: http://www.arb.ca.gov/cc/inventory/archive/archive.htm.

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California produced 492 million gross metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2004 (California Energy Commission 2006a). By 2020, California is projected to produce 507 $MMTCO_2e$ per year.[7]

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions. In 2012 transportation sector emissions, accounted for approximately 37 percent of the total GHG emissions in the state (California Greenhouse Gas Emission Inventory: 2000-2012).[8] This category was followed by the industrial sector contributing 21.9 percent of GHG emissions. The electric power generation sector (including both in-state and out of-state sources) has seen the greatest decline in GHG emissions down 14 percent from 2000, and currently contributing 11.2 percent of all state GHG emissions.

EFFECTS OF GLOBAL CLIMATE CHANGE

The effects of increasing global temperature are far-reaching and extremely difficult to quantify. The scientific community continues to study the effects of global climate change. In general, increases in the ambient global temperature as a result of increased GHGs are anticipated to result in rising sea levels, which could threaten coastal areas through accelerated coastal erosion, threats to levees and inland water systems and disruption to coastal wetlands and habitat.

If the temperature of the ocean warms, it is anticipated that the winter snow season would be shortened. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the state. The snowpack portion of the supply could potentially decline by 70 to 90 percent by the end of the 21st century (Cal EPA 2006).[9] This phenomenon could lead to significant challenges securing an adequate water supply for a growing state population. Further, the increased ocean temperature could result in increased moisture flux into the state; however, since this would likely increasingly come in the form of rain rather than snow in the high elevations, increased

[7] California Air Resources Board. 2010. "Functional Equivalent Document prepared for the California Cap on GHG Emissions and Market-Based Compliance Mechanisms."

[8] EPA. Available at: http://www.arb.ca.gov/cc/inventory/pubs/reports/ghg_inventory_00-12_report.pdf.

[9] California Environmental Protection Agency, Climate Action Team. 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature. Available at: http://www.climatechange.ca.gov/climate_action_team/reports/.

precipitation could lead to increased potential and severity of flood events, placing more pressure on California's levee/flood control system.

Sea levels have risen approximately seven inches during the last century and it is predicted to rise an additional 22 to 35 inches by 2100, depending on the future GHG emissions levels (Cal EPA 2006). If this occurs, resultant effects could include increased coastal flooding, saltwater intrusion and disruption of wetlands (Cal EPA 2006). As the existing climate throughout California changes over time, mass migration of species, or failure of species to migrate in time to adapt to the perturbations in climate, could also result. Under the emissions scenarios of the Climate Scenarios report (Cal EPA 2006), the impacts of global warming in California are anticipated to include, but are not limited to, the following.

Public Health

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation are projected to increase from 25 to 35 percent under the lower warming range and to 75 to 85 percent under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become impossible to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances depending on wind conditions. The Climate Scenarios report indicates that large wildfires could become up to 55 percent more frequent if GHG emissions are not significantly reduced.

In addition, under the higher warming scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100. This is a large increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures will increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

Water Resources

A vast network of man-made reservoirs and aqueducts capture and transport water throughout the State from Northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada snow pack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snow pack, increasing the risk of summer water shortages.

The state's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta, a major state fresh water supply. Global warming is also projected to seriously affect agricultural areas, with California farmers projected to lose as much as 25 percent of the water supply they need; decrease the potential for hydropower production within the state (although the effects on hydropower are uncertain); and seriously harm winter tourism. Under the lower warming range, the snow dependent winter

recreational season at lower elevations could be reduced by as much as one month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing, snowboarding, and other snow dependent recreational activities.

If GHG emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snow pack by as much as 70 to 90 percent. Under the lower warming scenario, snow pack losses are expected to be only half as large as those expected if temperatures were to rise to the higher warming range. How much snow pack will be lost depends in part on future precipitation patterns, the projections for which remain uncertain. However, even under the wetter climate projections, the loss of snow pack would pose challenges to water managers, hamper hydropower generation, and nearly eliminate all skiing and other snow-related recreational activities.

Agriculture

Increased GHG emissions are expected to cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. Although higher carbon dioxide levels can stimulate plant production and increase plant water-use efficiency, California's farmers will face greater water demand for crops and a less reliable water supply as temperatures rise.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than-optimal development for many crops, so rising temperatures are likely to worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits and nuts, and milk.

Crop growth and development will be affected, as will the intensity and frequency of pest and disease outbreaks. Rising temperatures will likely aggravate ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

In addition, continued global warming will likely shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. Should range contractions occur, it is likely that new or different weed species will fill the emerging gaps. Continued global warming is also likely to alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

Forests and Landscapes

Global warming is expected to alter the distribution and character of natural vegetation thereby resulting in a possible increased risk of large wildfires. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55 percent, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation,

winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state. For example, if precipitation increases as temperatures rise, wildfires in Southern California are expected to increase by approximately 30 percent toward the end of the century. In contrast, precipitation decreases could increase wildfires in Northern California by up to 90 percent.

Moreover, continued global warming will alter natural ecosystems and biological diversity within the state. For example, alpine and sub-alpine ecosystems are expected to decline by as much as 60 to 80 percent by the end of the century as a result of increasing temperatures. The productivity of the state's forests is also expected to decrease as a result of global warming.

Rising Sea Levels

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the state's coastal regions. Under the higher warming scenario, sea level is anticipated to rise 22 to 35 inches by 2100. Elevations of this magnitude would inundate coastal areas with saltwater, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

Significance Thresholds

Governor's Office of Planning and Research's (OPR's) Guidance does not include a quantitative threshold of significance to use for assessing a project's GHG emissions under CEQA. Moreover, the California Air Resources Board (CARB) has not established such a threshold or recommended a method for setting a threshold for project-level analysis. In the absence of a consistent statewide threshold, a threshold of significance for analyzing the project's GHG emissions was developed. The issue of setting a GHG threshold is complex and dynamic, especially in light of the California Supreme Court decision in *Center for Biological Diversity v. California Department of Fish and Wildlife* (referred to as the Newhall Ranch decision hereafter). The California Supreme Court ruling also highlighted the need for the threshold to be tailored to the specific project type, its location, and the surrounding setting. Therefore, the threshold used to analyze the project is specific to the analysis herein and the City retains the ability to develop and/or use different thresholds of significance for other projects in its capacity as lead agency and recognizing the need for the individual threshold to be tailored and specific to individual projects.

The City of Brentwood has determined that the BAAQMD thresholds of significance are the best available option for evaluation of GHG impacts for this project and, thus, are used in this analysis.

The BAAQMD threshold of significance for project-level operational GHG emissions is 1,100 MTCO2*e*/yr or 4.6 MTCO2*e* per service population (employees + residents), per year (MTCO2*e*/SP/yr). Construction GHG emissions are a one-time release and are, therefore, not typically expected to generate a significant contribution to global climate change. As such, BAAQMD has not established a threshold of significance for construction-related GHG emissions and the District does not require their quantification. Nevertheless, this analysis has amortized construction emissions over the anticipated 25-year lifetime of the project.

RESPONSES TO CHECKLIST QUESTIONS

Response a) and b): Less than Significant with Mitigation. The proposed project's short-term construction-related and long-term operational GHG emissions for buildout of the proposed project, were estimated using CalEEMod™ (v.2016.3.1). CalEEMod is a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify GHG emissions from land use projects. The model quantifies direct GHG emissions from construction and operation (including vehicle use), as well as indirect GHG emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Emissions are expressed in annual metric tons of CO_2 equivalent units of measure (i.e., $MTCO_2e$), based on the global warming potential of the individual pollutants.

Short-Term Construction GHG Emissions

Estimated increases in GHG emissions associated with construction of the proposed project (all phases collectively) are summarized in Table 10.

TABLE 10: CONSTRUCTION GHG EMISSIONS (METRIC TONS/YR) (UNMITIGATED)

	Bio-CO_2	***NBio-CO_2***	***Total CO_2***	***CH_4***	***N_2O***	***CO_2e***
2018	0.0000	109.8857	109.8857	0.0224	0.0000	110.4468
Maximum	**0.0000**	**109.8857**	**109.8857**	**0.0224**	**0.0000**	**110.4468**

SOURCE: CALEEMOD VERSION 2016.3.1.

As shown above in Table 1, construction activities would result in maximum annual emissions of 110.4468 $MTCO_2e$/year and would not exceed the recommended mass emission threshold for GHG emissions of 1,100 $MTCO_2e$/year.

These construction GHG emissions are a one-time release and are comparatively much lower than overall emissions associated with operational phases of a project. Construction GHG emissions from the proposed project do not impede local GHG reduction efforts, or violate GHG reduction goals set by AB 32, as required by the Public Resources Code, Section 21082.2. Therefore, cumulatively these construction emissions would not generate a significant contribution to global climate change.

Long-Term Operational GHG Emissions

The long-term operational GHG emissions estimate for buildout of the proposed project incorporates the potential area source and vehicle emissions, and emissions associated with utility and water usage, and wastewater and solid waste generation. Estimated GHG emissions associated with buildout of the proposed project are summarized in Table 11.

As shown in Table 11, operation of the project would result in annual emissions of 913.0479 MT CO_2e/year, which does not exceed the recommended BAAQMD mass emission GHG threshold of 1,100 $MTCO_2e$/year. Therefore, this impact would be less than significant.

TABLE 11: OPERATIONAL GHG EMISSIONS - 2018 (UNMITIGATED METRIC TONS/YR)

	Bio-CO_2	***NBio-CO_2***	***Total CO_2***	***CH_4***	***N_2O***	***CO_2e***
Area	0.0000	3.9000e-004	3.9000e-004	0.0000	0.0000	4.2000e-004
Energy	0.0000	66.8716	66.8716	3.0600e-003	1.2800e-003	67.3289
Mobile	0.0000	818.2076	818.2076	0.0533	0.0000	89.5396
Waste	9.3538	0.0000	9.3538	0.5528	0.0000	23.1737
Water	0.4449	1.0870	1.5319	0.0458	1.1000e-003	3.0052
Total	**9.7987**	**886.1665**	**895.9652**	**0.6549**	**2.3800e-003**	**913.0479**

SOURCE: CALEEMOD VERSION 2016.3.1.

Combining the construction GHG emissions (Table 10) with the operational GHG emissions (Table 11), construction and operation of the project would result in emissions of 1,023.4947 MT CO_2e/year, which also does not exceed the recommended BAAQMD mass emission GHG threshold of 1,100 MTCO_2e/year. Therefore, this impact would be less than significant.

The proposed project would be constructed in compliance with the California Green Building Standards and would install energy efficient lighting. The City's 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 States GHG reduction goals established under AB 32.

Conclusion

As stated previously, short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the proposed project. Construction GHG emissions from the proposed project do not impede local GHG reduction efforts, or violate GHG reduction goals set by AB 32, as required by the Public Resources Code, Section 21082.2. Therefore, cumulatively these construction emissions would not generate a significant contribution to global climate change.

Because project-related construction emissions of GHGs would be less than the BAAQMD mass emission threshold of 1,100 MT CO2e/year, the project would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment. Implementation of the proposed project (all phases) would not exceed an established threshold, conflict with any applicable plan, policy, or regulation related to GHG reduction. Therefore, impacts related to GHG emissions and global climate change would be considered **less than significant**.

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

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b): Less than Significant with Mitigation. The proposed project would place a gas station, car wash, and convenience store in an area of the City that currently contains residential, industrial and commercial uses.

These two significance thresholds focus on the exposure of people to hazards either existing or created by the project; therefore, they are discussed together. The project would include demolition of existing structures and the subsequent development of a gas station, car wash, convenience store, and future fast-food restaurant. Construction and operation of the project would 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.

Work Near Marsh Creek

Marsh Creek is located approximately 205 feet southwest of the southwestern corner of the project site. Project construction would entail demolition, vegetation removal, grading, and construction of the proposed buildings. To prevent excessive fugitive dust and increase amounts of sedimentation entering Marsh Creek, the project would be required to prepare a SWPPP (as required by Mitigation Measure HYD-1) and comply with state and local regulations, which would implement BMPs that would prevent sediment from entering Marsh Creek. Therefore, this impact would less than significant.

Project Construction

Project construction would require the demolition an existing residence and four associated outbuildings. Because of the age of the existing structures, there is a possibility that potentially hazardous building materials including, but not limited to, asbestos-containing materials, lead-based paint, polychlorinated biphenyl (PCBs), or mercury may be encountered during demolition. If present, removal of these materials would be conducted by contractors licensed and permitted to handle these materials in accordance with all applicable federal, state, and local regulations. However, given the site's history, the potential to encounter hazardous materials would be potentially significant. Mitigation Measures HAZ-2 and HAZ-3 would be required in order to ensure demolition of the existing structures does not result in a hazardous release of lead-based paint, asbestos, or other hazardous materials. Therefore, with the implementation of these mitigation measures, short-term construction impacts associated with the handling of hazardous materials would be less than significant.

Further, 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

Project operation would involve the routine transport, use, or disposal of hazardous materials. The project area currently contains an existing residence. Because the proposed project includes development of a gas station, underground storage tanks (USTs) would be required store gas and diesel fuel on the project site. The USTs would likely consist of double-walled, fiberglass fuel storage tanks with leak detection sensors. Because of the nature of the proposed project, and in particular the gas station, the project would be subject to routine inspection by federal, state, and local regulatory agencies with jurisdiction over fuel-dispensing facilities.

To be operational after construction, the proposed project, including the USTs and all associated fuel delivery infrastructure (i.e., gas pumps), would be required to comply with all applicable federal, state, and local regulations, including but not limited to those provisions established by Section 2540.7, Gasoline Dispensing and Service Stations, of the California Occupational Safety and Health (Cal/OSHA) Regulations; Chapter 38, Liquefied Petroleum Gases, of the California Fire Code; RCRA; and the Contra Costa Fire Department. Collectively, the routine inspection of the gas station, the USTs, and all associated fuel delivery infrastructure, along with the continued mandated compliance with all federal, state, and local regulations, would ensure that the proposed project is operated in a non-hazardous manner. 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, construction of the project has the potential to release hazardous materials into the environment, such as asbestos-containing materials, lead-based paint, PCBs, or mercury. Therefore, with implementation of the following mitigation measures, the proposed project would have a **less than significant** impact relative to this issue.

Mitigation Measure(s)

Implement Mitigation Measure HYD-1 (SWPPP).

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.

Mitigation Measure HAZ-2: *Prior to demolition activities, an asbestos survey shall be conducted by an Asbestos Hazard Emergency Response Act (AHERA) and California Division of Occupational Safety and Health (Cal/OSHA) certified building inspector to determine the presence or absence of asbestos containing-materials (ACMs). If ACMs are located, abatement of asbestos shall be completed prior to any activities that would disturb ACMs or create an airborne asbestos hazard. Asbestos removal shall be performed by a State certified asbestos containment contractor in accordance with BAAQMD Rule 2.*

Mitigation Measure HAZ-3: *If paint is separated from building materials (chemically or physically) during demolition of the structures, the paint waste shall be evaluated independently from the building material by a qualified Environmental Professional. If lead-based paint is found, abatement shall be completed by a qualified Lead Specialist prior to any activities that would create lead dust or fume hazard. Lead-based paint removal and disposal shall be performed in accordance with California Code of Regulation Title 8, Section 1532.1, which specifies exposure limits, exposure monitoring and respiratory protection, and mandates good worker practices by workers exposed to lead. Contractors performing lead-based paint removal shall provide evidence of abatement activities to the Building Official.*

Response c): No Impact. The project site is not located within ¼ mile of an existing school. Mary Casey Black Elementary School is located approximately 0.35 mile southeast of the project site and Marsh Creek Elementary School is approximately 0.55 mile west of the site. Therefore, **no impact** would occur as a result of the proposed project.

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:

> ***Skipolini Property*** (site # 60002296). The site is located at 7281 Lone Tree Way in Brentwood. The site is approximately 1.72 acres in area and is identified by APN 018-080-022. The site currently consists of undeveloped fallow land. Review of historical records indicates that the site had been occupied by residential structures between 1949 and 2003. Review of historical records indicates that structures were demolished in 2003 and the site has been undeveloped since. Historical aerial photographs indicate a portion of the parcel consisted of orchards. The site is a voluntary cleanup site and is active as of January 1, 2016.

Cook Battery (Oakley Battery) (site # 07360035). The Cook Battery Reclamation site, a residential property, was used for a battery reclamation business in the 1950s and 1960s. Salvageable lead was removed from discarded automobile batteries. Buried battery casings were found on and near the site. The site is a State4 response or NPL and has a certified / operation and maintenance status as of June 28, 2006.

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 2.64 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 BBSP uses. The BBSP designation accommodates a range of residential, commercial, office, mixed use, and other complementary uses that encourage the revitalization of the Brentwood Boulevard corridor within the BBSP area. The BBSP designates the proposed project site for General Commercial uses. A General Plan Amendment would not be required for the project. However, because the proposed gas station portion of the project is not an explicitly permitted use, a Conditional Use Permit would be required. 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 SWPPP to be prepared for the site. A SWPPP describes 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 seven active groundwater wells, which provided approximately 30 percent of the potable water supplied during 2010. Brentwood is located within the Tracy Subbasin of the San Joaquin Valley Groundwater Basin. While the project would create new impervious surface areas on portions of the 2.236-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 with hydrologic groups "A" (Delhi sand, 0.50 acres) and "C" (Rincon clay loam, 1.83 acres), which is indicative of soils having a high to low 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 open space and landscape areas would provide an area 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)[10].

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. The following activities could potentially serve as a source of pollutants entering the storm system:

- Food services at the convenience store;
- Refuse disposal;
- Fuel dispensing; and
- Car washing.

If uncontrolled, operation of the proposed project could result in the potential for pollutants to wash down and potentially drain into the nearby Marsh Creek. 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.

A Stormwater Control Plan was completed for the project in January 2017 (see Appendix E). Table 7, Sources and Source Control, of the Stormwater Control Plan lists various permanent source control BMPs and operational source control BMPs for potential sources of runoff pollutants. All proposed buildings where food would be prepared would be constructed with grease interceptors. Additionally, two refuse areas would be provided on-site in order to control on-site refuse disposal. The dumpsters would be marked with the words "Do Not Dump Hazardous Materials Here", or similar. Additionally, dry sweeping of the fueling areas would be

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

routinely completed. Further, all washing would occur within the proposed covered car wash structure, and the water from the car wash would be collected and recycled. The aforementioned BMPs are included in the Stormwater Control Plan for the project.

The proposed site layout has been optimized to comply with City of Brentwood code requirements for common open-space, landscaping coverage, parking requirements, and required right-of-way dedications. Common open-spaces have been scattered throughout the development. These areas will be constructed of permeable pavers. According to the Plan, the project has two stormwater control opportunities:

- Site grading: The grade change will provide hydraulic head and adequate slopes to efficiently convey stormwater runoff; and
- Common open space: The common open space areas are proposed to be constructed of pavers and landscaping. These areas will provide upgraded pedestrian amenities, while serving as possible stormwater control measures if permeable pavers are constructed.

The project site contains 23 drainage management areas. Stormwater from 20 of the 23 drainage management areas would be self-treated on-site via landscaping, permeable pavers, and gravel. Stormwater from the remaining three drainage management areas would drain to Integrated Management Practice 1 (IMP 1). IMPs are facilities that provide small-scale treatment, retention, and/or detention and is integrated into site layout, landscaping, and drainage design. The IMP 1 areas consist of conventional roofs and paved parking and maneuvering areas. The paved parking and maneuvering areas will be used for fuel dispensing, parking, drive isles, and vehicle stacking. IMP 1 will not be an LID treatment / detention facility. IMP 1 will consist of a vault based, high-flowrate media biofilter. The use of an LID facility is not feasible due to the reduction in overall site area (required right-of-dedications) and slope of the site. Landscaping areas along the perimeter of the site are not suitable for the construction of biofiltration facilities as adequate space is not available to overcome slope and width constraints. The proposed development fully-complies with the City of Brentwood Municipal Code for minimum number of parking spaces based upon building sizes, required minimum common open-space area, and minimum required landscape area. In order to accommodate the proposed development while meeting all above City listed requirements, the use of a non-LID treatment/detention facility is needed.

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.

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.*
- *Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect wash water containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.*
- *Dry sweep the fueling area routinely.*
- *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.*

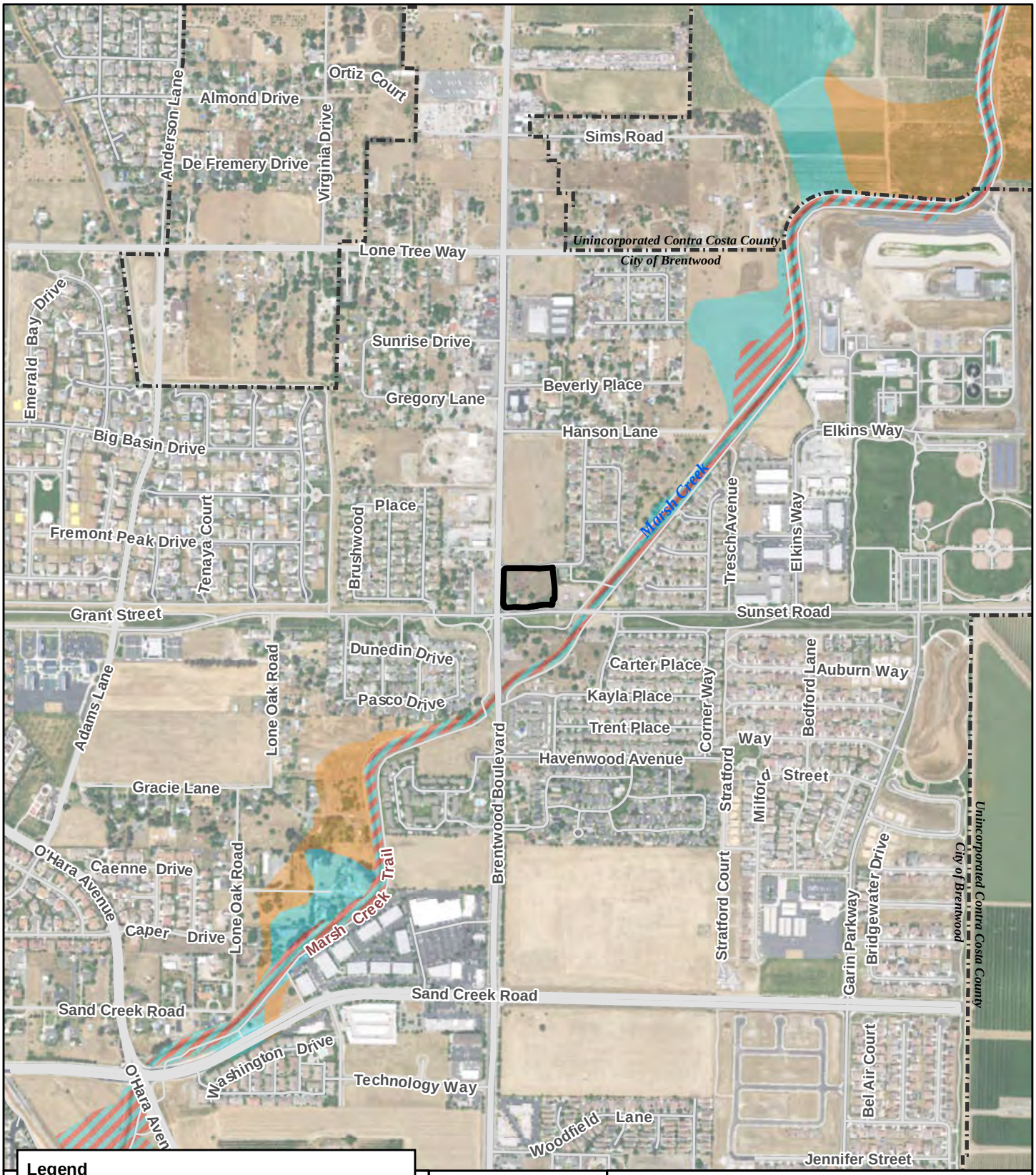
Mitigation Measure HYD-5: *The Applicant/Developer shall ensure that the project site shall drain into a street, public drain, or approved private drain, in such a manner that un-drained depressions shall not occur. Satisfaction of this measure shall be subject to the approval of the City Engineer.*

Responses g), h), i): Less than Significant. According to the FEMA Flood Insurance Rate Map (FIRM) shown in Figure 12, the project site is not located within a designated flood zone.

Additionally, as shown in Figure 13, 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.



Legend

- Project Location

FEMA Designation

- 1% Annual Chance Flood Hazard (100-yr Flood Zone)
- 0.2% Annual Chance Flood Hazard (500-yr Flood Zone)
- Regulatory Floodway

0 300 600
Feet

Sources: Contra Costa County; OpenStreets; City of Brentwood. FEMA National Flood Hazard Layer (Official). Map date: September 6, 2017.

CITY OF BRENTWOOD - ARCO AM/PM

Figure 12. FEMA Flood Insurance Rate Map

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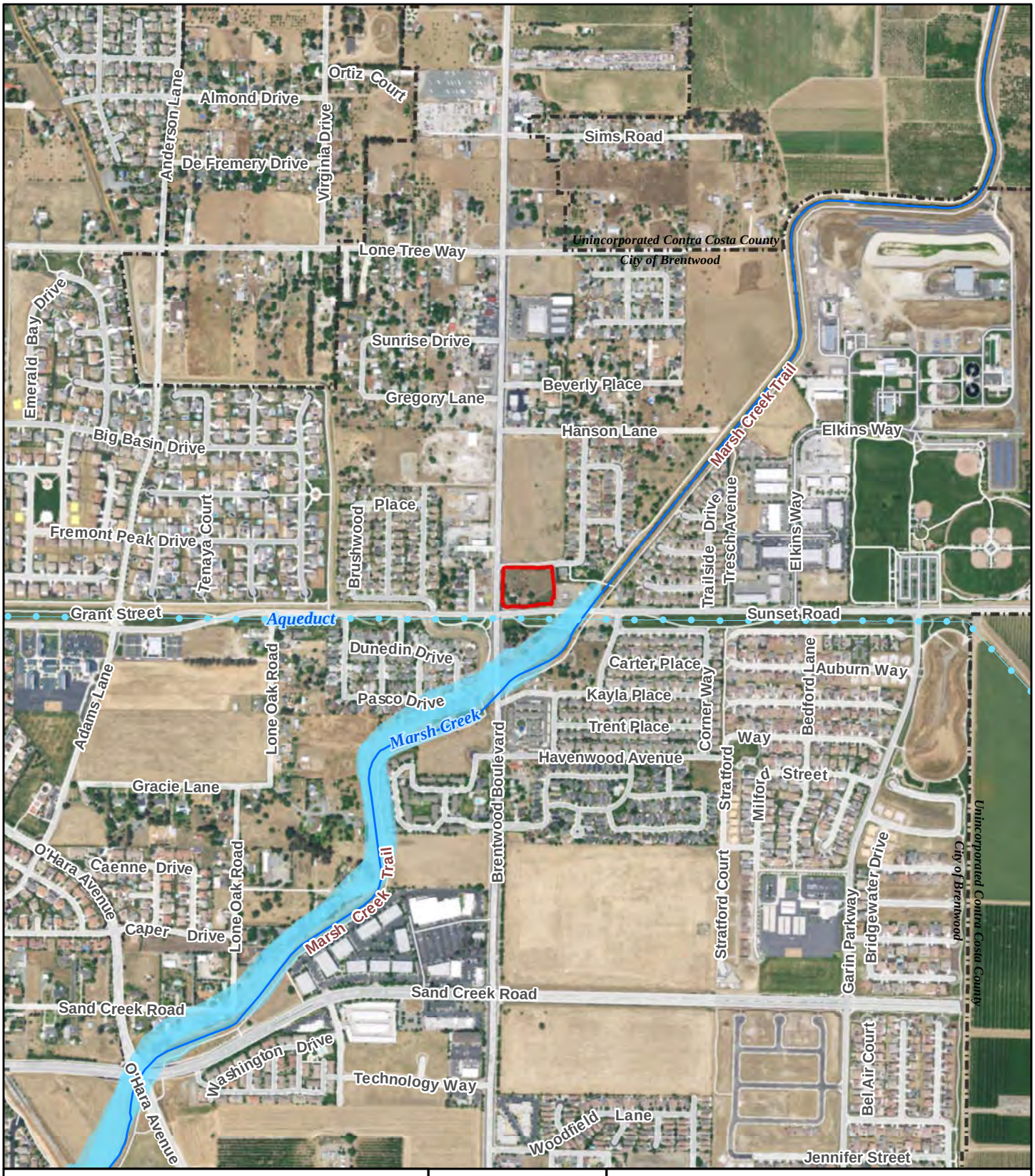

Legend

Project Location

Dam Inundation Areas

Marsh Creek Reservoir and Dry Creek Dam

Sources: Contra Costa County; OpenStreets; City of Brentwood. California OES Dam Inundation Map Service; California OES Dam Inundation CD. Map date: September 8, 2017.

N

0 300 600

Feet

CITY OF BRENTWOOD - ARCO AM/PM

Figure 13. 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 2.236-acre project site contains a single-family residence and associated improvements. Currently, the site is surrounded by existing commercial, industrial, and residential land uses. The proposed project, which includes a gas station, car wash, and convenience store, would not physically divide an established community due to the nature of the site, and its location on the northeastern city limits. Therefore, the project would have **no impact** related to physically dividing an established community.

Response b): Less than Significant. The 2014 Brentwood General Plan identifies the project site for BBSP land uses. The BBSP designation provides for the current and future uses along the Brentwood Boulevard corridor, in accordance with the BBSP. The BBSP designation accommodates a range of residential, commercial, office, mixed use, and other complementary uses that encourage the revitalization of the Brentwood Boulevard corridor within the BBSP area. The proposed project consists of the development of a gas station, convenience store, and drive-through car wash, which are within the General Plan use requirements. The BBSP designation accommodates a range of residential, commercial, office, mixed use, and other complementary uses that encourage the revitalization of the Brentwood Boulevard corridor within the BBSP area. The BBSP designates the proposed project site for General Commercial uses. A General Plan Amendment would not be required for the project. However, because the proposed gas station portion of the project is not an explicitly permitted use, a Conditional Use Permit would be required.

The BBSP requires that buildings on properties designated for General Commercial development must measure 20 feet high, but no more than 30 feet high. A review of the City's BBSP and Design Guidelines would be required in regard to architecture as the proposed elevations are not in compliance with either document.

The project site is currently zoned BBSP by the Brentwood Zoning Map. A Zoning Amendment would not be required for the project.

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 Development Fee. However, given the level of development that was present on this parcel at the time that the ECCC HCP/NCCP was adopted, the site was mapped with a land cover designation of Urban, Turf, Landfill, or Aqueduct, and will not be assessed the Development Fee, as the site is not considered suitable for covered species habitat. 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 September of 2017. The full report is included as Appendix F.

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.

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

The FHWA Highway Traffic Noise Prediction Model (FHWA-RD 77-108) was used to develop L_{dn} (24-hour average) noise contours for the primary Project-area roadways. The model is based upon the CALVENO 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 predicts hourly L_{eq} values for free-flowing traffic conditions, and is generally considered to be accurate within 1.5 dB. To predict L_{dn} values, it is necessary to determine the hourly distribution of traffic for a typical 24-hour period.

Direct inputs include traffic volumes provided by the project traffic consultant (KDAnderson & Associates, 2017), posted travel speeds, and day/night effective traffic split information.

To quantify the existing ambient noise environment in the project vicinity, a continuous 24-hour noise level measurement was conducted on August 28th and 29th, 2017. In addition, short-term noise level measurements were conducted at two locations: the North West corner of the project site and near a park area North East of the project site. The noise level measurement locations are shown in Figure 14. The noise measurement survey results are provided in Table 12.

Larson Davis Laboratories (LDL) Models 820 and 824 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).

The sound level meters were programmed to record the maximum, median, and average noise levels at each site during the survey. The maximum value, denoted L_{max}, represents the highest noise level measured. The average value, denoted L_{eq}, represents the energy average of all of the noise received by the sound level meter microphone during the monitoring period. The median value, denoted L_{50}, represents the sound level exceeded 50 percent of the time during the monitoring period.

TABLE 12: SUMMARY OF MEASURED AMBIENT NOISE LEVELS

Site	Measured	Average Hourly Daytime & Evening (7:00am - 10:00pm)			Average Hourly Nighttime (10:00pm – 7:00am)		
	L_{dn}	L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}
Continuous 24-hour Noise Measurements							
A	65 dB	62 dB	58 dB	83 dB	57 dB	48 dB	76 dB
Short-term Noise Measurements							
1	N/A	67 dB		63 dB	84 dB	AT 12:33 P.M.	
2	N/A	51 dB		50 dB	58 dB	AT 1:25 P.M.	

SOURCE: 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 13 (TABLE N-1 OF CITY OF BRENTWOOD NOISE ELEMENT): LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENT

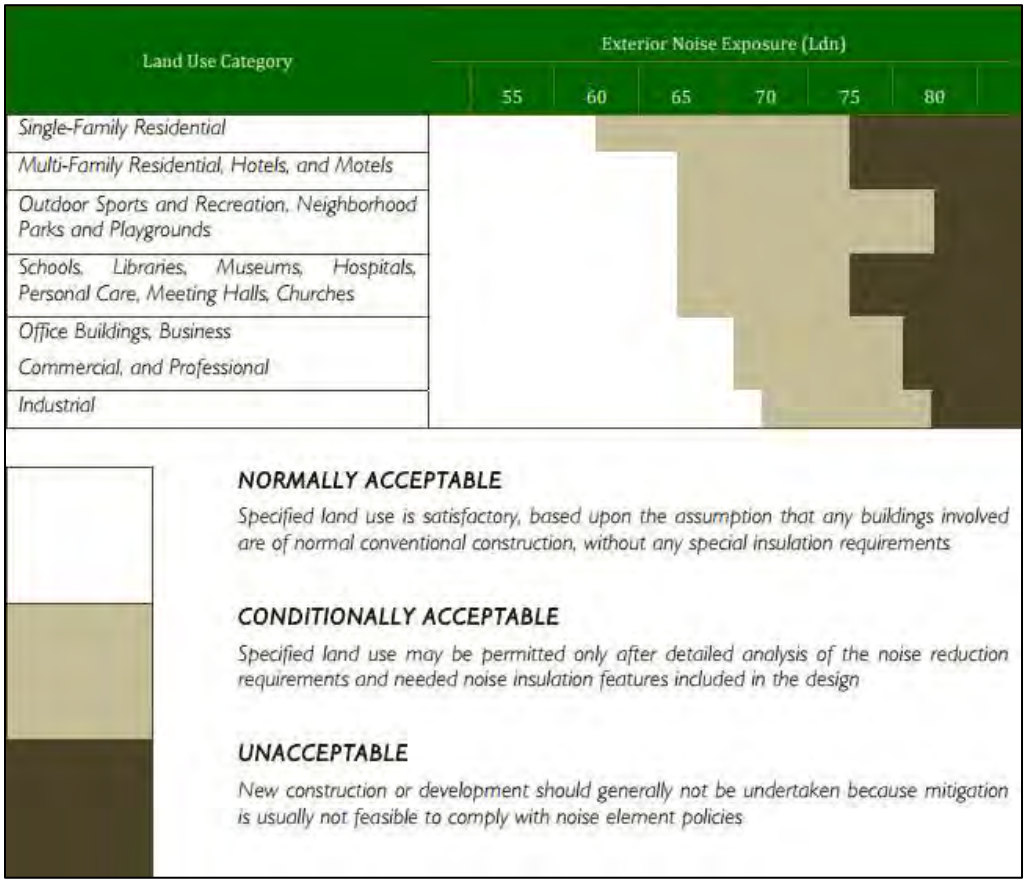

TABLE 14 (TABLE N-2 OF CITY OF BRENTWOOD NOISE ELEMENT): STATIONARY (NON-TRANSPORTATION) NOISE SOURCE STANDARDS)

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 with Mitigation.

Exterior and Existing Plus Project Traffic Noise Levels

To quantify the existing traffic noise levels, j.c. brennan & associates, Inc. utilizes the FHWA RD77-108 Traffic Noise Prediction Model. The model uses the Calveno noise emission factors developed by Caltrans, specific to California automobile, medium truck and heavy truck noise emissions. Direct inputs include traffic volumes provided by the project traffic consultant (KD Anderson and Associates, Inc.), posted travel speeds and day/night effective traffic split information. Table 15 shows the results of the existing and existing plus project traffic noise levels adjacent to the project site and along the roadway network.

Based upon Table 15, the project will result in an increase in existing traffic noise levels between 0 dB and 1 dB L_{dn}. Based upon City General Plan Policy N 1.7, this is a less than significant increase in traffic noise levels.

Based upon Table 15, the project would not result in exposing existing residences to traffic noise levels which exceed the exterior noise level standard of 60 dB L_{dn} shown in Table 13 (Table N-1 of City of Brentwood Noise Element).

Cumulative and Cumulative Plus Project Traffic Noise Levels

Table 16 shows the results of the cumulative and cumulative plus project traffic noise levels adjacent to the project site and along the roadway network. Based upon Table 16, the project will not increase future traffic noise levels. Therefore, the project will not result in a significant increase in traffic noise levels.

The project will not result in an exceedance of the exterior noise level standard of 60 dB L_{dn} shown in Table 13 (Table N-1 of City of Brentwood Noise Element).

Parking and Fueling Island Noise Levels

The traffic analysis indicates that the project is expected to generate up to 395 AM peak hour trips. Parking lots and fueling island noise levels generally are a result of vehicles arriving or departing, car doors slamming, and people talking. Noise level data for these activities indicate a typical sound exposure level (SEL) of 71 at a distance of 50 feet.

Based upon 395 AM peak hour trips, the noise exposure for the parking lot fueling activities can be calculated as follows

$$Leq = 71 + 10 * \log (N_{eq}) - 35.6, dB$$

71 is the mean sound exposure level (SEL) for an automobile arrival and departure, 10 * log (N_{eq}) is ten times the logarithm of the number of vehicle trips per hour, and 35.6 is ten times the logarithm of the number of seconds in an hour.

TABLE 15: FHWA-PREDICTED EXISTING AND FHWA PREDICTED EXISTING PLUS PROJECT TRAFFIC NOISE LEVELS

Roadway	*Segment*	*Distance (feet) from Centerline*	*Exterior Noise Level, dBA L_{dn}*			*Distance to Contours (feet) Existing*			*Distance to Contours (feet) Existing + Project*		
			Existing	*Existing + Project*	*Δ*	*70 L_{dn}*	*65 L_{dn}*	*60 L_{dn}*	*70 L_{dn}*	*65 L_{dn}*	*60 L_{dn}*
Brentwood Blvd	South of Lone Tree Way	75	65	65	0	36	78	169	37	79	170
Lone Tree Way	West of Brentwood Blvd	75	61	61	0	19	40	86	19	40	87
Lone Tree Way	East of Brentwood Blvd	75	51	51	0	4	9	19	4	9	19
Sunset Rd	East of McHenry Way	75	58	59	1	13	27	59	13	28	61
Brentwood Blvd	South of Sunset Rd	75	65	65	0	34	73	157	35	75	162
Brentwood Blvd	S. of Applewood Common	75	65	65	0	36	77	166	37	79	171
Sand Creek Rd	East of Brentwood Blvd	75	59	59	0	13	28	61	11	24	52
Sand Creek Rd	West of Brentwood Blvd	75	62	62	0	21	46	99	21	46	99

SOURCE: KD ANDERSON & ASSOCIATES, INC. – TRAFFIC CONSULTING, 2017; J.C. BRENNAN & ASSOCIATES, INC. – FHWA RD77-108 TRAFFIC NOISE PREDICTION MODEL, 2017.

TABLE 16: FHWA-PREDICTED CUMULATIVE AND FHWA-PREDICTED CUMULATIVE PLUS PROJECT TRAFFIC NOISE LEVELS

Roadway	*Segment*	*Distance (feet) from Centerline*	*Exterior Noise Level, dBA L_{dn}*			*Distance to Contours (feet) Cumulative*			*Distance to Contours (feet) Cumulative + Project*		
			Cumulative	*Cumulative + Project*	*Δ*	*70 L_{dn}*	*65 L_{dn}*	*60 L_{dn}*	*70 L_{dn}*	*65 L_{dn}*	*60 L_{dn}*
Brentwood Blvd	South of Lone Tree Way	75	68	68	0	55	118	254	55	119	255
Lone Tree Way	West of Brentwood Blvd	75	63	63	0	26	55	119	26	56	120
Lone Tree Way	East of Brentwood Blvd	75	51	51	0	4	9	20	4	9	20
Sunset Rd	East of McHenry Way	75	60	60	0	16	34	74	16	35	75
Brentwood Blvd	South of Sunset Rd	75	68	68	0	53	115	247	54	117	251
Brentwood Blvd	S. of Applewood Common	75	68	68	0	53	115	248	54	117	251
Sand Creek Rd	East of Brentwood Blvd	75	59	59	0	13	29	62	13	29	63
Sand Creek Rd	West of Brentwood Blvd	75	62	62	0	23	49	105	23	49	106

SOURCE: KD ANDERSON & ASSOCIATES, INC. – TRAFFIC CONSULTING, 2017; J.C. BRENNAN & ASSOCIATES, INC. – FHWA RD77-108 TRAFFIC NOISE PREDICTION MODEL, 2017.

The formula indicates that the predicted peak hour L_{eq} is 61 dBA at a distance of 50 feet.

Based upon a typical distance from the center of the fueling area to the nearest sensitive receptor to the west (245-feet), the predicted noise levels are 47 dBA L_{eq} during the AM peak hour. The p.m. peak hour use is predicted to be 380 vehicles, and the predicted PM peak hour noise level would be 47 dBA L_{eq}. The predicted noise level will comply with the City of Brentwood daytime standard of 55 dBA L_{eq}, contained in Table 14 (Table N-2 of City of Brentwood Noise Element).

Nighttime trip generation, during the hours of 10 PM to 7 AM, is very low and is not expected to exceed the 45 dBA L_{eq} nighttime standard.

Car Wash Noise Levels

The project includes a car wash located at the southern portion of the project site. The project applicant has proposed to include a RYKO Mfg. 3-fan Slimline Dryer. Manufacturer data indicate that the car wash will result in an L_{max} of 73 dBA at a distance of 70-feet from the tunnel exit. On average, the fans will operate approximately 15-minutes per hour. Figure 15 shows the noise contours generated by the car wash. The predicted hourly average noise level is 51 dBA L_{eq} at the nearest sensitive receptor (330-feet west of the car wash exit) and will comply with the City of Brentwood daytime standard of 55 dBA L_{eq}, contained in Table 14 (Table N-2 of City of Brentwood Noise Element).

Conclusion

As described above, the project will not result in a significant increase in roadway noise levels, increases in operational noise levels, or increases in construction noise levels at the nearest residences. The following mitigation measure will minimize noise impacts resulting from noise impacts resulting from the proposed car wash. Implementation of the following mitigation measure will ensure consistency with the City's noise standards, and will reduce this potentially significant impact to a **less than significant** level.

Mitigation Measure(s)

Mitigation Measure NOI-1: *Prior to approval of improvement plans, the improvement plans shall indicate that the car wash operations will be restricted to the daytime hours of 7 AM to 10 PM. The improvement plans shall be submitted for review and approval by the City Engineer. Should the operator desire to allow use of the carwash outside of these hours, a request shall be submitted for the review and approval of the Community Development Director. The request shall include additional acoustical analysis, including a proposal for additional mitigation measures, to maintain conformance with all Brentwood noise regulations in effect at the time of the request.*

Response b): Less than Significant. The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as demolition, grading, utilities placement, and roadway construction occur. Construction activities would be temporary in nature and would likely occur during normal daytime working hours.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of

perception. Building damage can take cosmetic and/or structural forms. Table 17 shows the typical vibration levels produced by construction equipment.

TABLE 17: REPRESENTATIVE VIBRATION SOURCE LEVELS FOR 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.

Based upon research conducted by Caltrans, the threshold for architectural damage to structures is 0.20 inches per second peak particle velocity (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 17, project construction 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 residences. 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 US Environmental Protection Agency 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 from 80 to 89 dB at a distance of 50 feet.

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.

Construction-related noise generally would occur during daytime hours only. General Plan Noise Element Policy 4 (Goal N-1.2) establishes the following construction requirements:

All construction in the vicinity of noise sensitive land uses, such as residences, hospitals, or convalescent homes, shall be limited to daylight hours or 7:00 a.m. to 7:00 p.m. In addition, the following construction noise control measures shall be included as requirements at construction sites to minimize construction noise impacts:

- *Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.*
- *Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction area.*
- *Utilize "quiet" air compressors and other stationary noise sources where technology exists.*

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 City General Plan, 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 2.64 miles southeast of the project site. Although aircraft-related noise could occasionally be audible at the project site, noise would be extremely minimal. Exterior and interior noise levels resulting from aircraft would be compatible with the proposed project. Therefore, there would be **no impact**.

Figure 14
Brentwood Blvd. ARCO Project Site & Noise Measurement Locations

A : 24hr Noise Measurement Site

ST1 : Short Term Noise Measurement Site

: Project Site

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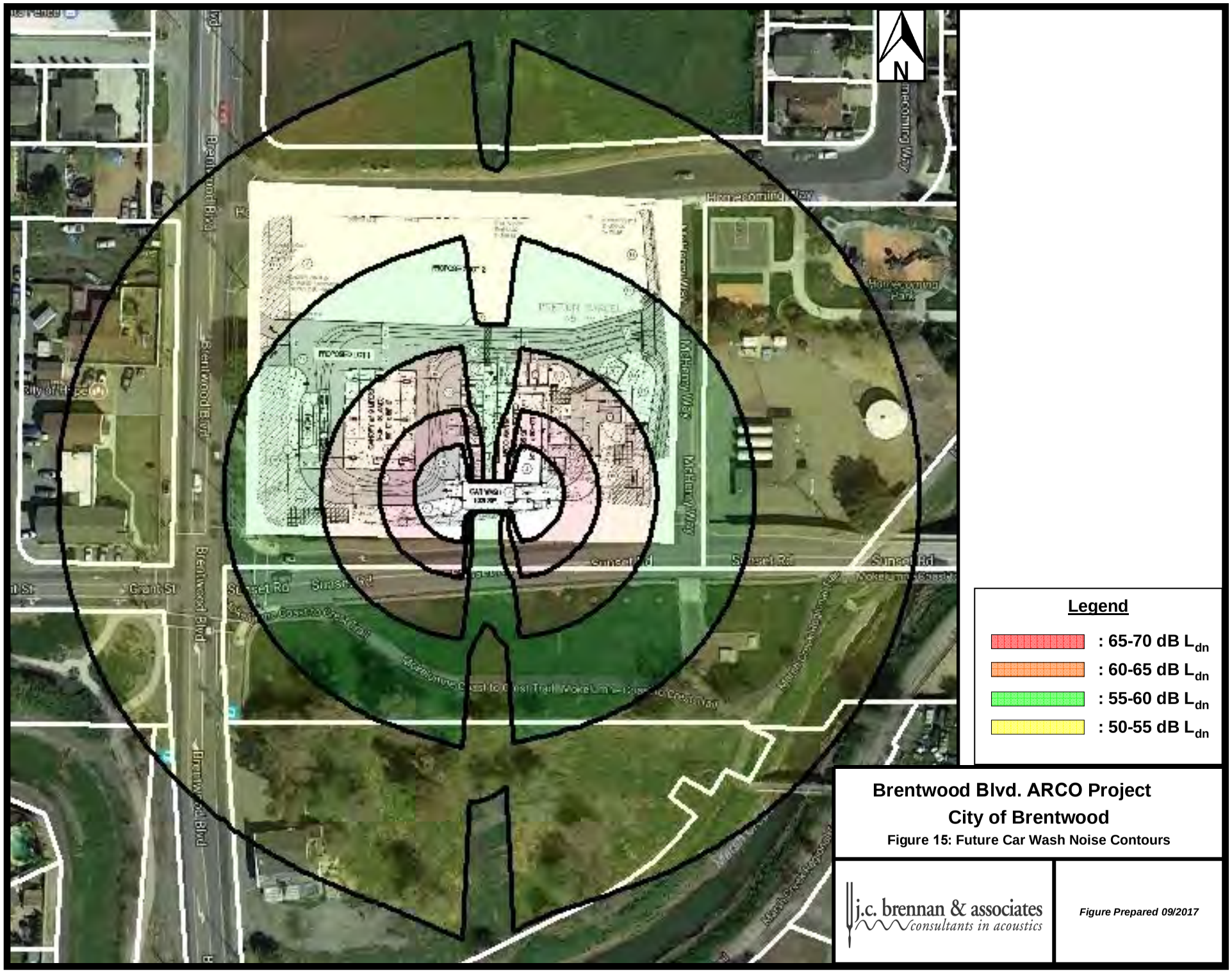

Brentwood Blvd. ARCO Project

City of Brentwood

Figure 15: Future Car Wash Noise Contours

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Figure Prepared 09/2017

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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 gas station, convenience store, and car wash on the project site. The proposed project is located near the northeastern 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. One residence is located within the southwestern portion of the project site. The home does not appear to be occupied at this time as the site, including the driveways, is surrounded by a chain link fence and the windows on the structures are covered with ply-wood. The residence would be demolished as part of the proposed project. However, development of the project site under the BBSP designation was analyzed in the City's General Plan EIR. The BBSP designation accommodates a range of residential, commercial, office, mixed use, and other complementary uses that encourage the revitalization of the Brentwood Boulevard corridor within the BBSP area. 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 because removal of the on-site residence and development of the project site was analyzed in the City's General Plan EIR.

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 3.0 miles southwest of the project site. Additionally, Station 54 (which is not currently manned) is located approximately 1.5 miles south 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.[11] 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 2.5 miles south of the project site.

[11] 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 and the Brentwood Union School District (BUSD). Liberty Union High School District (LUHSD) includes three comprehensive high schools: Liberty High, Freedom High, and Heritage High. In addition, the District 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; this capacity is currently being exceeded at all three high schools and facility needs are being met with portables.[12]

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

[12] 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.

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

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. In order to determine potential impacts related to traffic generated by the proposed Project, a Traffic Impact Study (TIS) was prepared by KDAnderson & Associates, Inc. in January 2017 (see Appendix G).

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

- Existing Peak Hour Conditions;
- Existing Plus Project Conditions (Gas Station and Fast-Food Restaurant);
- Existing Plus Approved Projects (EPAP) Conditions;
- Existing Plus Approved Projects Plus Project;
- Long-Term Cumulative Conditions; and
- Long-Term Cumulative with Gas Station and Fast-Food Restaurant Project.

The EPAP condition is a near-term background condition which includes existing traffic volume levels plus new traffic associated with approved and/or pending land use development projects in this area of Brentwood.

The Cumulative condition is a long-term background condition which includes future year forecasts of traffic volumes based on the Contra Costa Transportation Authority traffic model, and assumes future development of surrounding land uses expected by the year 2040 as well as completion of programmed / funded roadway improvements.

Study Area

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

- Brentwood Boulevard is a north-south arterial street and provides regional access through the City of Brentwood. The roadway is classified as a Major Arterial and provides connections to the City of Oakley to the north and the community of Byron to the south. The roadway is classified as a Route of Regional Significance in the Contra Costa Transportation Authority (CCTA) East County Action Plan. Within the study area, Brentwood Boulevard transitions from a four-lane facility south of Marsh Creek to a two-lane facility north through the study area. South of Marsh Creek, the roadway is fully improved with center median, bike lanes and curb, gutter and sidewalk. North of Marsh Creek, the two-lane facility has been improved with a center median from Homecoming Way to Lone Tree Way. Additionally, the east side of the roadway has been improved with two northbound lanes and curb, gutter and sidewalk from Hanson Lane north to Lone Tree Way. The balance of this northerly segment provides striped shoulders, but no sidewalk or bike lane facilities. The posted speed limit through the study area is 40 miles per hour (mph).
  Planned improvements to the Brentwood Boulevard corridor are presented in the BBSP and include extending the four-lane facility, bike lanes and curb, gutter and sidewalk north through the study area to the city limits. Funding for the Brentwood Boulevard widening is identified in the City of Brentwood Capital Improvement Program (2016/17-2020/21).
- Lone Tree Way is an east-west arterial street and provides regional access to the study area. The roadway provides access to SR 4 approximately 2.5 miles to the west and is classified as a Route of Regional Significance. To the east, the roadway terminates just east of Brentwood Boulevard. Immediately west of Brentwood Boulevard, the roadway is a two-lane rural facility with a posted speed limit 35 mph. The BBSP also identifies future improvements to this segment of Lone Tree Way, consisting of widening and construction of medians, curb, gutter and sidewalks.
- Sand Creek Road is a four-lane east west arterial through central Brentwood and currently terminates at SR 4 in the west and Garin Parkway in the east. The roadway is classified as a Route of Regional Significance west of Brentwood Boulevard. The roadway is improved with center medians and curb, gutter and sidewalk and provides bike lanes. The posted speed limit is 35 mph within the study area.

- Grant Street is a two-lane collector road which extends west from Brentwood Boulevard to O'Hara Avenue. The roadway provides bike lanes and has a posted speed limit of 30 mph.
- Sunset Road is a two-lane collector road which extends east from Brentwood Boulevard. The roadway is an improved collector facility with a 30 mph speed limit east to Garin Parkway. Beyond Garin Parkway, the roadway transitions to a rural facility and extends for approximately 2.5 miles to the Byron Highway.
- McHenry Way is a local street which extends for approximately 300 feet and connects Sunset Road to Homecoming Way. The roadway is currently designated one-way for southbound travel. Widening of the roadway to provide two-way traffic between Sunset Road and Homecoming Way is proposed in conjunction with development of the proposed project.
- Homecoming Way is a local street which extends east from Brentwood Boulevard and provides access to existing residential development to the northeast of the project site. The roadway is improved with curb, gutter and sidewalk through this residential area. There are no sidewalk improvements on either side of the street adjacent to the project site. Existing center median improvements on Brentwood Boulevard start at the Homecoming Way intersection and provide a southbound left turn lane into Homecoming Way from southbound Brentwood Boulevard.

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 18 and further discussed below.

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. At side street stop-sign-controlled intersections, the LOS is presented for turning movements which must yield the right of way.

TABLE 18: 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.

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 six study area intersections were evaluated:

1. Brentwood Boulevard / Lone Tree Way;
2. Brentwood Boulevard / Homecoming Way;
3. Brentwood Boulevard / Sunset Road / Grant Street;
4. Sunset Road / McHenry Way;
5. Brentwood Boulevard / Applewood Common; and
6. Brentwood Boulevard / Sand Creek Road.

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:

- *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.

Existing Traffic Conditions and LOS

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

Existing Traffic Volumes

Traffic volume data was collected for the TIS at the six study intersections during November 2016. Data was collected in 15-minute increments from 7:00 – 9:00 AM and 4:00 – 6:00 PM. The contiguous one-hour periods with the highest volumes within the two-hour data collection period were used in this traffic impact study as the AM and PM peak hour.

Existing LOS at Study Intersections

Table 19 presents a summary of existing peak hour LOS at the six study intersection locations. LOS calculations are provided in Appendix G. As shown in Table 19, all of the signalized study intersections currently operate satisfactorily within established operating LOS standards. LOS A to C delays are experienced during the AM and PM peak hours.

The Homecoming Way approach to Brentwood Boulevard experiences unsignalized LOS F delays during the PM peak hour. Southbound left turns from Brentwood Boulevard onto Homecoming Way operate satisfactorily. The westbound approach incurs delay due to the quantity of traffic on Brentwood Boulevard and the limited opportunities to turn left from Homecoming Way. Delay is indicative of LOS F; however, existing traffic is very minor at this approach. Peak hour volumes do not meet California Manual on Uniform Traffic Control Devices (CA MUTCD) warrants for

traffic signal installation and overall delays at the intersection are indicative of LOS A. Based upon this, existing intersection operations are within City standards as defined by General Plan Policy CIR 1-5.

TABLE 19: EXISTING CONDITION INTERSECTION LOS

Intersection	*Control*	*Existing*			
		LOS	*Delay*	*LOS*	*Delay*
1. Brentwood Blvd. / Lone Tree Way	Signal	C	21.1	C	22.1
2. Brentwood Blvd. / Homecoming Way SB Left Turn WB Left Turn	WB Stop	 A D	 9.6 30.9	 B F	 11.1 53.9
3. Brentwood Blvd. / Lone Tree Way	Signal	C	34.1	C	29.1
4. Sunset Rd. / McHenry Way SB Approach	SB Stop	 B	 14.5	 B	 13.5
5. Brentwood Blvd. / Applewood Comm.	Signal	A	6.4	A	5.8
6. Brentwood Blvd. / Sand Creek Rd.	Signal	C	23.1	C	27.3

NOTES: WB = WESTBOUND; SB = SOUTHBOUND. DELAY IS SHOWN IN SECONDS PER VEHICLE.
SOURCE: KDANDERSON & ASSOCIATES, 2017.

EPAP Conditions and LOS

The following section describes operating conditions under a near-term background scenario. The EPAP background condition is composed of existing traffic conditions and projected changes in traffic conditions associated with potential development of previously approved or pending projects in the vicinity of the proposed project site.

Background Traffic Volume Forecasts

Development of approved and pending projects would generate new vehicle trips and potentially affect traffic operations at the study intersections. Traffic volumes for the base EPAP condition were calculated by adding trips associated with approved and pending projects to existing traffic volumes. The City of Brentwood Project Status Reports for residential and commercial projects has been used to identify projects considered in the TIS. Identified projects include the following:

- Tentative Subdivision Map 9155 - 33 dwelling units on the west side of Brentwood Boulevard at Havenwood Court;
- Tentative Subdivision Map 9393 - 50 dwelling units on the west side of Brentwood Boulevard at Applewood Court;
- Tentative Subdivision Map 9356, Sciortino Ranch - 326 dwelling units on the east side of Brentwood Boulevard at Sand Creek Road; and
- Tentative Subdivision Map 9152 - 126,000 sf retail on the east side of Brentwood Boulevard at Sand Creek Road.

The quantity of additional traffic on a particular section of the street network associated with the approved projects is dependent upon two factors:

- Trip Generation - the number of new trips generated by each project; and

- Trip Distribution and Assignment - the specific routes that the new traffic will likely take.

Trip Generation

The number of vehicle trips that are expected to be generated by development of approved projects has been estimated using published trip generation rates and review of available traffic studies prepared for the projects. Data compiled by the ITE and presented in the publication Trip Generation, 9th Edition, is the source of trip generation rates used in the EPAP analysis.

Trip Distribution

The geographic distribution of vehicle trips associated with approved and pending projects is based on existing traffic patterns in the area, access to the individual sites, and estimates identified in available traffic studies for the projects.

Background Roadway Improvements

The analysis of EPAP conditions assumes no additional roadway network improvements within the study area will be provided by approved and pending projects.

EPAP No Project LOS at Study Intersections

Table 20 displays the AM and PM peak hour LOS at each study intersection under EPAP No Project conditions. Although traffic volumes under EPAP No Project conditions would increase over current conditions, all study intersections would continue to operate at acceptable LOS D or better with the exception of the Homecoming Way approach to Brentwood Blvd as discussed for Existing conditions.

TABLE 20: EPAP NO PROJECT CONDITION INTERSECTION LOS

Intersection	Control	EPAP			
		AM Peak Hour		PM Peak Hour	
		LOS	Delay	LOS	Delay
1. Brentwood Blvd. / Lone Tree Way	Signal	C	24.3	C	25.5
2. Brentwood Blvd. / Homecoming Way SB Left Turn WB Left Turn	WB Stop	 B F	 10.7 66.6	 C F	 15.9 296
3. Brentwood Blvd. / Lone Tree Way	Signal	D	39.3	D	37.5
4. Sunset Rd. / McHenry Way SB Approach	SB Stop	 B	 14.5	 B	 13.5
5. Brentwood Blvd. / Applewood Comm.	Signal	A	7.5	A	6.5
6. Brentwood Blvd. / Sand Creek Rd.	Signal	C	30.3	D	44.3

NOTES: WB = WESTBOUND; SB = SOUTHBOUND.

SOURCE: KDANDERSON & ASSOCIATES, 2017.

Project Trip Generation

The number of vehicle trips that are expected to be generated by development of the proposed project has been estimated using published trip generation data. The Institute of Transportation Engineers (ITE) publication *Trip Generation Manual, 9th Edition*, has been used. ITE Trip Generation Manual estimates for land use categories 1) Fast-food Restaurant with Drive-thru (ITE Code 934) and 2) Gas Station with Convenience Store and Car Wash (ITE Code 946) have been applied to the individual uses proposed for the project site.

Trips generated by commercial projects fit into two categories. Some trips will be made by patrons who would not otherwise be on the local street system and who go out of their way to reach the site. These are "new" trips. Other trips will be made by patrons who are already in the roadway network, and are therefore not adding "new" trips to the overall system.

"Pass-by" trips would be made by motorists who are already driving by the site as part of another trip. Peak hour pass-by trips are common on commuter routes as motorists stop on their way home. They are made by patrons who are already driving by the site and simply interrupt a trip already being made to other destinations. An example of this type of trip would be stopping to refuel a vehicle.

ITE research has suggested typical "pass-by" percentages for various land uses where appreciable background traffic occurs, and this data is presented in the ITE *Trip Generation Handbook* publication. The share of project trips falling into each category varies over the day. Table 21 summarizes peak hour pass-by percentages used for this analysis for the gas station and fast food restaurant uses.

The trip generation rates and the resulting trip generation estimates are presented in Tables 21 and 22, respectively. As shown, development of the project site is projected to generate a total of 395 AM and 380 PM peak hour trips. Of these totals, pass-by trips are projected to account for 221 AM peak hour and 204 PM peak hour trips. Resulting new trips generated by the site are estimated at 174 AM peak hour trips and 176 PM peak hour trips.

TABLE 21: PROJECT TRIP GENERATION RATES

Land Use	*ITE Code*	*AM Peak Hour*		*PM Peak Hour*		*Pass-by %*	
		Rate	*In/Out*	*Rate*	*In/Out*	*AM*	*PM*
Fast-food with drive-thru	934	45.42/KSF	51% / 49%	32.65	52% / 48%	49%	50%
Gas station with convenience store and car wash	946	11.84/fuel position	51% / 49%	13.86	51% / 49%	62%	56%

NOTE: KSF = THOUSAND SQUARE FEET

SOURCE: KDANDERSON & ASSOCIATES, 2017.

TABLE 22: PROJECT TRIP GENERATION

Land Use	Quantity	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Fast-food with drive-thru	4 KSF	93	89	182	67	63	130
Pass-by Trips		(45)	(44)	(89)	(33)	(31)	(64)
Net New Trips		48	45	93	34	32	66
Gas station with convenience store and car wash	18 fuel positions	108	105	213	128	122	250
Pass-by Trips		(67)	(65)	(132)	(72)	(68)	(14)
Net New Trips		41	40	81	56	54	110
Total Net New Trips		*89*	*85*	*174*	*90*	*86*	*176*
Total Pass-by Trips		*(112)*	*(109)*	*(221)*	*(105)*	*(99)*	*(204)*
Total All Trips		*201*	*194*	*395*	*195*	*185*	*380*

NOTE: KSF = THOUSAND SQUARE FEET

SOURCE: KDANDERSON & ASSOCIATES, 2017.

Project Trip Distribution and Assignment

The geographic distribution of vehicle trips generated by the proposed development has been estimated based on existing traffic patterns in the area and estimated origins and destinations of patrons to the site considering surrounding development densities in this area of Brentwood. Table 23 presents the estimated trip distribution percentages for new trips for the proposed project used for the traffic analysis. Pass-by trips have been assigned in proportion to existing peak hour directional volumes on the adjacent street system.

TABLE 23: PROJECT TRIP DISTRIBUTION ESTIMATES (NEW TRIPS)

Direction	Percent Distribution
West via Sand Creek Rd.	12%
via Grant St.	20%
via Lone Tree Way	5%
East via Sand Creek Rd.	10%
via Sunset Rd.	20%
via Applewood Common	5%
South on Brentwood Blvd.	13%
North on Brentwood Blvd.	10%
To local streets north of project site	5%
Total	100%

SOURCE: KDANDERSON & ASSOCIATES, 2017.

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 trips accompanying development of the proposed project were superimposed onto Existing background traffic volumes. Table 24 displays the peak hour LOS at each study intersection under the Existing Plus Project condition. As shown, the addition of project-generated traffic is projected to result in relatively minor increases in overall delay at each of the signalized study intersections. Satisfactory LOS "D" or better operations are projected to continue at each of the signalized study intersections.

Satisfactory LOS B to C operations are projected at the McHenry Way approach to Sunset Road with development of the project. LOS F is projected to continue at the Homecoming Way approach to Brentwood Boulevard; however, the project is expected to add only a minor amount of left turn traffic to this approach. As occurs today under the Existing condition, project traffic would be expected to access southbound Brentwood Boulevard via McHenry Way and then turn left at the Sunset Road signalized intersection rather than wait and attempt left turns from Homecoming Way. Resulting traffic volumes at the Brentwood Boulevard / Homecoming Way intersection are projected to remain well below CA MUTCD traffic signal thresholds and overall intersection delays will remain within City standards.

TABLE 24: EXISTING PLUS PROJECT CONDITION INTERSECTION LOS

Intersection	*Control*	*Existing*				*Existing + Project*			
		AM Peak Hour		*PM Peak Hour*		*AM Peak Hour*		*PM Peak Hour*	
		LOS	*Delay*	*LOS*	*Delay*	*LOS*	*Delay*	*LOS*	*Delay*
1. Brentwood Blvd. / Lone Tree Way	Signal	C	21.1	C	22.1	C	21.2	C	22.1
2. Brentwood Blvd. / Homecoming Way SB Left Turn WB Left Turn	WB Stop	 A D	 9.6 30.9	 B F	 11.1 53.9	 B F	 10.4 69.9	 B F	 12.2 99.1
3. Brentwood Blvd. / Lone Tree Way	Signal	C	34.1	C	29.1	D	38.1	C	32.9
4. Sunset Rd. / McHenry Way SB Approach	SB Stop	 B	 14.5	 B	 13.5	 C	 16.85	 C	 15.5
5. Brentwood Blvd. / Applewood Comm.	Signal	A	6.4	A	5.8	A	6.6	A	5.8
6. Brentwood Blvd. / Sand Creek Rd.	Signal	C	23.1	C	27.3	C	23.8	C	28.1

NOTES: WB = WESTBOUND; SB = SOUTHBOUND.

SOURCE: KDANDERSON & ASSOCIATES, 2017.

Existing Plus Project condition intersection impacts are considered less than significant based upon identified operating standards and levels of significance.

Driveways

Satisfactory LOS are projected at each of the proposed driveways under Existing Plus Project conditions. Delays indicative of LOS B and C operations are projected at the Brentwood Boulevard driveway in the AM and PM peak hour, respectively. LOS A operation is projected at the McHenry Avenue access during each of the peak traffic hours.

Vehicle Queues

Projected queue lengths have been evaluated at key locations on and adjacent to the project site:

- Brentwood Boulevard driveway - The vehicle queue for right turn movements onto Brentwood Boulevard is not projected to exceed two vehicles. This can be accommodated within the driveway throat distance without impacting on-site circulation.

- McHenry Way at Sunset Road - The vehicle queue in each of the southbound left and right turn lanes is not projected to exceed two vehicles. This can be accommodated in the proposed lane and pocket length and will not affect vehicle movements into and out of the project driveway immediately to the north.
- Westbound Sunset Road at Brentwood Boulevard - The project includes lengthening the right turn lane to 210 feet adjacent to the project site. Projected 95th percentile queue lengths are longest in the PM peak hour, consisting of a 200-foot long queue in the right turn lane and a 325-foot queue in the shared left + thru lane. The proposed right turn lane will accommodate the projected queue; however, the left + thru lane queue will extend beyond the right turn pocket during the highest volume peak hour signal cycles.

EPAP Plus Project Condition

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

EPAP Plus Project LOS at Study Intersections

As for the Existing condition, trips accompanying development of the proposed project were superimposed onto the EPAP background traffic volume. Table 25 displays the peak hour LOS at each study intersection under the EPAP Plus Project condition. As shown, satisfactory LOS "D" or better operations are projected to continue at each of the signalized study intersections under this scenario.

TABLE 25: EPAP PLUS PROJECT CONDITION INTERSECTION LOS

Intersection	Control	EPAP				EPAP + Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
2. Brentwood Blvd. / Lone Tree Way	Signal	C	24.3	C	25.5	C	24.4	C	25.7
2. Brentwood Blvd. / Homecoming Way SB Left Turn WB Left Turn	WB Stop	 B F	 10.7 66.6	 C F	 15.9 296	 B F	 12.0 318	 C F	 19.4 > 500
3. Brentwood Blvd. / Lone Tree Way	Signal	D	39.3	D	37.5	D	48.9	D	44.9
4. Sunset Rd. / McHenry Way SB Approach	SB Stop	 B	 14.5	 B	 13.5	 C	 16.8	 C	 15.5
5. Brentwood Blvd. / Applewood Comm.	Signal	A	7.5	A	6.5	A	7.7	A	6.7
6. Brentwood Blvd. / Sand Creek Rd.	Signal	C	30.3	D	44.3	C	31.3	D	47.1

NOTES: WB = WESTBOUND; SB = SOUTHBOUND.

SOURCE: KDANDERSON & ASSOCIATES, 2017.

Satisfactory LOS B to C operations are also projected at the McHenry Way approach to Sunset Road with development of the project. LOS F is projected to continue at the Homecoming Way approach to Brentwood Boulevard. However, as previously identified, the project is expected to add only a minor amount of left turn traffic to this approach. Resulting traffic volumes at the Brentwood Boulevard / Homecoming Way intersection are projected to remain well below CA

MUTCD traffic signal thresholds and overall intersection delays will remain within City standards.

Intersection impacts under EPAP Plus Project conditions are considered less than significant based upon identified operating standards and levels of significance.

Driveways

Satisfactory LOS are projected at each of the proposed driveways. LOS C and D operations are projected at the Brentwood Boulevard driveway in the AM and PM peak hour, respectively. LOS A operation is projected at the McHenry Avenue access during each of the peak traffic hours.

Long-Term Cumulative Conditions

This section describes operating conditions under a long-term background scenario that is representative of Year 2040 conditions. The Long-Term Cumulative condition reflects future development of land uses and implementation of transportation improvement projects in the City of Brentwood as well as surrounding City and County jurisdictions, as forecast by the CCTA travel demand forecasting model.

The Cumulative No Project scenario establishes a baseline condition for identifying any long-term project-related traffic impacts. The Cumulative No Project condition assumes that the proposed project is not constructed.

Traffic model base calibration year and future year forecasts were obtained from CCTA. Peak hour traffic model forecasts were compared to the base model year forecasts and local growth rates were calculated for individual roadway segments. These growth rates were then applied to the existing turning movement counts at each study intersection, and the results were balanced using the techniques contained in *Transportation Research Board's (TRB's) NCHRP report 255, Highway Data for Urbanized Area Project Planning and Design*. This methodology is consistent with procedures outlined in the CCTA Technical Procedures.

As with previously presented analysis scenarios, project-generated traffic was then added to the Long-Term Cumulative base to develop Cumulative Plus Project traffic projections.

Future Roadway Improvements

Roadway improvements associated with the Long-Term Cumulative condition have been identified based upon information contained in the BBSP, the City General Plan, and the General Plan Draft EIR. Within the study area, these consist of the following:

- Widening of Brentwood Boulevard to four lanes through the study area.
- Widening of Lone Tree Way to four lanes through the Brentwood Boulevard intersection with protected left turn lane phasing on Lone Tree Way.
- Widening for dual northbound left turn lanes on Brentwood Boulevard at Lone Tree Way.

- Widening of Sunset Road to provide one left turn lane, one through lane, and one right turn lane at the westbound approach to Brentwood Boulevard together with protected left turn phasing on Sunset Road and Grant Street.

Cumulative No Project Intersection LOS

Table 26 displays AM and PM peak hour LOS at each study intersection under Cumulative No Project conditions. As shown, although traffic volumes on Brentwood Boulevard are projected to further increase over current conditions, all study intersections would continue to operate at acceptable LOS D or better with the exception of the Homecoming Way approach to Brentwood Boulevard as discussed for Existing conditions.

TABLE 26: CUMULATIVE PLUS PROJECT CONDITION INTERSECTION LOS

Intersection	Control	Cumulative				Cumulative + Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1. Brentwood Blvd. / Lone Tree Way	Signal	D	44.0	D	37.7	D	45.1	D	28.6
2. Brentwood Blvd. / Homecoming Way SB Left Turn WB Left Turn	WB Stop	 B F	 11.2 66.5	 C F	 24.9 > 500	 B F	 12.0 265	 D F	 34.9 > 500
3. Brentwood Blvd. / Lone Tree Way	Signal	D	42.0	D	42.1	D	48.7	D	51.0
4. Sunset Rd. / McHenry Way SB Approach	SB Stop	 C	 18.6	 C	 17.7	 C	 23.7	 C	 22.3
5. Brentwood Blvd. / Applewood Comm.	Signal	A	9.0	A	7.6	A	9.3	A	8.0
6. Brentwood Blvd. / Sand Creek Rd.	Signal	C	33.6	D	38.3	D	35.6	D	40.5

NOTES: WB = WESTBOUND; SB = SOUTHBOUND.

SOURCE: KDANDERSON & ASSOCIATES, 2017.

Cumulative Plus Project Intersection LOS

As also shown in Table 26, the addition of project-generated traffic to cumulative background conditions is also projected to result in satisfactory LOS D or better operations at each of the signalized study intersections.

Satisfactory LOS C operations are also projected at the McHenry Way approach to Sunset Road with development of the project. LOS F is projected to continue at the Homecoming Way approach to Brentwood Boulevard. However, as previously identified, the project is expected to add only a minor amount of left turn traffic to this approach. Resulting traffic volumes at the Brentwood Boulevard / Homecoming Way intersection are projected to remain well below CA MUTCD traffic signal thresholds and overall intersection delays will remain within City standards.

It is also possible that left turn access out of Homecoming Way may be prohibited in the future with design of the Brentwood Boulevard widening project. Should this occur, circulation from the

project site would not be measurably effected as very few project trips have been projected to turn left out of Homecoming Way.

Project impacts under Cumulative conditions are considered less than significant based upon identified operating standards and thresholds of significance.

The Brentwood Boulevard / Sunset Road / Grant Street intersection is projected to operate satisfactorily under Cumulative conditions with identified long-term improvement assumptions. These consist of separate left lane, through lane and right turn lanes at the westbound Sunset Road approach in conjunction with widening Brentwood Boulevard to four lanes. These improvements are as identified in Action CIR 1b:1.d of the General Plan Circulation Element to support build out to city limits. Right-of-way needs along the project frontage should accommodate these future improvements.

It is also noted that Action CIR 1b:2.c of the General Plan Circulation Element identifies additional intersection improvements to support "Buildout to the Planning Area". These consist of dual left turn lanes on southbound Brentwood Boulevard and westbound Sunset Road as well as a second eastbound lane on Sunset Road to receive the dual left turn movement.

Driveways

Satisfactory LOS are projected at each of the proposed driveways under Cumulative conditions. LOS B and C operations are projected at the Brentwood Boulevard driveway in the AM and PM peak hour, respectively. LOS A operation is projected at the McHenry Avenue access during each of the peak traffic hours.

Conclusion

In conclusion, project impacts under Existing Plus Project, EPAP Plus Project, and Cumulative Plus Project conditions are considered less than significant based upon identified operating standards and thresholds of significance.

The proposed project is consistent with future development levels planned in Brentwood, which have been included in the regional Traffic Models developed by the CCTA and Contra Costa County. The Applicant/Developer of this project would be required to contribute to the construction of planned regional and local facilities. The Applicant/Developer will also be required to pay applicable thoroughfare facility fees (plus any annual increase) in effect at the time of building permit issuance and shall participate in the City's Capital Improvement Financing Plan to finance necessary roadway infrastructure to the satisfaction of the Public Works Director/City Engineer and Community Development Director. Overall, the project would cause a **less than significant** impact to the City's existing street system.

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 2.64 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.** The proposed project includes construction of a central drive aisle through the site with driveway connections to Brentwood Boulevard and to McHenry Way. Full access is proposed at the McHenry Way driveway, with the Brentwood Boulevard access would be limited to right turns to and from northbound Brentwood Boulevard. McHenry Way will be widened to accommodate two-way traffic and two approach lanes will be provided to Sunset Road. Left turns to McHenry Way from eastbound Sunset Road will be prohibited via construction of a "pork chop" median on McHenry Way at the intersection. Frontage improvements on Sunset Road will extend the right turn lane length from the existing 90 feet to 210 feet. As part of the project's TIS, on-site circulation was evaluated.

McHenry Way Access

The relatively low level of background traffic on McHenry Way together with proposed roadway improvements is projected to result in satisfactory driveway operations at this access location. Satisfactory sight distance can be provided to the north and to the south to the Homecoming Way and Sunset Road intersections, respectively.

Brentwood Boulevard Access

A right turn driveway is proposed on Brentwood Boulevard approximately 170-feet north of Sunset Road. The preliminary site plan indicates that the Brentwood Boulevard access is intended to be limited to right turns and the consultant concurs with this given the proximity to the Sunset Road / Grant Street signalized intersection. However, this segment of Brentwood Boulevard currently does not have a raised median to physically prohibit left turns. The planned Brentwood Boulevard widening project will include construction of a raised median to prohibit left turns in the future. In the interim, it is recommended that left turns be prohibited via either a pork-chop island in the driveway or temporary raised median on Brentwood Boulevard.

Brentwood Boulevard is relatively flat and straight through this area and satisfactory sight distance is available to the south from the proposed driveway location. The posted speed limit on Brentwood Boulevard is 40 mph. Stopping Sight Distance and Corner Sight Distances of 300-feet and 440-feet are required for this speed based upon information presented in Tables 201.1 and 405.1A of the Highway Design Manual. These distances are available to the south on Brentwood Boulevard from the driveway location for a vehicle to safely exit the driveway onto northbound Brentwood Boulevard. Other considerations include available sight distance to the south to see vehicles making a right turn from Sunset Road. Assuming a right turning vehicle design speed of 15 mph, 160-feet distance is needed for corner sight distance to exit the driveway in advance of the right turning vehicle. This distance is also available from the proposed driveway location.

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 left turns onto Brentwood Boulevard are prohibited prior to construction of the Brentwood Boulevard widening project. With implementation of the following mitigation, this impact would be **less than significant**.

Mitigation Measure(s)

Mitigation Measure TRANS-1*: Prior to approval of improvement plans, the improvement plans shall indicate that left-turns onto Brentwood Boulevard would be prohibited via either a pork-chop island in the driveway or temporary raised median on Brentwood Boulevard. The improvement plans shall be submitted for review and approval by the City Engineer. Should the planned Brentwood Boulevard widening project and associated left-turn prohibition improvements be complete prior to approval of improvement plans, this measure shall not apply.*

Response f): Less than Significant. 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 traffic analysis, 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

Tri Delta Transit provides transit service within the City of Brentwood. All transit buses are equipped with bicycle racks to serve bicyclists. Three fixed routes currently serve Brentwood Boulevard. Route 391 is a non-express route which serves the area approximately every 20 minutes. Existing Brentwood Boulevard stops are located at Sand Creek Road, Applewood Common, Havenwood Avenue, Grant Street/Sunset Road and Lone Tree Way.

Transit service is currently provided to the site via existing routes on Brentwood Boulevard. Employees of the project would be expected to potentially make use of the transit service; however, the number of riders would be relatively minor and spread over a number of work shifts typical of convenience store and food service employment. It is estimated that additional transit riders could be accommodated by the existing service, spread out over the various routes and frequency of service. Thus, the project's impact on transit facilities is not considered significant.

Pedestrian

Sidewalk facilities are provided along Brentwood Boulevard south of Marsh Creek. To the north, sidewalk facilities are currently not continuous. No sidewalks exist along Brentwood Boulevard for the ¼-mile segment from Sunset Road to Hansen Lane. North of Hansen Lane, sidewalks are provided on the east side of the street north to Lone Tree Way. Crosswalks with push-button pedestrian activation are provided at each of the four signalized study intersections.

Frontage improvements proposed as part of the project include sidewalk facilities along Sunset Road and McHenry Way. No frontage improvements are currently proposed on Homecoming Way prior to development of the northerly half of the project site.

Residents in the area surrounding the site may walk to the convenience store or to the fast-food restaurant. As part of its frontage improvements, the project will construct sidewalks along McHenry Way and Sunset Road. This will provide a continuous sidewalk connection for residents to the northeast on Homecoming Way and the Homecoming Way Park site. Sidewalk facilities along the Sunset Road frontage provide a connection to the signalized pedestrian crossings at the Sunset Road / Brentwood Boulevard intersection. Controlled pedestrian crossings currently exist on the east, west, and south legs of the intersection.

Construction of sidewalk facilities along the Brentwood Boulevard frontage will be deferred until such time as the Brentwood Boulevard Widening North project proceeds. This is not estimated to significantly effect pedestrian circulation as no sidewalk facilities currently exist to the north of the project site.

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

Class II bike lanes on Brentwood Boulevard currently end at Havenwood Avenue to the south of the project site. North of Havenwood Avenue, striped shoulders of four- to six-feet in width are provided north to Sunset Road. North of Sunset Road, the east side of Brentwood Boulevard provides a four-foot striped shoulder to facilitate bicycle travel, but the west side shoulder is only one- to two-feet in width.

A Class I trail meanders along the south side of Grant Street and Sunset Road and also extends to the northeast along the Marsh Creek Channel alignment.

The proposed development will not alter existing bicycle facilities in the area. The Brentwood Boulevard Widening North project will include bike lanes on Brentwood Boulevard; however, only a paved shoulder is currently provided along the project frontage today. This will remain in place until widening of Brentwood Boulevard. Thus, the project's impact on bicycle circulation is not considered significant.

Conclusion

Overall, project implementation would not result in significant impacts to transit, pedestrian, or bicycle facilities in the area. Therefore, the project would have a **less than significant** impact on public transit, pedestrian, or bicycle facilities.

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-2 and CUL-3 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-2 and CUL-3.

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.

Buildout of the proposed project would result in the construction of an ARCO AM/PM gas station with 18 fuel stations, and an associated single-story, 3,195-sf convenience store with a 1,021-sf drive-through car wash on the southern 1.11-acre portion of the project site. The project also includes development assumptions for the northern 0.83-acre portion of the project site consisting of a 4,000-sf fast-food restaurant facility with drive-through. 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 gas station and convenience store would generate approximately 1,981.4 gallons per day, and the assumed fast-food restaurant would generate an additional approximately 1,481.6 gallons per days. Therefore, the total wastewater flow from the project site would be about 3,463 gallons per day (0.0035 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 McHenry Way and Homecoming 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, a Stormwater Control Plan was completed for

the project in January 2017. The proposed site layout has been optimized to comply with City of Brentwood code requirements for common open-space, landscaping coverage, parking requirements, and required right-of-way dedications. Project runoff from 20 of the 23 drainage management areas would be self-treated on-site via landscaping, permeable pavers, and gravel. Stormwater from the remaining three drainage management areas would drain to IMP 1. IMP 1 will consist of a vault based, high-flowrate media biofilter. The use of an LID facility is not feasible due to the reduction in overall site area (required right-of-dedications) and slope of the site.

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 an 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 McHenry Way and Homecoming 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[14]. 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.

[14] 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 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 and surface water quality impacts, and noise. 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 employees and 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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