

The Vineyards at Marsh Creek and Annexation Sites

SCH # 2003062019

Prepared for:



Prepared by:



November 2003



DRAFT EIR & APPENDICES

ENVIRONMENTAL IMPACT REPORT

Draft

The Vineyards at
Marsh Creek
and Annexation Sites **EIR**

SCH # 2003062019

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S.0 EXECUTIVE SUMMARY

S.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The California Environmental Quality Act (“CEQA”) (Public Resources Code § 21000-21178) requires all state and local government agencies to consider the environmental consequences of proposed projects over which they have discretionary authority.

The purpose of this Environmental Impact Report (“EIR”) is to assess the environmental impacts of the proposed Vineyards at Marsh Creek project (“Vineyards Project”) and annexation of two adjacent properties (Annexation Sites) pursuant to CEQA, as amended, and the State CEQA Guidelines (Title 14, California Code of Regulations, § 15000 *et. seq.*), as amended. This EIR is an informational document that describes the significant environmental effects of the project, identifies possible ways to avoid or minimize the significant effects, and discusses reasonable alternatives to the project to avoid, reduce or minimize environmental impacts. The City of Brentwood will consider the assessment of the project’s environmental effects in this EIR in making an informed decision regarding the approval, conditional approval or denial of the project. It is not the purpose of an EIR to recommend either approval or denial of a project.

S.2 PROJECT DESCRIPTION

The project proposed by the project applicant (i.e., Vineyards at Marsh Creek LLC) is the *Vineyards at Marsh Creek* (“Vineyards”) project, described in more complete detail in Section 2.4 (and Table 2-1) of this EIR. Entitlements sought by the applicant for the Vineyards project include: annexation into the City of Brentwood; General Plan amendment (GPA); rezoning and zoning consistent with the City of Brentwood zoning ordinance; Design Review; subdivision map(s) to create multiple parcels; and potentially a Development Agreement between the applicant and the City of Brentwood.

Project approvals would include allocation of residential units under the Regional Growth Management Program (RGMP) for 150 executive lots, 1,100 Active Adult lots, 200 multi-family units, and 150 senior apartments. In addition, approvals would be required for development of 200,000 s.f. of institutional levels of Congregate Care. The project also proposes development of 75,000 s.f. commercial/retail/civic uses, 30,000 s.f. of office, 115,000 s.f. hotel/conference center, and 170,000 s.f. of winery with an outdoor 1,000-seat amphitheater. Project annexation would include annexation of the existing Pacific Gas & Electric (PG&E) facility (Brentwood Terminal). No changes are proposed to the Brentwood Terminal.

The City of Brentwood also seeks to annex two additional properties into the municipal City boundaries, and to amend the Brentwood General Plan to allow for their potential future use. These two sites (herein referred to as the Annexation Sites) include the John Marsh Home (currently part of the California State Park system) and a potential Contra Costa Community College site.

S.3 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Table S.1, at the end of this section, contains a summary of the impacts and mitigation measures associated with the proposed Vineyards project and Annexation Sites. The level of significance of environmental impact before and after the incorporation of migration measures is also included. This table also documents cumulative impacts, where applicable, and growth-including effects.

S.4 SIGNIFICANT UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

Section 3.0 of this EIR provides an evaluation of the potential environmental impacts of the proposed project and recommends mitigation measures to reduce impacts to a less-than-significant level, where feasible. Mitigation measures would reduce many significant effects to a less than significant level. However, significant unavoidable conversion of Prime Farmland and Farmland of Statewide Importance remain as a potential effect of the proposed project. As described in Section 4.0 of this EIR, significant and unavoidable impacts would occur with regard to air quality. Prior to approval of any project entitlements, the lead agency would need to adopt a Statement of Overriding Considerations.

S.5 MITIGATION MONITORING

Public agencies are required to adopt a monitoring or reporting programs for the purpose of ensuring the implementation of those mitigation measures adopted or made as a condition of project approval in order to reduce or avoid significant environmental effects identified in the environmental impact report. A mitigation monitoring program, incorporating the mitigation measures set forth in this document, will be adopted concurrent with adoption of the findings and prior to approval of the proposed project.

S.6 EVALUATION OF ALTERNATIVES

Section 6.0 of this EIR describes and evaluates alternatives to the proposed project in accordance with the CEQA Guidelines. The alternatives considered in this EIR include the following:

- ❖ Alternative 1 - No Project, No Development Alternative
- ❖ Alternative 2 – No Project, Development Under Existing General Plan
- ❖ Alternative 3 – Alternative Residential Layout
- ❖ Alternative 4 – 60% Reduction of Vineyards Developable Property
- ❖ Alternative 5 – 80% Reduction of Near-Term Vineyards Project

Based on the analysis in Section 6.0, the No Project, No Development Alternative is considered the environmentally superior alternative. However, as directed by CEQA, another alternative is to be selected as the environment superior alternative when No Project alternative is initially selected. Consequently, based on analysis, the proposed project would be the environmentally superior alternative.

S.7 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

The City of Brentwood submitted the Notice of Preparation (“NOP”) of this EIR to the California Office of Planning and Research, public agencies and the public on June 4, 2003. The purpose of the NOP was to solicit comments from public agencies on issues germane to the agency that should be considered in the draft EIR. The public review period for the NOP ended 30 days after public distribution of the NOP. All of the issues raised in the NOP comment letters (Appendix A) have been addressed in the draft EIR. No apparent substantial areas of controversy not already being addressed in this EIR have been identified in these NOP comment letters.

S.8 AREAS OF CONCERN IDENTIFIED DURING SCOPING OF THE EIR

Key Areas of concern identified during scoping include:

- ❖ Visual Resources
- ❖ Biological Resources
- ❖ Transportation and Circulation
- ❖ Hazards

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**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
3.1 LAND USE AND PLANNING		
<p><u>IMPACT 3.1-A. Physically Divide An Established Community - Vineyards Project and Annexation Sites:</u> The proposed Vineyards project and Annexation Sites would occur on the southwestern side of the City of Brentwood on sites that are currently undeveloped planned for urban uses through the General Plan and the direction given for Special Planning Area J. No physical division of an established community would occur. (No Impact).</p>	<p><u>Mitigation 3.1-A. Physically Divide An Established Community – Vineyards Project and Annexation Sites:</u> The proposed Vineyards project and Annexation Sites would not result in a physical division of an established community and, therefore, no mitigation is required. (No Impact).</p>	<p>No Impact</p>
<p><u>IMPACT 3.1-B. Consistency with Contra Costa County General Plan Policies – Vineyards Project and Annexation Sites:</u> The proposed Vineyards project and Annexation Sites are located within the City of Brentwood’s Sphere of Influence and would be annexed into the City limits. The annexation of the Vineyards project site and the Annexation Sites would be consistent with the relevant goals and policies of the Contra Costa County General Plan, 1995-2010. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.1-B. Consistency With Contra Costa County General Plan Policies – Vineyards Project and Annexation Sites:</u> No mitigation required. (Less Than Significant Impact).</p>	<p>Less than Significant Impact</p>
<p><u>IMPACT 3.1-C. Consistency with City of Brentwood Land Use Policies - Vineyards Project and Annexation Sites:</u> The proposed Vineyards project would require a General Plan Amendment. The amendment and the construction of the proposed Vineyards project would not conflict with the overall goals and policies of the Brentwood General Plan. In addition, the proposed land uses would generally be compatible with surrounding land uses. The proposed</p>	<p><u>Mitigation 3.1-C. Consistency with City of Brentwood Land Use Policies – Vineyards Project and Annexation Sites:</u> No mitigation required. (Less Than Significant Impact).</p>	<p>Less than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>General Plan Amendment would result in consistency with the General Plan and the Special Planning Area with regard to the Vineyards project. The Annexation Sites are also proposed for a General Plan Amendment. The amendment and future development of the sites as currently anticipated would not conflict with the overall goals of and policies of the Brentwood General Plan. The proposed General Plan Amendment would result in consistency with the General Plan and the Special Planning Area with regard to the Annexation Sites. (Less Than Significant Impact).</p>		
<p><u>IMPACT 3.1-D. Consistency with LAFCO Policies – Vineyards Project and Annexation Sites:</u> The proposed Vineyards project and Annexation Sites would be consistent with LAFCO policies. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.1-D. Consistency with LAFCO Policies – Vineyards Project and Annexation Sites:</u> No mitigation required. (Less Than Significant Impact).</p>	<p>Less than Significant Impact</p>
<p><u>IMPACT 3.1-E. Habitat Conservation Plans - Vineyards Project and Annexation Sites:</u> No habitat conservation plan or natural community conservation plan currently exist for the Vineyards project site or the Annexation Sites. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.1-E. Habitat Conservation Plans - Vineyards Project and Annexation Sites:</u> No habitat conservation plan is currently in place for the Vineyards project site or the Annexation Sites and, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less than Significant Impact</p>
<p>3.2 AGRICULTURAL RESOURCES</p>		
<p><u>IMPACT 3.2-A. Conversion of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to Non-Agricultural Use - Vineyards Project:</u> The Vineyards project could potentially result in the conversion of a very small amount (fewer than 10 acres) of prime farmland and/or</p>	<p><u>Mitigation 3.2-A. Conversion of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to Non-Agricultural Use -Vineyards Project:</u> No significant impact is anticipated, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>farmland of statewide importance. The Vineyards project would also create on the project site approximately 60 new acres of farmland, to be used for vineyards and olive groves. This would more than offset the small amount of farmland that could be converted by the project to non-agricultural uses. (Less Than Significant Impact).</p>		
<p><u>IMPACT 3.2-B. Conversion of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to Non-Agricultural Use - Annexation Sites:</u> The Annexation Sites do not contain lands designated as prime farmlands, farmland of statewide importance, or unique farmland. Therefore, the potential future development of the Annexation Sites would not result in the conversion of any such farmland to non-agricultural uses. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.2-B. Conversion of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to Non-Agricultural Use -Annexation Sites:</u> No significant impact is anticipated; therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.2-C. Conflict with Existing Zoning or Williamson Act Contract - Vineyards Project:</u> The Vineyards project does not conflict with existing zoning or a Williamson Act contract and, a less than significant impact would result. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.2-C. Conflict with Existing Zoning or Williamson Act Contract - Vineyards Project:</u> The Vineyards project site would be annexed into the City of Brentwood, would be zoned with a PD zoning district, and has no Williamson Act contracts associated with it and, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.2-D. Conflict with Existing Zoning or Williamson Act Contract - Annexation Sites:</u> The Annexation Sites would not conflict with existing zoning or a Williamson Act contract and, therefore, a less than significant impact would result. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.2-D. Conflict with Existing Zoning or Williamson Act Contract - Annexation Sites:</u> The Annexation Sites would be annexed into the City of Brentwood, would be zoned with a PD zoning district, and do not have any Williamson Act contracts associated with them and, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.2-E. Other Changes in the Existing Environment Which Could Result in Conversion of Farmland to Non-Agricultural Use - Vineyards Project:</u> The Vineyards project would not include changes to the existing environment that would have the potential to result in the conversion of Farmland, beyond the Vineyards project area as discussed in Impact 3.2-A. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.2-E. Other Changes in the Existing Environment Which Could Result in Conversion of Farmland to Non-Agricultural Use:</u> The Vineyards project would not result in any other changes to the existing environment that could result in conversion of Farmland beyond the loss of farmland soils as discussed in Impact 3.2-A; therefore no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.2-F. Other Changes in the Existing Environment Which Could Result in Conversion of Farmland to Non-Agricultural Use - Annexation Projects:</u> The John Marsh Home site would not include any other changes to the existing environment that would have the potential to result in the conversion of Farmland. Approximately 30-acres of the Community College site is currently being grazed. However, grazing is conducted under agreement with the State Parks and is not a permanent use of the site. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.2-F Other Changes in the Existing Environment Which Could Result in Conversion of Farmland to Non-Agricultural Use - Annexation Projects:</u> The Annexation Sites would not result in changes to the existing environment that could result in conversion of Farmland beyond the Annexation Sites boundaries, therefore no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.2-G. Cumulative Impacts – Conversion of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to Non-Agricultural Use:</u> The Vineyards project and the potential future development of the Annexation Sites would not contribute to potential significant cumulative impacts on agricultural resources. (Less Than Significant Cumulative Impact).</p>	<p><u>Mitigation 3.2-G. Cumulative Impacts – Conversion of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to Non-Agricultural Use:</u> The projects would not contribute to any potential significant cumulative impacts on agricultural resources, therefore, no mitigation is required. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
3.3 POPULATION AND HOUSING		
<p><u>IMPACT 3.3-A. Population Growth – Vineyards Project:</u> The proposed project would directly result in population growth through the construction of new homes. The amount of population growth generated by the project would be substantially less than the amount of growth planned for in the SPA J area by the Brentwood General Plan, and analyzed in the General Plan EIR. The population growth generated by the project would be within the range of growth projected by the City of Brentwood and by the Association of Bay Area Governments. Therefore, impacts related to population growth would be less than significant. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.3-A. Population Growth – Vineyards Project:</u> The proposed Vineyards project would result in a less than significant population growth impact and, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.3-B. Population Growth – Annexation Sites:</u> The proposed Annexation Sites would not substantially increase the population of the City of Brentwood. These properties would not include residential units and would not induce substantial population growth. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.3-B. Population Growth – Annexation Sites:</u> The proposed Annexation Sites would not result in a substantial increase in population and, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.3-C. Displacement of Housing or People – Vineyards Project:</u> The proposed Vineyards project would not displace housing units or people, and would not require the construction of replacement housing. (No Impact).</p>	<p><u>Mitigation 3.3-C. Displacement of Housing or People – Vineyards Project:</u> The proposed project would not displace housing or people and, therefore, no mitigation is required. (No Impact).</p>	<p>No Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.3-D. Displacement of Housing or People – Annexation Sites:</u> The proposed annexation, general plan amendments, and potential future development of Contra Costa Community College District site and John Marsh Home site would not displace housing units or people, and would not require the construction of replacement housing. (No Impact).</p>	<p><u>Mitigation 3.3-D. Displacement of Housing/People – Annexation Sites:</u> The proposed annexation, general plan amendments, and future potential development of the community college site and John Marsh Home would not displace housing or people and no mitigation is required. (No Impact).</p>	<p>No Impact</p>
<p>3.4 TRANSPORTATION / CIRCULATION</p>		
<p><u>IMPACT 3.4-A. Balfour Road/SR4 Bypass/Concord Avenue Near-Term – Vineyards Project:</u> The Balfour Road/SR4 Bypass/Concord Avenue intersection will operate at LOS E (V/C ratio of 0.90) during the morning (AM) peak hour and LOS F (V/C ratio of 1.06) during the evening (PM) peak hour. Prior to the introduction of project traffic, the intersection would operate at LOS D (V/C ratio of 0.84) during the AM period and LOS E (V/C ratio of 0.99) during the PM period. Given that the project causes the intersection to degrade from LOS D to LOS E during the AM and LOS E to LOS F during the PM, the addition of project traffic generates a significant impact. (Significant Impact).</p>	<p><u>Mitigation 3.4-A. Balfour Road/SR4 Bypass/Concord Avenue Near-Term – Vineyards Project:</u> The primary mitigation would be the construction of the SR4 Bypass, which would relieve several of the major movements contributing to the poor level of service. The project would satisfy its fair share traffic fee obligation collected by the East Contra Costa County Regional Fee and Financing Authority (ECCRFFA) and the East County Transportation Improvement Authority (ECTIA) for construction of Segment 3 of the SR4 Bypass. With construction of the additional lanes near the Balfour Road/SR4 Bypass/Concord Avenue intersection by the financing authority, the impact would be less than significant. (Less Than Significant Impact).</p>	<p>Less than Significant Impact</p>
<p><u>IMPACT 3.4-B. Balfour Road/Fairview Avenue Near-Term – Vineyards Project:</u> The Balfour Road/Fairview Avenue intersection operates at LOS D (V/C ratio of 0.87) during the AM period and LOS F (V/C ratio of 1.06) during the PM period. Prior to the introduction of project traffic, this intersection operates at LOS D (V/C ratio of 0.84) during the</p>	<p><u>Mitigation 3.4-B. Balfour Road/Fairview Avenue Near Term – Vineyards Project:</u> The primary mitigation would be the construction of Segment 3 of the SR4 Bypass, which would relieve several of the major movements contributing to the poor level of service. The project would satisfy its fair share traffic fee obligation collected by the East Contra Costa County Regional Fee and</p>	<p>Less than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>AM period and LOS F (V/C ratio of 1.02) during the PM period. Therefore, this intersection operates at LOS F during the PM period even without project traffic. Contribution of project traffic is this intersection is a significant impact. (Significant Impact).</p>	<p>Financing Authority (ECCRFFA) and the East County Transportation Improvement Authority (ECTIA) for construction of Segment 3 of the SR4 Bypass. With construction of the SR4 Bypass, the impact to the Balfour Road/Fairview Avenue intersection would be less than significant.</p> <p>Adding an eastbound right-turn lane would provide additional mitigation. The project would pay for the cost of this improvement through the fulfillment of the project’s development fee obligations.</p> <p>These mitigations would be constructed by the SR4 Bypass Authority and the City of Brentwood (Fairview Avenue Intersection) and would occur with build-out of the residential component and prior to occupancy of the community college and Village Center.</p> <p>(Less Than Significant Impact).</p>	
<p><u>IMPACT 3.4-C. Marsh Creek Road/Walnut Boulevard Near-Term</u> – Vineyards Project: During the AM peak hour, the intersection of Marsh Creek Road/Walnut Boulevard operates at LOS E (V/C ratio of 1.00) prior to the introduction of project traffic and LOS F (V/C ratio of 1.01) after the introduction of project traffic. During the PM peak hour, this intersection operates at LOS F before (V/C ratio of 1.10) and after (V/C ratio of 1.13) the introduction of project traffic. (Significant Impact).</p>	<p><u>Mitigation 3.4-C. Marsh Creek Road/Walnut Boulevard Near-Term</u> – Vineyards Project: The mitigation of the project impact will require construction of Segment 3 of the SR4 Bypass and intersection-specific improvements. The primary mitigation would be the construction of the SR4 Bypass (Segment 3). The project would contribute its fair share of the cost of SR4 Bypass through the satisfaction of its regional traffic fee obligation collected by the ECCRFFA and ECTIA.</p> <p>The intersection level improvements would include the addition of exclusive left- and right-turn lanes on all approaches. The project would contribute to the cost of these improvements to the City of Brentwood.</p>	<p>Less than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.4-D. Walnut Boulevard/Concord Avenue Near-Term – Vineyards Project:</u> For the AM and PM peak hours, the unsignalized intersection of Walnut Boulevard/ Concord Avenue will operate at LOS F prior to the introduction of project traffic. With additional traffic from the project, this intersection will continue to operate at LOS F. Without a traffic signal, the intersection will operate at a deficient level. The project also meets peak hour volume traffic signal warrants as specified in the Manual of Uniform Traffic Control Devices (MUTCD). (Significant Impact).</p>	<p>The SR4 Bypass would be constructed by the SR4 Bypass Authority, which is currently designing Segment 3 of the SR4 Bypass. The intersection improvements at Marsh Creek Road/Walnut Boulevard will be built by the City of Brentwood. These mitigations should occur with build-out of the residential component and prior to occupancy of the community college and Village Center. With construction of the SR4 Bypass and the intersection improvements, the impact to the Marsh Creek Road/Walnut Boulevard intersection would be less than significant. (Less Than Significant Impact).</p>	
<p><u>IMPACT 3.4-E. Intersection Operations Long-Term – Vineyards Project and Annexation Sites:</u> As indicated in Table 3.4-10, all intersections in the vicinity of the Vineyards project and Annexation Sites would operate at acceptable levels of service. This is due to completion of Segment 3 of the SR4 Bypass and other improvements made in the project vicinity. A less than significant impact would result with the</p>	<p><u>Mitigation 3.4-D. Walnut Boulevard/Concord Avenue Near Term – Vineyards Project:</u> Mitigation for this impact would be the installation of a traffic signal at this intersection. The project would contribute their fair share of this traffic signal through the fulfillment of the project’s development fee obligation. The City of Brentwood would install this traffic signal. With the installation of the traffic signal the impact to the Walnut Boulevard/Concord Avenue intersection would be less than significant. (Less than Significant Impact).</p>	<p>Less than Significant Impact</p>
<p><u>IMPACT 3.4-E. Intersection Operations Long-Term – Vineyards Project and Annexation Sites:</u> The Long-Term Vineyards project and Annexation Sites would result in a less than significant intersection operations impact and, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.4-E. Intersection Operations Long Term – Vineyards Project and Annexation Sites:</u> The Long-Term Vineyards project and Annexation Sites would result in a less than significant intersection operations impact and, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>Long-Term Vineyards project and Annexation Sites. (Less Than Significant Impact).</p>	<p><u>IMPACT 3.4-F. Addition of Construction Traffic – Vineyards Project:</u> Construction of the Vineyards project would not generate substantial volumes of construction traffic such that significant traffic impacts are created. Moreover, heavy equipment would be staged on the project site and thereby not contribute substantially to roadway traffic in the project vicinity. A less than significant impact related to construction traffic would result. (Less Than Significant Impact).</p>	<p>Less than Significant Impact</p>
<p><u>IMPACT 3.4-G. Project Access, Emergency Vehicle Access, and Site Circulation – Vineyards Project:</u> Based upon review of available project design plans, the Vineyards project would not result in hazards due to unacceptable design features. The project would provide adequate emergency access. Further, the project would not substantially conflict with City of Brentwood or CCTA alternative transportation policies, plans or programs. A less than significant project access and circulation impact would result. (Less Than Significant Impact).</p>	<p><u>Recommended Mitigation 3.4-F. Addition of Construction Traffic – Vineyards Project:</u> Construction related traffic due to the Vineyards project would result in a less than significant impact and, therefore, no mitigation is required. However, the City of Brentwood has indicated a desire to limit the number of construction vehicles on Walnut Boulevard. Therefore, the following recommendations are made:</p> <ul style="list-style-type: none"> ❖ Construction traffic would be routed onto Balfour Road using Concord Avenue and Fairview Avenue to the north and east of the project. Construction vehicles would be prohibited from using Walnut Boulevard above Concord Avenue given the high volumes found on this roadway. <p>(Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.4-G. Project Access, Emergency Vehicle Access, and Site Circulation – Vineyards Project:</u> Based upon review of available project design plans, the Vineyards project would not result in hazards due to unacceptable design features. The project would provide adequate emergency access. Further, the project would not substantially conflict with City of Brentwood or CCTA alternative transportation policies, plans or programs. A less than significant project access and circulation impact would result. (Less Than Significant Impact).</p>	<p><u>Recommended Mitigation 3.4-G. Project Access, Emergency Vehicle Access, and Site Circulation – Vineyards Project:</u> The long-term Vineyards project would result in a less than significant impact as it related to Project access, emergency vehicle access and site circulation impact and, therefore, no mitigation is required. However, the following recommendations are made for incorporation in the Vineyard project site plan:</p> <ul style="list-style-type: none"> ❖ Neighborhood access roadways intersecting with Fairview Avenue would not be signalized. Side-street stop sign control would be sufficient for these minor roadways and driveways. 	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> ❖ Parking for the Active Adult residences should be provided using a minimum ratio of one parking space for seven houses, and a maximum of one parking space for every three houses. (Less Than Significant Impact.) 	

**TABLE S.1
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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
3.5 AIR QUALITY		
<p><u>IMPACT 3.5-A. Short-Term Air Quality Impacts – Vineyards</u> <u>Project:</u> Development of the proposed project may result in temporary construction related air quality impacts. Implementation of BAAQMD’s recommended control measures for construction emissions would reduce impacts to less than significant levels. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.5-A.1 Short-Term Air Quality Impacts – Vineyards</u> <u>Project:</u> All new development shall implement the following control measures at all construction sites:</p> <ul style="list-style-type: none"> ❖ Water all grading and construction areas at least twice daily. ❖ Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least two feet of freeboard. ❖ Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at grading and construction sites. ❖ Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites. ❖ Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets. 	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.5-A. Short-Term Air Quality Impacts – Vineyards</u> <u>Project:</u> Development of the proposed project may result in temporary construction related air quality impacts. Implementation of BAAQMD’s recommended control measures for construction emissions would reduce impacts to less than significant levels. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.5-A.2 Short-Term Air Quality Impacts – Vineyards</u> <u>Project:</u> Development of sites greater than four acres shall implement the following control measures:</p> <ul style="list-style-type: none"> ❖ Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more). ❖ Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.) ❖ Limit traffic speeds on unpaved roads up to 15 mph. 	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.5-B. Short-Term Air Quality Impacts – Annexation Sites:</u> Future development of the Annexation Sites may eventually result in temporary construction related air quality impacts. Implementation of BAAQMD’s recommended control measures for construction emissions would reduce impacts to less than significant levels. (Potentially Significant Impact).</p>	<ul style="list-style-type: none"> ❖ Install sandbags or other erosion control measures to prevent silt runoff to public roadways. ❖ Replant vegetation in disturbed areas as quickly as possible. (Less Than Significant Impact). <p><u>Mitigation 3.5-B.1 Short-Term Air Quality Impacts – Annexation Sites:</u> All new development shall implement the following control measures at all construction sites:</p> <ul style="list-style-type: none"> ❖ Water all grading and construction areas at least twice daily. ❖ Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least two feet of freeboard. ❖ Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites. ❖ Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites. ❖ Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets. 	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.5-B. Short-Term Air Quality Impacts – Annexation Sites:</u> Future development of the Annexation Sites may eventually result in temporary construction related air quality impacts. Implementation of BAAQMD’s recommended control measures for construction emissions would reduce impacts to less than significant levels. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.5-B.2 Short-Term Air Quality Impacts – Annexation Sites:</u> Development of sites greater than four acres shall implement the following measures:</p> <ul style="list-style-type: none"> ❖ Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more). ❖ Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.) ❖ Limit traffic speeds on unpaved roads up 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. (Less Than Significant Impact). 	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.5-C. Plan Consistency Impacts – Vineyards Project:</u> Development of the proposed Vineyards Project would be consistent with applicable air quality plans and policies. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.5-C. Plan Consistency Impacts – Vineyards Project:</u> The project would have a less than significant impact related to plan consistency; therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.5-D. Plan Consistency Impacts – Annexation Sites:</u> Possible future development of the Annexation Sites would be consistent with applicable air quality plans and policies. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.5-D. Plan Consistency Impacts – Annexation Sites:</u> The Annexation Sites would have a less than significant impact related to plan consistency, therefore no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>

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SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.5-E. Operational Air Quality Impacts – Vineyards</u> <u>Project:</u> Future area source and vehicular emissions under the proposed project would result in operational air quality impacts. Analysis shows that air emissions with buildout of the proposed project would exceed BAAQMD thresholds for ROG in the near-term (2007) and ROG and PM₁₀ emissions in the long-term (2025). (Potentially Significant Impact).</p>	<p><u>Mitigation 3.5-E.1. Operational Air Quality Impacts – Vineyards</u> <u>Project:</u> The following measures shall be implemented in order to reduce motor vehicle emissions from commercial and/or institutional uses:</p> <ul style="list-style-type: none"> ❖ Construct transit facilities such as bus turnouts/bus bulbs, benches, shelters, etc; ❖ At office buildings, provide preferential parking (e.g., near building entrance, sheltered area, etc.) for carpool and vanpool vehicles; ❖ Provide electric vehicle charging stations at recreation center and commercial center; ❖ Provide secure, weather-protected bicycle parking for employees in the commercial area; ❖ Provide safe, direct access for bicyclists to adjacent bicycle routes; ❖ Provide short-term bicycle parking for retail customers and other non-commute trips; and ❖ Provide direct, safe, attractive pedestrian access from the project area to transit stops and adjacent development. 	<p>Significant and Unavoidable Impact</p>
<p><u>IMPACT 3.5-E. Operational Air Quality Impacts – Vineyards</u> <u>Project:</u> Future area source and vehicular emissions under the proposed project would result in operational air quality impacts. Analysis shows that air emissions with buildout of the proposed project would exceed BAAQMD thresholds for ROG in the near-term (2007) and ROG and PM₁₀ emissions</p>	<p><u>Mitigation 3.5-E.2. Operational Air Quality Impacts – Vineyards</u> <u>Project:</u> The following measures shall be implemented in order to reduce motor vehicle emissions from residential uses:</p> <ul style="list-style-type: none"> ❖ Provide bicycle lanes and/or paths, connected to community-wide network; 	<p>Significant and Unavoidable Impact</p>

**TABLE S.1
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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>in the long-term (2025). (Potentially Significant Impact).</p>	<p>❖ Provide sidewalks and/or paths, connected to adjacent land uses, transit stops, and/or community-wide network. (Significant and Unavoidable Impact).</p>	
<p><u>IMPACT 3.5-F. Operational Air Quality Impacts – Annexation Sites:</u> Potential future development of the Annexation Sites may result in operational air quality impacts. Air emissions would not exceed BAAQMD thresholds. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.5-F. Operational Air Quality Impacts – Annexation Sites:</u> The following measures shall be implemented in order to reduce motor vehicle emissions from institutional uses:</p> <ul style="list-style-type: none"> ❖ Construct transit facilities such as bus turnouts/bus bulbs, benches, shelters, etc; ❖ At the community college, provide preferential parking (e.g., near building entrance, sheltered area, etc.) for carpool and vanpool vehicles; ❖ Provide secure, weather-protected bicycle parking for employees; ❖ Provide safe, direct access for bicyclists to adjacent bicycle routes; ❖ Provide short-term bicycle parking for college students and park users; ❖ Provide direct, safe, attractive pedestrian access from the project area to transit stops and adjacent development, and ❖ Provide electric vehicle charging stations. (Less Than Significant Impact). 	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.5-G. Cumulative Air Quality Impacts:</u> Impacts to regional air quality resulting from development of the</p>	<p><u>Mitigation 3.5-G. Cumulative Air Quality Impacts:</u> The Vineyards project and Annexation Sites would contribute to a significant and</p>	<p>Significant and Unavoidable Cumulative</p>

**TABLE S.1
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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>Vineyards project, the Annexation sites, and other cumulative projects throughout the air basin may impact existing air quality levels. Cumulative impacts as a result of project implementation would be significant and unavoidable. (Potentially Significant Cumulative Impact).</p>	<p>unavoidable impact related to cumulative air impacts. Mitigation Measures 3.5-E.1, 3.5-E.2 and 3.5-F would reduce the projects' contribution to this impact, but not to a less than significant level. (Significant and Unavoidable Cumulative Impact).</p>	<p>Impact.</p>
<p>3.6 NOISE</p>		
<p><u>IMPACT 3.6-A. Short Term Construction Noise Impacts – Vineyards Project:</u> Grading and construction within the project area would result in temporary noise impacts to nearby noise sensitive receptors. Construction noise impacts would be required to comply with the City of Brentwood Noise Ordinance. Site grading activities along the northeastern project boundary would have the potential to result in a temporary substantial noise increase for the residents of the southernmost portion of the Summerset development. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.6-A.1. Short Term Construction Noise Impacts – Vineyards Project:</u> The following mitigation measure is required. All construction activities shall abide by the provisions as set forth within the City of Brentwood Municipal Code Section 9.32.050, <i>Prohibited Special Noise Sources</i>. Specifically, construction activities adjacent to residential uses shall be limited to the hours of 8:00 a.m. to 5:00 p.m., Monday through Friday and 9:00 a.m. through 4:00 p.m. on Saturdays and prohibited on Sundays and federal holidays.</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.6-A. Short Term Construction Noise Impacts – Vineyards Project:</u> Grading and construction within the project area would result in temporary noise impacts to nearby noise sensitive receptors. Construction noise impacts would be required to comply with the City of Brentwood Noise Ordinance. Site grading activities along the northeastern project boundary would have the potential to result in a temporary substantial noise increase for the residents of the southernmost portion of the Summerset development. (Potentially Significant Impact).</p>	<p><u>Recommended Mitigation 3.6-A.2. Short Term Construction Noise Impacts – Vineyards Project:</u> The following are recommended mitigation measures. Prior to issuance of a grading permit, the Grading Plan shall be reviewed and approved by the Community Development Department to ensure compliance with the following:</p> <ul style="list-style-type: none"> ❖ Maximize the physical separation between noise generators and noise receptors. Such separation includes, but is not limited to, the following measures: ❖ Provide enclosures such as heavy duty mufflers for stationary 	<p>Less Than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>equipment and barriers around particularly noisy areas on the site or around the entire site, as necessary;</p> <ul style="list-style-type: none"> ❖ Use shields, impervious fences, or other physical sound barriers, to inhibit transmission of noise to sensitive receptors; and ❖ Locate stationary equipment to minimize noise impacts on the community. ❖ Select quiet construction equipment whenever possible, particularly air compressors. ❖ Prohibit unnecessary idling of internal combustion engines near sensitive receptors. ❖ Select routes for movement of construction-related vehicles and equipment in conjunction with the City of Brentwood such that noise-sensitive areas, including residences, hotels, and outdoor recreation areas, are avoided as much as possible. ❖ If pile driving is necessary because of geotechnical considerations, pre-drill the pile holes. This measure will reduce the force necessary to install piles and decrease the duration of noise and vibration exposure as well as the noise and vibration level. Shielded pile drivers or vibratory pile drivers shall be used where geotechnical conditions allow, to reduce noise to or below allowable thresholds. ❖ Designate a noise control coordinator, in conjunction with development projects, who will be responsible for responding to complaints about noise during construction. The telephone number of the noise control coordinator shall be conspicuously 	

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.6-B. Short Term Construction Noise Impacts – Annexation Sites:</u> Approval of the Annexation Sites would result in annexation of the two properties into the City of Brentwood and general plan amendments to allow for potential future improvements on the John Marsh Home site and development of a new community college. Both sites are sufficiently distant from existing residential receptors and future Vineyards residences that no significant impact from construction noise would be occur unless worst-case construction activities occurred during nighttime hours. (Less Than Significant Impact).</p>	<p>posted at the construction site. Copies of the construction schedule shall also be made available to the nearby residents. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.6-B. Short Term Construction Noise Impacts – Annexation Sites:</u> Approval of the Annexation Sites would result in annexation of the two properties into the City of Brentwood and general plan amendments to allow for potential future improvements on the John Marsh Home site and development of a new community college. Both sites are sufficiently distant from existing residential receptors and future Vineyards residences that no significant impact from construction noise would be occur unless worst-case construction activities occurred during nighttime hours. (Less Than Significant Impact).</p>	<p><u>Recommended Mitigation 3.6-B.1. Short Term Construction Noise Impacts – Annexation Sites:</u> All construction activities adjacent to residential uses shall be limited to the hours of 8:00 a.m. to 5:00 p.m., Monday through Friday, and 9:00 a.m. through 4:00 p.m. on Saturdays and prohibited on Sundays and federal holidays.</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.6-B. Short Term Construction Noise Impacts – Annexation Sites:</u> Approval of the Annexation Sites would result in annexation of the two properties into the City of Brentwood and general plan amendments to allow for potential future improvements on the John Marsh Home site and development of a new community college. Both sites are sufficiently distant from existing residential receptors and future Vineyards residences that no significant impact from construction noise would be occur unless worst-case construction activities occurred during nighttime hours. (Less Than Significant Impact).</p>	<p><u>Recommended Mitigation 3.6-B.2. Short Term Construction Noise Impacts – Annexation Sites:</u> The following are recommended mitigation measures. Prior to issuance of a grading permit, the Grading Plan shall include the following:</p> <ul style="list-style-type: none"> ❖ Maximize the physical separation between noise generators and noise receptors. Such separation includes, but is not limited to, the following measures: ❖ Provide enclosures such as heavy duty mufflers for stationary equipment and barriers around particularly noisy areas on the site or around the entire site, as necessary; 	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> ❖ Use shields, impervious fences, or other physical sound barriers, to inhibit transmission of noise to sensitive receptors; and ❖ Locate stationary equipment to minimize noise impacts on the community. ❖ Select quiet construction equipment whenever possible, particularly air compressors. ❖ Prohibit unnecessary idling of internal combustion engines near sensitive receptors. ❖ Select routes for movement of construction-related vehicles and equipment in conjunction with the City of Brentwood such that noise-sensitive areas, including residences, hotels, and outdoor recreation areas, are avoided as much as possible. ❖ If pile driving is necessary because of geotechnical considerations, pre-drill the pile holes. This measure will reduce the force necessary to install piles and decrease the duration of noise and vibration exposure as well as the noise and vibration level. Shielded pile drivers or vibratory pile drivers shall be used where geotechnical conditions allow, to reduce noise to or below allowable thresholds. ❖ Designate a noise control coordinator, in conjunction with development projects, who will be responsible for responding to complaints about noise during construction. The telephone number of the noise control coordinator shall be conspicuously posted at the construction site. 	

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.6-C. Long Term Transportation Noise Impacts – Vineyards Project:</u> Implementation of the Vineyards Project would generate additional vehicular travel on the surrounding roadway network, resulting in noise level increases. Noise modeling indicates that a less than 5 dBA increase due to the increase in traffic levels would result under the Existing (year 2007) Plus Vineyards Project conditions and under Future (Year 2025) Plus Vineyards Project conditions. In addition, no sensitive receptors at the Vineyards Project site or elsewhere would be affected by 3 dBA increases where ambient noise equals or exceeds 60 dBA Ldn. (Less Than Significant Impact).</p>	<p>Copies of the construction schedule shall also be made available to the nearby residents. (Less Than Significant Impact).</p> <p><u>Mitigation 3.6-C. Long Term Noise Impacts – Vineyards Project:</u> The project would result in less than significant long-term transportation noise impacts, therefore no mitigation measures are required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.6-D. Long Term Transportation Noise Impacts – Annexation Sites:</u> Approval of the Annexation Sites would result in annexation of the two properties into the City of Brentwood and general plan designations allowing for potential future improvements on the John Marsh Home site and the community college site. Only minor changes are contemplated on the John Marsh Home property. Plans could be developed and approved for a new community college on the community college site. Potential development of a future college could potentially result in a substantial increase in long-term noise. However, modeling indicates the increase in noise levels would be within established criteria/threshold</p>	<p><u>Mitigation 3.6-D. Long Term Transportation Noise Impacts – Annexation Sites:</u> The project would result in less than significant long-term transportation noise impacts. Therefore, no mitigation measures are required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>levels, resulting in less than significant impact. (Less Than Significant Impact).</p> <p><u>IMPACT 3.6-E. Stationary Noise Impacts – Vineyards Project:</u> Implementation of the proposed Vineyards Project would result in the generation of on-site noise associated with retail commercial activities that include loading/unloading activities, operation of mechanical equipment (e.g., air conditioning units) and activities occurring in parking lots. Stationary source impacts would result in a less than significant impact. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.6-E. Stationary Noise Impacts – Vineyards Project:</u> The proposed Vineyards Project would result in less than significant stationary noise impacts, therefore no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.6-F. Stationary Noise Impacts – Annexation Sites:</u> Approval of the Annexation Sites would result in annexation of the two properties into the City of Brentwood and general plan designations allowing for potential future improvements on the John Marsh Home site and the community college site. Only minor changes are contemplated on the John Marsh Home property. Plans could be developed and approved for a new community college on the community college site. Potential development of a future college could potentially result in a substantial increase in stationary-source noise, but the college is not near sensitive receptors. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.6-F. Stationary Noise Impacts – Annexation Sites:</u> The project would result in less than significant stationary-source noise impacts. Therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.6-G. Impacts of External Noise on Vineyards Project:</u> Implementation of the proposed Vineyards Project would result in exposure of project residents and users to traffic noise and “blowdown” noise from the Brentwood Terminal. Because the project includes a soundwall to protect</p>	<p><u>Recommended Mitigation 3.6-G. Impacts of External Noise on Vineyards Project:</u> Exposure of Vineyards residents to external noise is a less-than-significant impact, therefore no mitigation is required. However, the following is a recommended mitigation measure:</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>the site from the SR 4 Bypass noise and loud “blowdown” noise is infrequent, this impact would be less than significant. (Less Than Significant Impact).</p>	<p>measure: ❖ As part of its real estate sale disclosures, the applicant shall notify all prospective purchasers of the property’s of their potential exposure to PG&E Brentwood Terminal blowdown noise. (Less Than Significant Impact)</p>	
<p><u>IMPACT 3.6-H: Impacts of External Noise on Annexation Sites:</u> No significant noise sources are near the Annexation Sites, thus no significant impact would occur. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.6-H: Impacts of External Noise on Annexation Sites:</u> Exposure of Annexation Sites users to external noise is a less-than-significant impact, therefore no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.6-I. Cumulative Noise Impacts:</u> Noise impacts resulting from development of cumulative projects may impact existing sensitive receptors. Cumulative impacts as a result of project implementation would be less than significant. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.6-I. Cumulative Noise Impacts:</u> The project would have a less than significant cumulative noise impact, therefore no mitigation is required. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>
<p>3.7 VISUAL RESOURCES</p>		
<p><u>IMPACT 3.7-A. Degradation of Visual Character - Vineyards Project:</u> The City of Brentwood has a rural, small-town atmosphere that defines its visual character and is an important asset to its residents. The proposed Vineyards project has been designed with this in mind and with substantial public input to minimize degradation of the visual character and to maintain the small-town rural character of the City. However, the Vineyards project would result in a</p>	<p><u>Mitigation 3.7-A.1 Degradation of Visual Character - Vineyards Project:</u> The project proponent shall prepare a landscaping plan that will be reviewed and approved by the City of Brentwood’s Planning Commission prior to approval of the Planned Development zone. The plan shall be prepared by a licensed landscape architect and shall pay special attention to screening portions of the development that may be considered visually unappealing and disharmonious from view of the John Marsh Home and surrounding State Park.</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>change to the visual character of the site as seen by neighboring residences and those passing by the site on the SR4 Bypass. (Significant Impact).</p>	<p>Any industrial portions of the Village Center and winery shall be screened from offsite residences and roadways. Agricultural staging areas and equipment storage areas shall also be screened from the view of offsite residences, the John Marsh Home, and roadways. The plan shall be in conformance with the parameters established in the Brentwood Municipal Code § 17.630.010. (Less Than Significant Impact).</p>	
<p><u>IMPACT 3.7-A. Degradation of Visual Character - Vineyards Project:</u> The City of Brentwood has a rural, small-town atmosphere that defines its visual character and is an important asset to its residents. The proposed Vineyards project has been designed with this in mind and with substantial public input to minimize degradation of the visual character and to maintain the small-town rural character of the City. However, the Vineyards project would result in a change to the visual character of the site as seen by neighboring residences and those passing by the site on the SR4 Bypass. (Significant Impact).</p>	<p><u>Mitigation 3.7-A.2 Degradation of Visual Character - Vineyards Project:</u> The City of Brentwood Planning Commission shall perform design review on the Vineyards project prior to issuance of building permits. The Planning Commission shall review the proposed project to ensure that it: represents a well-composed urban design that is harmoniously related to adjacent developments; has a high quality exterior design with regard to lighting, building heights, site layout, building materials, color, and landscaping; is of a quality that serves to protect the value of private and public investments in the vicinity; and meets the provisions and criteria established in the Brentwood Municipal Code Chapter 17.820 and the Brentwood Design Guidelines. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.7-B. Degradation of Visual Character - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Potential development of a community college, however, would result in a change in the</p>	<p><u>Mitigation 3.7-B.1. Degradation of Visual Character - Annexation Sites:</u> Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or the addition of an interpretive center inside the Home. These potential improvements would result in less than significant impacts, which do not require mitigation. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>visual character of the site from its currently undeveloped state to an urbanized land use. This change would have the potential to result in a degradation of the visual character on the site. This potential effect could result in a significant impact. (Potentially Significant Impact).</p>		
<p><u>IMPACT 3.7-B. Degradation of Visual Character – Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Potential development of a community college, however, would result in a change in the visual character of the site from its currently undeveloped state to an urbanized land use. This change would have the potential to result in a degradation of the visual character on the site. This potential effect could result in a significant impact. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.7-B.2. Degradation of Visual Character – Annexation Sites:</u> Potential development of a community college could result in potentially significant impacts with regard to degradation of the site’s visual character. These impacts would be reduced with the following mitigation measures. (Less Than Significant Impact).</p> <ul style="list-style-type: none"> ❖ When and if plans are developed for the community college site, further environmental review shall be conducted by the Contra Costa Community College District and include a visual assessment to identify the change in the site’s visual character and potential adverse impacts to on- or off-site views. Moreover, the visual assessment shall incorporate measures to minimize the development’s impact on visual resources. Measures to mitigate project effects of any future community college shall include, but are not limited to, incorporation of landscaping to serve as screening, orientation of buildings to limit obstruction of existing views from sensitive viewpoints, and use of aesthetically pleasing design features and building materials. ❖ When and if plans are developed for the community college site, the Contra Costa Community College District should present the project to the State Architect for review and approval. The State Architect shall review the proposed project to ensure that it represents a well-composed urban 	<p>Less Than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.7-C. Effect on Scenic Vistas - Vineyards Project:</u> The proposed Vineyards project would alter views of the site from the surrounding roadways, intersections, adjacent residential properties, and publicly accessible properties. Substantial consideration has been given to the Vineyards project effects on scenic vistas during the conceptual design and planning process. The project would result in a substantial visual change to undeveloped, rural lands that make up the proposed Vineyards project site. However, it would have a minimal effect on scenic resources and vistas beyond the boundaries of the Vineyards project site. The changes to the Vineyards project site would not result in any adverse effects to scenic vistas. (Less Than Significant Impact).</p>	<p>design that is harmoniously related to adjacent developments; has a high quality exterior design with regards to lighting, building heights, site layout, building materials, color, and landscaping; and is of a quality that serves to protect the value of private and public investments in the vicinity. (Less Than Significant Impact).</p> <p><u>Mitigation 3.7-C. Effect on Scenic Vistas – Vineyards Project:</u> The proposed Vineyards project would not result in a significant adverse effect to scenic vistas; therefore no mitigation is necessary. However, Mitigation Measures 3.7-A.1 and 3.7-A.2 would further reduce this already less than significant impact through design review and landscaping requirements. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.7-D. Effect on Scenic Vistas - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. Development of a potential community college would result in less than significant impacts to scenic vistas because the site is located at a relatively low elevation in the City and the site is nearly level with no potential to disturb ridgelines</p>	<p><u>Mitigation 3.7-D. Effect on Scenic Vistas – Annexation Sites:</u> Potential future development of the Annexation Sites would not result in an adverse effect on scenic vistas, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>and/or substantially obstruct views of offsite ridgelines. Improvements to the John Marsh Home would result in less than significant impacts to scenic vistas because improvements to the John Marsh Home are anticipated to be minimal including, restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. These improvements would have little potential to result in significant adverse effects on scenic vistas. (Less Than Significant Impact).</p>		
<p><u>IMPACT 3.7-E. Damage to Scenic Resources - Vineyards Project:</u> The Vineyards project is located in the vicinity of scenic resources that have been identified as being of local, regional, and/or statewide importance such as the foothills of the Diablo Range, Mount Diablo, and the John Marsh Home. While these resources are not located on the Vineyards project site, the proposed project would have the potential to alter views to these resources. However, substantial consideration of the project’s potential to degrade scenic resources has been given during the conceptual design and planning phases. Through design parameters (e.g., buildings placed below ridgelines) and incorporation of landscaping, the proposed Vineyards project would have a less than significant impact on offsite scenic resources. (Less than Significant Impact).</p>	<p><u>Mitigation 3.7-E. Damage to Scenic Resources - Vineyards Project:</u> The Vineyards project would not significantly affect scenic resources; therefore no mitigation is necessary. However, Mitigations 3.7-A.1 and A.2 would further reduce this already insignificant impact. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.7-F. Damage to Scenic Resources - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future.</p>	<p><u>Mitigation 3.7-F. Damage to Scenic Resources - Annexation Sites:</u> The Annexation Sites would have a less than significant impact on scenic resources and, therefore, no mitigation is required.</p>	<p>Less Than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>Development of a potential community college would result in less than significant impacts to scenic resources because the site is relatively level, at a low elevations, and has no visually significant features. Improvements to the John Marsh Home site could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. These improvements would have little potential to result in significant adverse effects on scenic resources. (Less Than Significant Impact).</p>	<p>(Less Than Significant Impact).</p>	
<p><u>IMPACT 3.7-G. Light and Glare - Vineyards Project:</u> The proposed Vineyards project would introduce new sources of light and glare to a property that is currently undeveloped. The project's generation of light and glare would have the potential to result in a degradation of atmospheric night-sky conditions and could potentially result in safety hazards to passing motorists on the planned SR4 Bypass. (Significant Impact).</p>	<p><u>Mitigation 3.7-G.1. Light and Glare - Vineyards Project:</u> The project proponent shall prepare a lighting plan that shall be part of the review and approval by the Brentwood Planning Commission. To minimize potential disturbance that may be caused by outdoor lighting to the maximum extent possible, and to avoid excessive contributions to atmospheric nightsky conditions, outdoor lighting shall include the following standards:</p> <ul style="list-style-type: none"> ❖ Parking lot and exterior building lighting shall be installed to the approval of the Community Development and Police Departments. ❖ All lighting shall be shielded from abutting properties. ❖ No lighting shall be of the type or in a location such that it constitutes a hazard to vehicular traffic, either on private property or on abutting streets. ❖ The spacing and height of the standards and luminars shall be such that a maximum of seven foot candles and a minimum of one foot candle of illumination are obtained on all vehicle access ways and parking areas. 	<p>Less Than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.7-G. Light and Glare - Vineyards Project:</u> The proposed Vineyards project would introduce new sources of light and glare to a property that is currently undeveloped. The project’s generation of light and glare would have the potential to result in a degradation of atmospheric night-sky conditions and could potentially result in safety hazards to passing motorists on the planned SR4 Bypass. (Significant Impact).</p>	<ul style="list-style-type: none"> ❖ The height of light standards shall not exceed 20 feet. ❖ To prevent damage from automobiles, standards shall be mounted on reinforced concrete pedestals or otherwise protected. ❖ Under canopy lighting elements shall be recessed or concealed in such a manner as not to be directly visible from a public street. ❖ Lighting shall be installed around the perimeter of the building and be vandal resistant. (Less Than Significant Impact). 	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.7-H. Light and Glare - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Potential development of a community college, however, would result in the introduction of light and glare generating</p>	<p><u>Mitigation 3.7-G.2. Light and Glare - Vineyards Project:</u> To minimize glare generated by the proposed project, the project proponent shall design the project with non-reflective glass and construction materials to the extent feasible. The glass and building materials shall be part of the review and approval by the Planning Commission. (Less Than Significant Impact).</p> <p><u>Mitigation 3.7-H.1 Light and Glare - Annexation Sites:</u> Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. These potential improvements would result in less than significant impacts, which do not require mitigation.</p>	<p>Less Than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>sources to a site that is currently undeveloped. This potential effect would result in a potentially significant impact. (Potentially Significant Impact).</p> <p><u>IMPACT 3.7-H. Light and Glare - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Potential development of a community college, however, would result in the introduction of light and glare generating sources to a site that is currently undeveloped. This potential effect would result in a potentially significant impact. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.7-H.2 Light and Glare – Annexation Sites:</u> Potential development of a community college would result in potentially significant light and glare impacts. These impacts would be reduced to a less than significant level with application of the following mitigation measure(s):</p> <p>If any development plans are proposed for the community college site, the Contra Costa Community College District shall conduct an environmental review that includes an assessment of the project’s visual impacts with regard to light and glare generation. If significant impacts are identified, mitigation measures shall be required to reduce these impacts to a less than significant level. Prior to the approval of any development plans for the community college, the development plans shall incorporate mitigation measures required in the environmental review. Such measures to consider shall include, but not be limited to, the following:</p> <ul style="list-style-type: none"> ❖ Parking lot and exterior building lighting shall be installed to the approval of the Community Development and Police Departments. ❖ All lighting shall be shielded from abutting properties. ❖ No lighting shall be of the type or in a location such that it constitutes a hazard to vehicular traffic, either on private property or on abutting streets. 	<p>Less Than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.7-I. Consistency with General Plan Community Design Policies - Vineyards Project:</u> The proposed Vineyards project has been the subject of a number of recent public workshops. A substantial amount of discussion centered on the project’s visual and aesthetic effects, resulting in a project that is consistent with the General Plan’s Community Design Policies. In addition, pursuant to City Code requirements, the site would be hydro-seeded after grading and would, therefore, be consistent with General Plan Policy 2.1 of the Community Design Element. (Less Than Significant Impact).</p>	<ul style="list-style-type: none"> ❖ The spacing and height of the standards and luminars shall be such that a maximum of seven foot candles and a minimum of one foot candle of illumination are obtained on all vehicle access ways and parking areas. ❖ The height of light standards shall not exceed 20 feet. ❖ To prevent damage from automobiles, standards shall be mounted on reinforced concrete pedestals or otherwise protected. ❖ Under canopy lighting elements shall be recessed or concealed in such a manner as not to be directly visible from a public street. ❖ Lighting shall be installed around the perimeter of the building and be vandal resistant. (Less Than Significant Impact). 	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.7-J. Cumulative Impacts – Degradation of Visual Character:</u> The Vineyards project and the potential future</p>	<p><u>Mitigation 3.7-I. Consistency with General Plan Community Design Policies – Vineyards Project:</u> The Vineyards project would be consistent with the General Plan’s Community Design Policies and General Plan Policy 2.1; therefore no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Cumulative Impact</p>
<p><u>IMPACT 3.7-J. Cumulative Impacts – Degradation of Visual Character:</u> The Vineyards project and the potential future</p>	<p><u>Mitigation 3.7-J. Cumulative Impacts – Degradation of Visual Character:</u> Implementation of project-specific mitigation for</p>	<p>Less Than Significant Cumulative Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>development of the Annexation Sites, in combination with past, present, and probable future projects in the City of Brentwood as contemplated in the City's General Plan, would change the visual character of the area. (Significant Cumulative Impact).</p>	<p>impacts on the visual character of the area (see Mitigation Measures 3.7-A.1, 3.7-A.2 and 3.7-B.2) would reduce the project's contribution to cumulative visual impacts to a less-than-significant level. (Less Than Significant Cumulative Impact).</p>	
<p><u>IMPACT 3.7-K. Cumulative Impacts – Light and Glare:</u> The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present, and probable future projects in the City of Brentwood, would introduce new sources of light and glare in the area. (Significant Cumulative Impact).</p>	<p><u>Mitigation 3.7-K. Cumulative Impacts – Light and Glare:</u> The implementation of project-specific mitigation (see Mitigation Measures 3.7-G.1, 3.7-G.2 and 3.7-H.2), would reduce the project's contribution to cumulative visual impacts caused by sources of light and glare throughout the City of Brentwood to a less than significant level. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>
<p><u>IMPACT 3.7-L. Cumulative Impacts – Impacts on Scenic Vistas and Scenic Resources:</u> The Vineyards project and the potential future development of the Annexation Sites would not contribute to significant cumulative impacts on scenic vistas and scenic resources. (Less Than Significant Cumulative Impact).</p>	<p><u>Mitigation 3.7-L. Cumulative Impacts – Impacts on Scenic Vistas and Scenic Resources:</u> Cumulative impacts on scenic vistas and scenic resources are less than significant, therefore, no mitigation is required. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Impact Cumulative Impact</p>
<p>3.8 BIOLOGICAL RESOURCES</p>		
<p><u>IMPACT 3.8-A. Seasonal Wetlands - Vernal Pool Brachiopods, Curved-Foot Hygrotus Diving Beetle, and Molestan Blister Beetle – Vineyards Project:</u> Within the project area, 22 seasonal wetlands totaling 0.21 acre (0.08 hectare) provide actual or potential habitat for the vernal pool fairy shrimp, a federally-listed threatened species, as well as other special-status brachiopods. Additionally, these features</p>	<p><u>Mitigation 3.8-A1. Seasonal Wetlands - Vernal Pool Brachiopods, Curved-Foot Hygrotus Diving Beetle, and Molestan Blister Beetle – Vineyards Project:</u> Mitigation for vernal pool fairy shrimp and their habitat will be as follows:</p> <p>a. Preservation/Enhancement - For every acre (0.40 hectare) of aquatic, vernal pool fairy shrimp habitat affected, (a) two vernal pool credits will be dedicated within an approved</p>	<p>Less Than Significant Impact</p>

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SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>have at least some potential to support the curved-foot hygrotus diving beetle and the molestan blister beetle. The proposed project will fill both seasonal-wetland groups occupied by vernal pool fairy shrimp. Therefore, the proposed project will have a significant impact on vernal pool crustaceans. (Significant Impact).</p>	<p>mitigation bank; or (b) based on evaluation of site-specific conservation values and subject to approval by the City, two acres (0.81 hectares) of existing vernal pool habitat and the amount of watershed associated with the preserved pools necessary to sustain the existing hydrology of the pool habitat, at a location within Contra Costa or its surrounding counties, will be acquired, preserved and enhanced through management for the benefit of the vernal pool species;</p> <p>OR</p> <p>b. Creation- For every acre (0.40 hectare) of aquatic vernal pool fairy shrimp habitat affected, at least one vernal pool creation credit will be dedicated within an approved mitigation bank. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.8-B. Direct Loss of Three Special-Status Plants (stinkbells, hogwallow starfish and spearscale) – Vineyards</u></p>	<p><u>Mitigation 3.8-A.2. Seasonal Wetlands – Vernal Pool Brachiopods, Curved Foot Hygrotus Diving Beetle, and Molestan Blister Beetle – Vineyards Project:</u> The uppermost layer of soil in seasonally inundated habitat may contain cysts of listed crustaceans as well as seeds of vernal pool plants. Therefore, before these wetlands are filled, the top layer of soil shall be made available prior to the start of project grading to any vernal pool creation bank that requests it, with USFWS approval, for inoculating newly created pools. Soil stockpiled for this purpose should be shielded from rain with a water-proof cover to ensure that it remains completely dry. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.8-B. Direct Loss of Three Special-Status Plants (stinkbells, hogwallow starfish and spearscale) – Vineyards</u></p>	<p><u>Mitigation 3.8-B: Loss of Stinkbells, Hogwallow Starfish and Spearscale – Vineyards Project:</u> This impact is considered Less</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>Project:</u> Implementation of the proposed project would result in the direct loss of stinkbells, hogwallow starfish and spearscale. The three special-status plant species found on the project site are neither federally nor state listed as threatened or endangered. Based on an evaluation by H.T. Harvey & Associates of their ecology, abundance and distribution, including corroboration with regional botanists familiar with the project area, the impacts to these three special-status species would not be considered significant. (Less Than Significant Impact).</p>	<p>Than Significant Impact and, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Impact</p>
<p><u>IMPACT 3.8-C. Direct Loss of Crownscale – Vineyards Project:</u> Populations of crownscale, totaling 500 individuals were found on the project site during 2003 surveys by Sycamore Associates. Crownscale occurs in alkali habitats that are becoming increasingly uncommon in the region due to development. Therefore, direct loss of 500 individuals of this species is considered significant. (Significant Impact).</p>	<p><u>Mitigation 3.8-C1. Crownscale – Vineyards Project.</u> The project applicant will compensate for the loss of crownscale at a 1:1 ratio (a) by acquiring, preserving and enhancing through management existing alkali meadow habitat in Contra Costa or surrounding counties, or (b) by purchase of credits in an approved mitigation bank. (See <i>Loss of Alkali Meadow</i>, at 3.8-O, below). (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.8-C. Direct Loss of Crownscale – Vineyards Project:</u> Populations of crownscale, totaling 500 individuals were found on the project site during 2003 surveys by Sycamore Associates. Crownscale occurs in alkali habitats that are becoming increasingly uncommon in the region due to development. Therefore, direct loss of 500 individuals of this species is considered significant. (Significant Impact).</p>	<p><u>Recommended Mitigation 3.8-C2. Crownscale – Vineyards Project.</u> Mitigation Measure 3.8-C1 will reduce the impact to crownscale to a Less Than Significant Impact level. However, to further minimize the impact from direct loss of crownscale, the following additional measure is recommended:</p> <p>To the extent feasible given the time period for site grading, a Plant Mitigation Plan shall be developed for collecting seed on the project site and distributing the seed in a suitable offsite alkali meadow location. The Plant Mitigation Plan shall include the following factors:</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.8-D</u> <u>Impacts to California Tiger Salamander (CTS) – Vineyards Project</u>: The proposed project would remove three CTS breeding ponds, which encompass a total of 0.8 acre (0.32 hectare). All potential and occupied upland aestivation habitat, which includes 13 areas of ground squirrel burrow concentrations in addition to the on-site area within 600 feet of breeding ponds, totaling approximately 103 acres (41.7hectares) would be removed by the project. The loss of CTS individuals, breeding habitat, and aestivation habitat would be considered a significant impact. (Significant Impact).</p>	<p><u>Mitigation 3.8-D.1. California Tiger Salamander (CTS) – Vineyards Project</u>. Prior to the issuance of a building permit, similar or higher-quality aquatic breeding habitat for the CTS shall be created or acquired, preserved in perpetuity, and enhanced through management for the benefit of the species (at a 1:1 acreage ratio for preserved/enhanced habitat or a 2:1 ratio for created habitat, or through a combination of preserved and created breeding habitat using these same ratios) at a location offsite or equivalent credits can be purchased at an approved mitigation bank. Aquatic breeding habitat will contain the following features:</p> <ol style="list-style-type: none"> 1. Emergent vegetation 2. absence of known CTS predators, and 3. water quality and hydrological conditions suitable to breeding and larval development <p>In addition, upland aestivation habitat with the following features shall be acquired, preserved in perpetuity, and enhanced through management for the benefit of the species at a 1:1 acreage ratio:</p> <ol style="list-style-type: none"> 1. contiguous to the aquatic breeding site and 	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.8-D Impacts to California Tiger Salamander (CTS) – Vineyards Project:</u> The proposed project would remove three CTS breeding ponds, which encompass a total of 0.8 acre (0.32 hectare). All potential and occupied upland aestivation habitat, which includes 13 areas of ground squirrel burrow concentrations in addition to the on-site area within 600 feet of breeding ponds, totaling approximately 103 acres (41.7hectares) would be removed by the project. The loss of CTS individuals, breeding habitat, and aestivation habitat would be considered a significant impact. (Significant Impact).</p>	<p>2. grassland habitat, 3. presence of ground squirrel or other fossorial mammals. (Less Than Significant Impact).</p> <p><u>Recommended Mitigation 3.8-D.2. California Tiger Salamander (CTS) (Salvage and Translocation) – Vineyards Project.</u> Implementation of Mitigation Measure 3.8-D.1 will reduce impacts to the California Tiger Salamander to a Less Than Significant Impact level. However, to further minimize impacts to the CTS, the following additional measure is recommended: To the extent feasible, prior to grading, the applicant will direct a qualified biologist possessing all applicable permits to relocate CTS larvae to suitable aquatic habitat. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.8-E. Potential Impacts to California Red-Legged Frog (CRF) – Vineyards Project:</u> No CRF were observed within the project area or Marsh Creek during surveys. However, the potential remains for CRF to be present during construction of the outfall or bridge crossing within Marsh Creek or during construction of the remainder of the project. As such, the proposed project could have a significant impact on the CRF. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.8-E1. California Red-legged Frog – Vineyards Project.</u> A qualified biologist will conduct pre-construction surveys for CRF in all construction areas located within 300 feet of Marsh Creek. Following preconstruction surveys with negative results, all vegetation within the project impact area adjacent to and in the creek (or other relevant wetland habitats) will be removed and exclusion fencing will be established around the perimeter of the project impact area. If CRF are found at or near the site and the applicant has previously obtained incidental take authorization from the USFWS for this species, then the applicant shall implement any conditions which are included with that authorization.</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.8-E. Potential Impacts to California Red-Legged Frog (CRF) – Vineyards Project:</u> No CRF were observed within the project area or Marsh Creek during surveys. However, the potential remains for CRF to be present during construction of the outfall or bridge crossing within Marsh Creek or during construction of the remainder of the project. As such, the proposed project could have a significant impact on the CRF. (Potentially Significant Impact).</p>	<p>If CRF are found at or near the site and the applicant has not obtained incidental take authorization from the USFWS for this species, then the observed frog(s) will be allowed to move naturally out of the construction zone. Once it is determined that CRF are not present in the construction zone, the construction zone will be cleared of vegetation and silt fencing buried six inches below ground surface will be installed between the construction zone and Marsh Creek to prevent CRF from moving back into the construction area. A qualified biologist will then survey the construction zone to confirm that no CRF are present. In addition, the applicant shall take appropriate measures to ensure that CRF are not affected by project activities. Such measures may include minimization of disturbance within the banks of the creek, minimization of construction and staging impacts within riparian habitat, additional pre-construction surveys for CRF, and periodic monitoring of the site for this species during construction.</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.8-F. Impacts to Western Pond Turtle – Vineyards Project:</u> The western pond turtle, federal species of Concern and California species of Special Concern, has a moderate potential to occur on the project impact area. If western pond</p>	<p><u>Mitigation 3.8-E2. California Red-legged Frog – Vineyards Project.</u> A qualified biologist will provide project contractors and construction crews with a worker-awareness program before any work within Marsh Creek or adjacent upland habitats that are appropriate for CRF. This program will be used to describe the species, its habits and habitats, its legal status and required protection, and all applicable mitigation measures. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.8-F. Impacts to Western Pond Turtle – Vineyards Project:</u> The western pond turtle, federal species of Concern and California species of Special Concern, has a moderate potential to occur on the project impact area. If western pond</p>	<p><u>Mitigation 3.8-F.1. Western Pond Turtle – Vineyards Project.</u> A qualified biologist will conduct pre-construction surveys for western pond turtles in all construction areas located within 300 feet of Marsh Creek or stock ponds. If a western pond turtle is found</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>turtles are found on the site, or if a nest is present on site, the project could have a significant impact. (Potentially Significant Impact).</p>	<p>during pre-construction surveys, it will be relocated as necessary to a location in Marsh Creek deemed suitable by the biologist (i.e., at a location in Marsh Creek which is a sufficient distance from construction activities). Because attempting to locate pond turtle nests will not result in a realistic probability of detection, if a western pond turtle is found in Marsh Creek adjacent to the site, exclusion fencing will be used to eliminate the possibility of nest establishment in uplands adjacent to that portion of Marsh Creek. This measure may be required for other species (see mitigation for <i>California red-legged frog</i>). (Less Than Significant Impact).</p>	
<p><u>IMPACT 3.8-F. Impacts to Western Pond Turtle – Vineyards Project:</u> The western pond turtle, federal species of Concern and California species of Special Concern, has a moderate potential to occur on the project impact area. If western pond turtles are found on the site, or if a nest is present on site, the project could have a significant impact. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.8-F.2. Western Pond Turtle – Vineyards Project.</u> A qualified biologist will provide project contractors and construction crews with a worker-awareness program before any work within Marsh Creek or adjacent upland habitats that are appropriate for western pond turtles. This program will be used to describe the species, its habits and habitats, its legal status and required protection, and all applicable mitigation measures. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.8-G. Potential Impacts to Tree Nesting Raptors – Vineyards Project.</u> White-tailed Kites, Golden Eagles, and other special-status raptor species may nest in, or in the vicinity of the project area. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.8-G1. Tree Nesting Raptors – Vineyards Project.</u> Demolition and construction should be scheduled, to the extent feasible, to avoid the nesting season, which extends from February through August. If it is not possible to schedule demolition and construction between September and January, then one of the following options (Mitigation 3.8-G2. or 3.8-G3.) shall be implemented.</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>AND</p> <p><u>Mitigation 3.8-G2. Tree Nesting Raptors – Vineyards Project.</u> Trees containing known or potential raptor nest sites may be removed during the non-breeding season to discourage future nesting attempts on the condition that no raptor pair is currently utilizing the nest site. Monitoring evidence that any nests in trees planned for early removal are unattended by reproductive-aged birds must be provided. Alternatively, Mitigation 3.8-G.3 may be used.</p> <p>OR</p> <p><u>Mitigation 3.8-G3. Tree Nesting Raptors – Vineyards Project.</u> Pre-construction surveys for nesting raptors shall be conducted by a qualified biologist to ensure that no raptor nests will be disturbed during project implementation. A pre-construction survey shall be conducted no more than 14 days prior to the initiation of demolition/construction activities during the early part of the breeding season (January through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). During this survey, a qualified biologist shall inspect all trees in and immediately adjacent to the impact areas for raptor nests. If an active raptor nest is found sufficiently close (as determined by the qualified biologist) to the construction area to be affected by these activities, the qualified biologist shall determine a construction-free buffer zone to be established around the nest.</p> <p>(Less Than Significant Impact).</p>	Less Than Significant Impact
<p><u>IMPACT 3.8-H. Impacts to Burrowing Owl – Vineyards Project:</u> Suitable foraging and nesting habitat was identified.</p>	<p><u>Mitigation 3.8-H.1. Burrowing Owl. – Vineyards Project.</u> Numbers and locations of burrowing owls will be periodically</p>	Less Than Significant Impact

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>and 9 Burrowing Owls were observed over-wintering on the site, in four different areas. One breeding pair was observed during the nesting season surveys in the area near pond 1 (Sycamore 2003b,f). Construction of the proposed project would result in loss of occupied over-wintering and nesting habitat for Burrowing Owls, and could result in nest destruction and adult mortality. (Significant Impact).</p>	<p>monitored until project implementation in order to determine the number and location of burrowing owls on the project site.</p>	<p>Impact</p>
<p><u>IMPACT 3.8-H. Impacts to Burrowing Owl – Vineyards Project:</u> Suitable foraging and nesting habitat was identified, and 9 Burrowing Owls were observed over-wintering on the site, in four different areas. One breeding pair was observed during the nesting season surveys in the area near pond 1 (Sycamore 2003b,f). Construction of the proposed project would result in loss of occupied over-wintering and nesting habitat for Burrowing Owls, and could result in nest destruction and adult mortality. (Significant Impact).</p>	<p><u>Mitigation 3.8-H.2. Burrowing Owl.– Vineyards Project.</u> The CDFG staff report (CDFG 1995) and current guidelines suggest that a minimum of 6.5 acres of replacement habitat (equal in quality, and occupied by Burrowing Owls) is required to mitigate the loss of habitat occupied by each owl (or nesting pair). Using the population that will be affected, as estimated from the additional surveys required by Mitigation H.1, habitat in the amount specified above shall be acquired, permanently protected, and enhanced through management for the benefit of the species, to compensate for the loss of Burrowing Owl habitat on the project site. The acquired, protected and enhanced lands shall be occupied Burrowing Owl habitat. Alternatively, the applicant can purchase the required acreage in an approved mitigation bank.</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.8-H. Impacts to Burrowing Owl – Vineyards Project:</u> Suitable foraging and nesting habitat was identified, and 9 Burrowing Owls were observed over-wintering on the site, in four different areas. One breeding pair was observed during the nesting season surveys in the area near pond 1 (Sycamore 2003b,f). Construction of the proposed project would result in loss of occupied over-wintering and nesting</p>	<p><u>Mitigation 3.8-H.3. Burrowing Owl. – Vineyards Project</u> Passive relocation techniques, following CDFG (1995) guidelines, involve the placement of one-way exclusion devices on occupied and potentially occupied burrows. This is done to 'evict' owls from sites, to preclude nest establishment and/or the probability of killing owls. However, because the property is 481 acres, and occupied by California ground squirrels which continually create new burrows,</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>habitat for Burrowing Owls, and could result in nest destruction and adult mortality. (Significant Impact).</p>	<p>monitoring of the owl population on site will be necessary in addition to implementation of this method.</p> <p>Given the size of this project, the applicant shall employ the following approach. Monitoring should be conducted at a level of effort appropriate to the season and apparent owl population to identify specific locations within the project site that are occupied by owls (<i>i.e.</i>, if initial observations detect numerous owls, more survey and monitoring effort is indicated. Conversely, a paucity of owl observations may indicate that little monitoring is required to achieve the requisite level of confidence that no owls will be harmed). Owls shall be excluded from all occupied burrows within the project area. Any owl eviction must be completed outside the Burrowing Owl breeding season.</p>	
<p><u>IMPACT 3.8-H. Impacts to Burrowing Owl – Vineyards Project:</u> Suitable foraging and nesting habitat was identified, and 9 Burrowing Owls were observed over-wintering on the site, in four different areas. One breeding pair was observed during the nesting season surveys in the area near pond 1 (Sycamore 2003b,f). Construction of the proposed project would result in loss of occupied over-wintering and nesting habitat for Burrowing Owls, and could result in nest destruction and adult mortality. (Significant Impact).</p>	<p><u>Mitigation 3.8-H.4. Burrowing Owl. – Vineyards Project.</u> Ground squirrels create and maintain burrows used by Burrowing Owls. However, as explained above, successfully excluding owls from large sites with extant squirrel populations, using only one-way doors, is difficult to implement with a reasonable probability of success. Accordingly, habitat management, in addition to passive eviction and monitoring will be used. In areas where construction is proposed during the nesting season (February – August), habitat management measures shall be performed</p> <p>outside of the nesting season designed to reduce burrow availability and habitat quality. This measure must be preceded by surveys (see Mitigations H.1 and H.3), to ensure that this activity does not result in loss of individual burrowing owls. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.8-I. Impacts to Swainson’s Hawk – Vineyards Project:</u> The dry-land on-site pasture provides suitable foraging habitat for Swainson’s Hawks. However due to the abundance of foraging habitat on the nearby State Park Land and available agricultural land in the vicinity, the loss of foraging habitat on this site would be considered Less Than Significant Impact. The large trees on the site and also along Marsh Creek provide potential nesting habitat. At least one active Swainson’s Hawk nest is known to occur within 5 miles (8.0 kilometers) of the project site (CNDDDB 2003) and a potential nest was identified during an overview survey conducted by H. T. Harvey & Associates during 2003. Given the abundance of similar potential nesting and foraging habitat locally and regionally, the loss of this habitat is considered less-than-significant. Loss of an occupied Swainson’s Hawk nest, however, would be considered a significant impact. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.8-I. Swainson’s Hawk. – Vineyards Project.</u> In order to ensure that nesting Swainson’s Hawks will not be affected by construction in the project area, a qualified biologist shall conduct pre-construction surveys. Survey Period I occurs from January 1 – March 20, Period II from March 20 – April 5, Period III from April 5 – April 20, Period IV from April 21 – June 10, and Period V is from June 10 – July 30. Three surveys shall be completed in at least each of the two survey periods immediately prior to a project’s initiation. If a nest site is found, then, similar to Mitigation Measures 3.8-G.2 and G.3, above, either of the following procedures must be followed:</p> <ol style="list-style-type: none"> 1. Trees containing known or potential raptor nest sites may be removed during the non-breeding season to discourage future nesting attempts on the condition that no Swainson’s Hawk pair is currently utilizing the nest site. Monitoring evidence that any nests in trees planned for early removal are unattended by reproductive-aged birds must be provided; or 2. If an active Swainson’s Hawk nest is found sufficiently close (as determined by the qualified biologist) to the construction area to be affected by construction activities, a qualified biologist shall determine the extent of a construction-free buffer zone to be established around the nest. <p>(Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.8-J. Nesting Special-Status Passerines – Vineyards Project:</u> Special-status passerine bird species including the Loggerhead Shrike, California Horned Lark, and California Yellow Warbler have the potential to nest in</p>	<p><u>Mitigation 3.8-J. Nesting Special-Status Passerines. – Vineyards Project.</u> If construction is to occur during the breeding season (February – August), pre-construction surveys in habitats appropriate for the Loggerhead Shrike, California Horned Lark, and</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>existing vegetation (trees and shrubs) and the California Horned Lark, a California Species of Special Concern, and the Loggerhead Shrike, a California Species of Special Concern and federal Species of Concern, have been observed on site. Construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. (Potentially Significant Impact).</p>	<p>California Yellow Warbler should be conducted by a qualified biologist no more than 15 days prior to the initiation of construction in any given area. Pre-construction surveys should be used to ensure that no nests will be disturbed during project implementation. If nests are found during these surveys, the preferred mitigation will be to determine whether the nest will become complete before the onset of construction activities. In this event, the nest will be allowed to remain undisturbed. Alternatively, if the status of the nest at the time of detection, coupled with the species' specific egg-laying, incubation, and chick-rearing interval indicates that the nest will not be completed prior to the onset of otherwise approved construction, arrangements will be made to transport the nest to a CDFG-approved wildlife rehabilitation facility. The nest will be protected by a construction and disturbance-free buffer of sufficient size until the eggs hatch. Following hatch and a sufficient interval for any chicks to become capable of self-thermoregulation, the entire nest and contents will be transported to the approved facility for rearing. (Less Than Significant Impact)</p>	
<p><u>IMPACT 3.8-K. Potential Impacts to Special-Status Bat Species – Vineyards Project:</u> Mature trees scattered in the project grassland and found along the banks of Marsh Creek provide potential roosting habitat for two special-status bat species that have a low potential to occur on site. Moreover, there is a low potential for pallid bat maternal colonies to occur within hollow trees on site. Removing large oaks that have cavities could potentially result in the direct loss of colonies, which would constitute a significant impact. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.8-K.1. Special-Status Bat Species – Vineyards Project.</u> A pre-demolition survey for roosting bats should be conducted prior to any removal of trees. The survey should be conducted by a qualified biologist (<i>i.e.</i>, a biologist holding a CDFG collection permit and a Memorandum of Understanding with CDFG allowing the biologist to handle and collect bats). No activities that would result in disturbance to active roosts would proceed prior to completion of the surveys. If no active roosts are found, then no further action would be warranted. If either a maternity roost or hibernacula is present, the following mitigation measure shall be implemented.</p>	<p>Less Than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.8-K. Potential Impacts to Special-Status Bat Species – Vineyards Project:</u> Mature trees scattered in the project grassland and found along the banks of Marsh Creek provide potential roosting habitat for two special-status bat species that have a low potential to occur on site. Moreover, there is a low potential for pallid bat maternal colonies to occur within hollow trees on site. Removing large oaks that have cavities could potentially result in the direct loss of colonies, which would constitute a significant impact. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.8-K.2. Special-Status Bat Species – Vineyards Project.</u> If active maternity roosts or hibernacula are found in trees which will be removed as part of project construction, demolition of that tree should commence before maternity colonies form (<i>i.e.</i>, prior to March 1) or after young are volant (flying) (<i>i.e.</i>, after July 31). Disturbance-free buffer zones as determined by a qualified bat biologist should be observed during the maternity roost season (March 1 - July 31).</p> <p>If a non-breeding bat hibernacula is found in a tree scheduled to be removed, the individuals should be safely evicted, under the direction of a qualified bat biologist (as determined by a Memorandum of Understanding with CDFG), by opening the roosting area to allow airflow through the cavity. Demolition should then follow at least one night after initial disturbance for airflow. This action should allow bats to leave during darkness, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight.</p> <p>Trees with roosts that need to be removed should first be disturbed at dusk, just prior to removal that same evening, to allow bats to escape during the darker hours.</p> <p>(Less Than Significant Impact)</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.8-L. Potential Impacts to San Joaquin Kit Fox – Vineyards Project:</u> The Vineyards project site is located in the extreme northern limit of the San Joaquin kit fox range, kit foxes are unlikely to be present on the site, and suitable kit</p>	<p><u>Mitigation 3.8-L. Potential Impacts to San Joaquin Kit Fox – Vineyards Project:</u> The project applicant will compensate for the loss of potential kit fox habitat and potential kit fox travel corridor on the subject property by, at a 1:1 ratio, (a) acquiring, preserving,</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>fox habitat and kit fox corridors will remain on the adjacent state parkland. Nevertheless, the loss of potential kit fox habitat and potential kit fox corridors due to project implementation is considered a potentially significant impact. (Potentially Significant Impact).</p>	<p>and enhancing through management for the benefit of the species habitat suitable for foraging, denning, and travel corridors by the San Joaquin kit fox; or (b) participation in the HCP/NCCP, once it becomes operational; or (c) acquisition of credits in an approved mitigation bank. Lands acquired independent from the NCCP/HCP should be primarily grasslands, and should be managed for the San Joaquin kit fox. (Less Than Significant Impact).</p>	
<p><u>IMPACT 3.8-M Potential Loss of Individual Kit Foxes – Vineyards Project</u>: Although kit foxes are expected to be absent from the project site, they could on rare occasions move through it. If transient individuals were harmed during construction of the Vineyards project, a significant impact would result. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.8-M. Potential Take of Kit Foxes – Vineyards Project</u>. The following mitigation measures would result in less than significant impacts to the potential loss of individual kit foxes during Vineyards project construction:</p> <ul style="list-style-type: none"> ❖ Pre-construction surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities for any project activity likely to impact the San Joaquin kit fox. If construction is phased, pre-construction surveys shall be conducted for each phase according to the timing and schedule stated above. ❖ An employee education program shall be conducted. A qualified biologist will provide project contractors and construction crews with a worker-awareness program before any grading or construction work occurs on the Vineyards project site. This program will be used to describe the species, its habits and habitats, its legal status and required protection, and all applicable mitigation measures. 	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> ❖ Project-related vehicles shall observe a 20-mph speed limit in the project area, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. ❖ To the extent practicable, nighttime construction shall be minimized. ❖ Off-road traffic outside of designated project areas shall be prohibited. ❖ To prevent inadvertent entrapment of kit foxes or other animals during the construction phases of the projects, all excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials or equipped with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. ❖ All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the Service has been consulted. If necessary, and under the direct supervision of a qualified biologist, the pipe may be moved once to remove it from the path of construction activity. 	

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.8-N.</u> Impacts to Species Identified as a Candidate, Sensitive, or Special-Status – Annexation Sites: Given the proximity of the Annexation Sites to the Vineyards project site, the similarity in many characteristics of these sites to the Vineyards project, and historical findings made by LSA in earlier studies, future development of one or both of the Annexation Sites could result in the disturbance or removal of sensitive species and could result in the loss of occupied or potential habitat for sensitive or special-status species. (Potentially Significant Impact).</p>	<p>❖ All food related trash items; such as wrappers, cans, bottles, and food scraps, shall be disposed of in a closed container and removed at least once a week from a construction or project site. (Less Than Significant Impact)</p>	
<p><u>IMPACT 3.8-O.</u> Loss of Alkali Meadow – Vineyards Project: Approximately 8.0 acres of alkali meadow occur along drainages and in the vicinity of ponds 1 and 2 on the project site. This habitat is recognized as a sensitive habitat by the CDFG (CNDDDB 2003). Construction of the proposed</p>	<p><u>Mitigation 3.8-N.</u> Impacts to Species Identified as a Candidate, Sensitive, or Special-Status – Annexation Sites : Prior to the approval or commencement of grading, the California Department of Parks and the CCCCD shall conduct site-specific biological resources surveys to determine the presence or absence of sensitive or special status species or occupied or potential habitat for sensitive or special status species on the sites. If it is determined that sensitive or special status species or occupied or potential habitat for sensitive or special status species occur on either site, then the State Department of Parks and/or the CCCCD (as relevant) shall require a qualified biologist to design mitigation for the site(s) similar to that of Mitigation Measures 3.8-A1., 3.8-A2., 3.8-C1., 3.8-C2., 3.8-D1., 3.8-D2., 3.8-E1., 3.8-E2., 3.8-F1., 3.8-F2., 3.8-G1., 3.8-G2., 3.8-H1., 3.8-H2., 3.8-H3., 3.8-H4., 3.8-I., 3.8-J., 3.8-K1., 3.8-K2., 3.8-L. and, 3.8-M., as identified for the Vineyards project. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.8-O.</u> Loss of Alkali Meadow – Vineyards Project: Approximately 8.0 acres of alkali meadow occur along drainages and in the vicinity of ponds 1 and 2 on the project site. This habitat is recognized as a sensitive habitat by the CDFG (CNDDDB 2003). Construction of the proposed</p>	<p><u>Mitigation 3.8-O.</u> Alkali Meadow – Vineyards Project: The project applicant will replace the loss of alkali meadow habitat at a 1:1 mitigation ratio, by acquiring, preserving, and enhancing through management (including among other measures, grazing control) existing alkali meadow habitat. Mitigation requirements may be met</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>project will result in loss of all alkali meadow habitat on the project site. (Significant Impact).</p>	<p>through the purchase and set aside of 8.0 acres of existing alkali meadow habitat within Contra Costa or surrounding counties or purchase of credits in an approved mitigation bank. (Less Than Significant Impact).</p>	
<p><u>IMPACT 3.8-P. Disturbance to Aquatic Habitat Due to Placement of the Outfall Structures – Vineyards Project:</u> Construction of the outfall structures for the detention basin and water quality basin may involve both the temporary and permanent removal of vegetation from the riparian corridor and the placement of rip-rap and/or concrete into the streambank and possibly into a portion of the streambed. Temporary impacts to Marsh Creek may also occur with construction of the outfall structures. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.8-P. Temporary impacts to Aquatic Habitat due to Construction of Outfall Structures:</u> Confine construction and placement of fill to avoid the live stream channel, and during construction, prevent soil, construction debris, sand, tree debris, cement and concrete, petroleum products or other organic matter from entering the live stream channel. Restore vegetation after completion of construction in the riparian corridor of Marsh Creek (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.8-Q. Loss of Great Valley Mixed Riparian Forest (Direct Impact Tree Removal) – Vineyards Project:</u> The construction of Fairview Avenue over Marsh Creek could result in the loss of up to 6 riparian trees, 4 valley oak and 2 large Fremont cottonwoods (total of 5,200 sq. ft. of riparian habitat) which would be considered a significant impact. (Significant Impact).</p>	<p><u>Mitigation 3.8-Q. Loss of Great Valley Mixed Riparian Forest – Vineyards Project.</u> The loss of trees and shrubs within the riparian corridor of Marsh Creek will be mitigated by habitat enhancement at a ratio of 3:1 (i.e., three acres of habitat enhancement for each acre of impact). Areas situated directly adjacent to the creek’s top-of-bank that currently support a mixture of non-native grasses and forbs will be used for enhancement via planting with native trees and shrubs. A qualified biologist, in coordination with the City, will determine the location of potential mitigation sites along Marsh Creek. A detailed riparian habitat enhancement plan will be prepared in consultation with a qualified biologist. This plan shall provide for the following:</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.8-R. Encroachment Upon the Great Valley Mixed Riparian Forest of Marsh Creek – Vineyards Project.</u> Development of the Vineyards project has been designed to avoid impacts to the riparian corridor along Marsh Creek. However, some Vineyards-specific development may occur within the 100-foot setback for which significant impacts would result. (Potentially Significant Impact).</p>	<ul style="list-style-type: none"> ❖ Compensation for lost acreage at a ratio of 3:1 (mitigation to impacts). ❖ Enhancement of areas adjacent to Marsh Creek currently supporting relatively low-quality riparian habitat. ❖ Tree replacement consistent with the typical City of Brentwood tree replacement ratios (see Impact 3.8-U). ❖ Development of a monitoring plan to track habitat enhancement. At a minimum, this shall provide for 75% survival at year 3 of all shrubs and trees. <p>(Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.8-S. Loss of Seasonal Wetland / Freshwater Marshes and Seeps – Vineyards Project.</u> Construction of the</p>	<p><u>Mitigation 3.8-R. Encroachment Upon the Great Valley Mixed Riparian Forest of Marsh Creek – Vineyards Project.</u> If encroachment into the riparian setback is necessary, then a commensurate amount of riparian habitat along Marsh Creek will be enhanced to compensate for the loss of habitat caused by the encroachment. Part of the enhancement area may be the restoration of the area previously affected by the ECCID irrigation canal. The ratio of enhancement habitat will vary depending upon the extent of encroachment into the 100 foot setback buffer: encroachment into the first 50% shall be mitigated at a ratio of 1:1 (mitigation:impacts); encroachment into the remaining 50% shall be mitigated at a ratio of 2:1 (mitigation:impacts). This mitigation shall adhere to the stipulations outlined in the direct impacts section above. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.8-S. Loss of Seasonal Wetland / Freshwater Marshes and Seeps – Vineyards Project.</u> Construction of the</p>	<p><u>Mitigation 3.8-S. Loss of Seasonal Wetland / Freshwater Marshes and Seeps – Vineyards Project. (Preservation/Enhancement of</u></p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>proposed project would result in the loss of approximately 0.21 acres of seasonal wetlands, 0.93 acres of ponds/freshwater marsh habitats, and approximately 2/4 acres of intermittent drainage habitat on the project site. However, mitigation has been provided for the loss of 0.21 acre of seasonal wetlands and 0.80 acre of ponds/freshwater marsh in Mitigation Measures 3.8-A.1 and 3.8-D.1, respectively. Therefore, the net impact would be the loss of 0.13 acres of ponds/freshwater marsh and 2.4 acres of intermittent drainage. (Significant Impact).</p>	<p><u>Existing Wetlands or Creation of Additional Wetlands</u>: The permanent loss of seasonal wetlands, freshwater marsh habitats will be mitigated by acquiring, preserving, and enhancing through management for the benefit of the species wetlands habitat at a ratio of 2:1 (mitigation:impacts). The mitigation will provide replacement of lost functions and values by creating wetlands within Contra Costa County or the adjacent counties, or by preserving and enhancing existing wetlands. If wetlands are created, then a detailed management and monitoring plan will be prepared in consultation with a qualified biologist, which will include plans for wetland creation, planting and maintenance plans, performance standards, and monitoring of constructed wetlands for a period of 5 years with the requirement that the site achieve 70% cover by wetland plant species by Year 5. Alternatively, the project applicant may mitigate for the loss of wetland habitat through the purchase of credits at a 2:1 ratio at an approved mitigation bank. (Less Than Significant Impact).</p>	<p>Impact</p>
<p><u>IMPACT 3.8-T. Impacts on Riparian Habitat or Other Sensitive Natural Communities – Annexation Sites</u>. Riparian Habitat or other sensitive natural communities were not identified on the Annexation Sites in historic biological resources reports. However, until site-specific biological resource assessments are made, potential improvements to the John Marsh Home or development of a community college could result in adverse effects to these resources. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.8-T. Impacts on Riparian Habitat or Other Sensitive Natural Communities – Annexation Sites (Determination of Site-Specific Resources)</u>: Prior to the approval or conduct of grading, the California Department of Parks and the CCCCD shall conduct site-specific biological surveys to determine the presence of absence of riparian habitat or other sensitive natural communities on the sites. If it is determined that special status plants occur on either site, then the State Department of Parks and/or the CCCCD (as relevant) shall require a qualified biologist to design mitigation for the site(s) similar to that of Mitigation Measure 3.8-O, 3.8-P, 3.8-R, or 3.8-S, as identified for the Vineyards project.</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation												
<p><u>IMPACT 3.8-U. Loss of Blue Oak and Valley Oak Trees within Annual Grassland – Vineyards Project.</u> Development of the Vineyards project would result in the loss of the majority of blue oak and valley oaks in the grasslands on the project site. These trees provide important habitat to many species of wildlife. Therefore, loss of these trees on the Vineyards project site is considered a significant impact. (Significant Impact).</p>	<p>(Less Than Significant Impact).</p> <p>If it is determined that riparian habitat or other sensitive natural communities do not occur one or both sites, then no further mitigation is required.</p> <p><u>Mitigation 3.8-U. Loss of Blue Oak and Valley Oak Trees within Annual Grassland (Replacement)– Vineyards Project.</u> The removal of blue oak and valley oak trees from the project site shall be mitigated using the following ratios:</p> <table border="1"> <caption>TABLE 3.8-1 TREE REPLACEMENT RATIOS</caption> <thead> <tr> <th>Tree Diameter (inches at 2 feet off grade)</th> <th>Replacement Quantity Required (for each tree removed)*</th> </tr> </thead> <tbody> <tr> <td><6</td> <td>1:1</td> </tr> <tr> <td>6-11</td> <td>2:1</td> </tr> <tr> <td>12-17</td> <td>3:1</td> </tr> <tr> <td>18-24</td> <td>4:1</td> </tr> <tr> <td>>24</td> <td>5:1</td> </tr> </tbody> </table> <p>(*) or equivalent as determined by the City of Brentwood</p> <p>A qualified biologist will determine the locations for tree plantings within natural open space areas near the project site as well as on-site, and will create a tree replacement plan. The conceptual development plans include several open spaces that will be utilized for these plantings. This tree protection plan shall provide for the following:</p>	Tree Diameter (inches at 2 feet off grade)	Replacement Quantity Required (for each tree removed)*	<6	1:1	6-11	2:1	12-17	3:1	18-24	4:1	>24	5:1	<p>Less Than Significant Impact</p>
Tree Diameter (inches at 2 feet off grade)	Replacement Quantity Required (for each tree removed)*													
<6	1:1													
6-11	2:1													
12-17	3:1													
18-24	4:1													
>24	5:1													

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.8-V. Loss of Blue Oak and Valley Oak Trees within Annual Grassland – (Annexation Sites).</u> Improvement plans that may be created for the John Marsh Home and development plans may be designed for the community college site that result in the removal of blue oak or valley oak trees. The removal of these trees could result in a significant impact. (Potentially Significant Impact).</p>	<ul style="list-style-type: none"> ❖ Replacement of removed trees at the ratios listed above. Plants shall be grown in containers as specified in the replacement plan. ❖ Locations of tree plantings within the development’s open spaces, or on appropriate location off site, with a complete analysis of the technical approach to installing the plantings. ❖ A detailed plan of the maintenance and monitoring of the plantings over a 5-year period. ❖ Plantings shall be in-kind, using locally collected plant materials. ❖ Planting, maintenance, and monitoring plans shall be prepared in consultation with a qualified biologist, landscape architect, or arborist. ❖ Plant success shall be monitored for a period of five years. At a minimum, survival should attain 70% at year 5. ❖ Monitoring reports shall be provided to the City of Brentwood. (Less Than Significant Impact) 	<p>Less Than Significant Impact</p>
<p><u>Mitigation 3.8-V. Loss of Blue Oak and Valley Oak Trees within Annual Grassland – Annexation Sites:</u> Prior to the approval or conduct of grading, the California Department of Parks and the CCCCD shall conduct site-specific biological surveys to determine the presence of absence of blue oak and valley oak trees within the development area on the sites. If it is determined that blue oak or valley oak trees occur within the development area on either site, and the blue oak or valley oak trees</p>		<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.8-W. Cumulative Biological Resources Impacts – Vineyards Project and Annexation Sites.</u> The Vineyards project and Annexation Sites could contribute to the cumulative loss of individuals of these special-status species, their habitat, and special-status natural communities resulting in potentially-significant cumulative impacts. The 2001 City of Brentwood General Plan Update EIR anticipated this level of development in SPA J, in the City’s Planning Area and in the region. The proposed Vineyards project and Annexation Sites are consistent with the General Plan Update and with the assumptions made in the EIR. The General Plan Update EIR found that with the imposition of mitigation measures, the impacts of General Plan Update buildout on loss of plant and wildlife habitat, special status species or habitat for such species; degradation of sensitive natural habitat communities; and loss of trees would be reduced to a level of less-than-significant. The proposed Vineyards project and Annexation Sites include all of the mitigation measures described in the General Plan Update EIR for these impacts. (Potentially Significant Impact).</p>	<p>cannot be avoided, then the State Department of Parks and/or the CCCCD (as relevant) shall require a qualified biologist to design mitigation for the site(s) similar to that of Mitigation Measure 3.8-U, as identified for the Vineyards project. (Less Than Significant Impact).</p>	
<p><u>IMPACT 3.8-W. Cumulative Biological Resources Impacts – Vineyards Project and Annexation Sites.</u> Implementation of mitigation measures listed above, including the mitigation measures identified in the 2001 General Plan Update EIR, would reduce the Vineyards project and Annexation Sites contributions to cumulative impacts to a less-than-significant level. (Less Than Significant Impact).</p>		<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
3.9 GEOLOGY, SOILS, SEISMICITY AND MINERAL RESOURCES		
<p><u>IMPACT 3.9-A. Adverse Effects From Rupture of a Known Fault - Vineyards Project:</u> Small segments of the Brentwood fault have been identified on the proposed Vineyards project site. The Brentwood fault is a near-vertical fault, which has not experienced movement in more than 50,000 years and is therefore not considered to be active. The potential for fault rupture does exist through a seismic event occurring on the Brentwood fault, but is considered to be low, or through sympathetic movement resulting from an event on another fault in the region. Development on the Vineyards project site would have a less than significant potential to expose people and structures to risks associated with fault rupture. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.9-A. Adverse Effects from Rupture of a Known Fault - Vineyards Project:</u> Development of the Vineyards project would have little potential for adverse effect from rupture of known faults and, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.9-B. Adverse Effects From Rupture of a Known Fault - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Such improvements would be unlikely to substantially expose people to and structures to risk associated with fault rupture. Potential development of a community college, however, would have the potential to expose people and/or structures to risks associated with fault rupture. These potential effects would</p>	<p><u>Mitigation 3.9-B.1 Adverse Effects From Rupture of a Known Fault - Annexation Sites:</u> Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. These potential improvements would result in less than significant impacts which do not require mitigation. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>result in a significant impact. (Potentially Significant Impact).</p> <p><u>IMPACT 3.9-B. Adverse Effects From Rupture of a Known Fault - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Such improvements would be unlikely to substantially expose people to and structures to risk associated with fault rupture. Potential development of a community college, however, would have the potential to expose people and/or structures to risks associated with fault rupture. These potential effects would result in a significant impact. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.9-B.2. Adverse Effects From Rupture of a Known Fault - Annexation Sites:</u> Potential development of a community college could result in potentially significant impacts with relation to adverse effects from fault rupture. These impacts would be reduced to a less than significant level with application of the following mitigation measure(s):</p> <ul style="list-style-type: none"> ❖ The Contra Costa Community College District will consult with a registered engineering geologist regarding the potential for fault rupture on the community college site. The location of any onsite faults shall be mapped and recommendations shall be made regarding the construction of any structures within 25 feet of any faults mapped onsite, if any. Any recommendations made by the engineering geologist shall be incorporated into the project's design and grading plans. (Less Than Significant Impact). 	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.9-C. Strong Seismic Ground-Shaking - Vineyards Project:</u> The potential exists that the Vineyards project site could be affected by ground shaking in the event of an earthquake in the Bay Area or San Joaquin Valley. Ground shaking could result in structural damage to on-site improvements (paving, utility lines, other property, etc.) and human injury. The potential for risks can be lessened through the application of seismic requirements of the Uniform Building Code. (Significant Impact).</p>	<p><u>Mitigation 3.9-C. Strong Seismic Ground-Shaking - Vineyards Project:</u> Prior to issuance of grading permits a qualified engineering geologist shall be retained to prepare a detailed geotechnical engineering design study for proposed building sites. Any recommended design and engineering solutions to ensure sufficient foundation stability shall be incorporated into the project's design plans. Prior to the issuance of the first building permit, the Brentwood Building Official shall verify that the project conforms to the seismic requirements stipulated in the Uniform Building Code</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.9-D. Strong Seismic Ground-Shaking - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Potential development of a community college, however, could expose people and/or structures to risks associated with strong seismic ground shaking. These potential effects would result in a significant impact. (Potentially Significant Impact).</p>	<p>(UBC) for Seismic Zone 4, the zone of highest seismic risk. (Less Than Significant Impact).</p> <p><u>Mitigation 3.9-D.1 Strong Seismic Ground-Shaking – Annexation Sites:</u> Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. In the event that a structure is proposed on the site, the following measure would minimize the potential that a significant impact would occur:</p> <ul style="list-style-type: none"> ❖ The California Department of Parks and Recreation will retain a qualified engineering geologist to prepare a detailed geotechnical engineering design study for proposed building sites on the community college site. Any recommended design and engineering solutions to ensure sufficient foundation stability shall be incorporated into the project’s design plans. (Less Than Significant Impact). 	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.9-D. Strong Seismic Ground-Shaking - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Potential development of a community college, however, could expose people and/or structures to risks associated with strong seismic ground shaking. These potential effects would result in a significant impact.</p>	<p><u>Mitigation 3.9-D.2. Strong Seismic Ground-Shaking – Annexation Sites:</u> Potential development of a community college would result in potentially significant impacts related to strong seismic ground shaking. These impacts would be reduced to a less than significant level with application of the following mitigation measure(s):</p> <ul style="list-style-type: none"> ❖ The Contra Costa Community College District will retain a qualified engineering geologist to prepare a detailed geotechnical engineering design study for proposed building sites on the community college site. Any recommended design and engineering solutions to ensure sufficient 	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>impact. (Potentially Significant Impact).</p>	<p>foundation stability shall be incorporated into the project's design plans. (Less Than Significant Impact).</p>	
<p><u>IMPACT 3.9-E. Ground Failure - Vineyards Project:</u> Due to the densities of the granular materials and the low groundwater levels encountered in the borings conducted on the Vineyards project site, the risk of liquefaction is considered to be low for the majority of the site. The potential for lateral spreading does exist on the hillside portion of the site. However, the potential would be negligible. Through adherence to the requirements of the UBC and strategies identified in detailed design studies this impact would be less than significant. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.9-E. Ground Failure - Vineyards Project:</u> The Vineyards project would have a less than significant impact with regard to ground failure and, therefore, no mitigation is required. However, Mitigation 3.9-C will further reduce this already less than significant impact. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.9-F. Ground Failure - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Such improvements are unlikely to result in adverse effects associated with liquefaction. Potential development of a community college, however, could potentially be susceptible to adverse effects associated with liquefaction. These potential effects could result in a significant impact. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.9-F.1 Ground Failure - Annexation Sites:</u> Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. These potential improvements would result in less than significant impacts that do not require mitigation. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.9-F. Ground Failure - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Such improvements are unlikely to result in adverse effects associated with liquefaction. Potential development of a community college, however, could potentially be susceptible to adverse effects associated with liquefaction. These potential effects could result in a significant impact. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.9-F.2. Ground Failure – Annexation Sites:</u> Potential development of a community college would result in potentially significant ground failure impacts. These impacts would be reduced to a less than significant level with application of the following mitigation measure(s):</p> <ul style="list-style-type: none"> ❖ The Contra Costa Community College District will perform site-specific detailed design studies to be prepared by a licensed engineering geologist for any development on the community college site. All recommendations the engineering geologist shall be incorporated in the proposed construction plan. The engineering geologist services shall be retained throughout site grading and s/he shall be contacted prior to grading and when onsite conditions necessitate deviations from the approved plan. The engineering geologist shall conduct assessments on a regular basis during site grading and initial construction phases. (Less Than Significant Impact). 	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.9-G. Soil Erosion & Loss of Topsoil - Vineyards Project:</u> None of the soils on which the proposed Vineyards project would be developed are highly erodible. However, given the extent of site grading, the potential exists for soil erosion and the loss of topsoil to occur on the Vineyards project. Compliance with existing City and State Water Resources Control Board requirements would prevent a significant impact from occurring. (Less Than Significant Impact).</p>	<p><u>Recommended Mitigation 3.9-G. Soil Erosion and Loss of Topsoil - Vineyards Project:</u> Compliance with existing laws and requirements of the City of Brentwood and the State Water Resources Control Board would prevent a significant impact from occurring and, therefore, no mitigation is necessary. To further prevent this less than significant impact it is recommended that the City include preparation of erosion and sediment control plans in its monitoring program for the Vineyards project. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.9-H. Soil Erosion & Loss of Topsoil - Annexation Sites:</u> Plans for development of a community</p>	<p><u>Mitigation 3.9-H. Soil Erosion and Loss of Topsoil – Annexation Sites:</u> Potential development of a community college or</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. Development of a potential community college would result in less than significant impacts to soil erosion and loss of topsoil because the site is relatively flat and the project would be required to receive approval of a Construction General Permit, which is intended to limit construction related erosion impacts. Improvements to the John Marsh Home would result in less than significant impacts to soil erosion and loss of topsoil because minimal improvements would be performed with the potential to result in significant erosion impacts. (Less Than Significant Impact).</p>	<p>improvements to the John Marsh Home would result in less than significant soil erosion and loss of topsoil impacts and, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Impact</p>
<p><u>IMPACT 3.9-J. Instability of Geologic Unit and/or Soil - Vineyards Project:</u> A number of active and inactive landslides have been identified on the proposed Vineyards project site. There is a relatively high likelihood that these landslide areas could experience future instability, however application of standard engineering practices and adherence to the UBC would sufficiently stabilize these areas and ensure that a less than significant impact occurs. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.9-J. Instability of Geologic Unit and/or Soil - Vineyards Project:</u> Compliance with existing laws would prevent a significant impact from occurring and, therefore, no mitigation is necessary. Implementation of Mitigation Measure 3.9-C would further prevent this less than significant impact. (Less Than Significant Impact)</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.9-J. Instability of Geologic Unit and/or Soil - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. Potential impacts associated with geologic unit and/or soil instability on the community college</p>	<p><u>Mitigation 3.9-J. Instability of Geologic Unit and/or Soil - Annexation Sites:</u> Potential development of a community college or improvements to the John Marsh Home would result in less than significant impacts with regard to geologic and/or soil unit instability and, therefore, no mitigation is required. However, Mitigation Measures 3.9-B.2 and 3.9-D.2 would further reduce this</p>	<p>Less Than Significant Impact</p>

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SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>site is expected to be less than significant as the site is relatively flat, no areas of instable geologic and/or soil units have been identified, and existing mitigation will further reduce the level of impact. Improvements to the John Marsh Home would result in less than significant impacts to geologic and/or soil instability because no areas of instable geologic and/or soil units have been identified. (Less Than Significant Impact).</p> <p><u>IMPACT 3.9-K. Expansive Soil – Vineyards Project:</u> Expansive soils have been identified on the proposed Vineyards project site and are known to occur throughout the region in areas with clayey soils and claystone bedrock. (Significant Impact)</p>	<p>already less than significant impact through preparation of site-specific geotechnical studies. (Less Than Significant Impact).</p> <p><u>Mitigation 3.9-K. Expansive Soil - Vineyards Project:</u> As required by the UBC, site-specific detailed design studies shall be prepared by a licensed engineering geologist and reviewed by the Brentwood Building Official prior to the issuance of grading permits for any development on the Vineyards at Marsh Creek project site. The evaluation of expansive soils and the formulation and implementation of design criteria for foundation and pavement design in expansive soils shall be addressed. Such criteria shall include one or more of the following:</p> <ul style="list-style-type: none"> ❖ Minimize the use of expansive soil as fill within upper portions of building pads. ❖ Compact expansive soil fill wetter than optimum moisture content. ❖ Extend shallow foundations below the zone of seasonal moisture fluctuations. ❖ Use deep foundations such as drilled piers, or stiff grid or mat foundations that can move without cracking, in areas of expansive soil or rock. 	<p>Less Than Significant Impact</p>

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SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.9-L. Expansive Soil - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Such improvements would not result in significant impacts associated with expansive soils. Potential development of a community college, however, would possibly result in development on expansive soils. These potential effects would result in a significant impact. (Potentially Significant Impact).</p>	<ul style="list-style-type: none"> ❖ Control site drainage to minimize seasonal wetting and drying of expansive materials. ❖ Provide non-expansive fill layers under foundations, slabs, and pavements. ❖ Treat expansive soils with lime or cement in the area of improvements to reduce the effects of expansive materials. <p>All recommendations of the Building Official, and the engineering geologist, shall be incorporated in the proposed construction plan, prior to approval of the grading permit. The engineering geologist services shall be retained throughout site grading and s/he shall be contacted prior to grading and when onsite conditions necessitate deviations from the approved plan. The engineering geologist shall conduct assessments on a regular basis during site grading and initial construction phases. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>Mitigation 3.9-L.1 Expansive Soil – Annexation Sites:</u> Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. These potential improvements would result in less than significant impacts that do not require mitigation. (Less Than Significant Impact).</p>		<p>Less Than Significant Impact</p>

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SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.9-L. Expansive Soil - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Such improvements would not result in significant impacts associated with expansive soils. Potential development of a community college, however, would possibly result in development on expansive soils. These potential effects would result in a significant impact. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.9-L.2. Expansive Soil – Annexation Sites:</u> Potential development of a community college would result in potentially significant impacts associated with risk to people and/or structures from development on expansive soils. These impacts would be reduced to a less than significant level with application of the following mitigation measure(s):</p> <ul style="list-style-type: none"> ❖ The Contra Costa Community College District shall perform site-specific detailed design studies that shall be prepared by a licensed engineering geologist as required by the Field Act. The evaluation of expansive soils and the formulation and implementation of design criteria for foundation and pavement design in expansive soils shall be addressed. Such criteria shall include one or more of the following: <ul style="list-style-type: none"> ▪ Minimize the use of expansive soil as fills within upper portions of building pads. ▪ Compact expansive soil fill wetter than optimum moisture content. ▪ Extend shallow foundations below the zone of seasonal moisture fluctuations. ▪ Use deep foundations such as drilled piers, or stiff grid or mat foundations that can move without cracking, in areas of expansive soil or rock. ▪ Control site drainage to minimize seasonal wetting and drying of expansive materials. ▪ Provide non-expansive fill layers under foundations, slabs, and pavements. 	<p>Less Than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.9-M. Loss of Known Mineral Resources - Vineyards Project:</u> The proposed Vineyards project would take place on a site containing Domingine Sandstone, which is identified by Contra Costa County and the United States Geological Survey as a significant mineral resource. Development of the proposed project would preclude the extraction of this Domingine Sandstone. (Significant Impact).</p>	<ul style="list-style-type: none"> ▪ Treat expansive soils with lime or cement in the area of improvements to reduce the effects of expansive materials. <p>All recommendations of the engineering geologist, shall be incorporated in the proposed construction plan. The engineering geologist services shall be retained throughout site grading and s/he shall be contacted prior to grading and when onsite conditions necessitate deviations from the approved plan. The engineering geologist shall conduct assessments on a regular basis during site grading and initial construction phases. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.9-M. Loss of Known Mineral Resources - Vineyards Project:</u> The proposed Vineyards project would take place on a site containing Domingine Sandstone, which is identified by Contra Costa County and the United States Geological Survey as a significant mineral resource. Development of the proposed project would preclude the extraction of this Domingine Sandstone. (Significant Impact).</p>	<p><u>Mitigation 3.9-M.1. Mineral Resources - Vineyards Project:</u> During site grading, the project proponent shall utilize to the extent feasible, onsite Domingine Sandstone resources in utility trenches and other areas as appropriate. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.9-M. Loss of Known Mineral Resources - Vineyards Project:</u> The proposed Vineyards project would take place on a site containing Domingine Sandstone, which is identified by Contra Costa County and the United States Geological Survey as a significant mineral resource. Development of the proposed project would preclude the extraction of this Domingine Sandstone. (Significant Impact).</p>	<p><u>Mitigation 3.9-M.2. Mineral Resources - Vineyards Project:</u> The project proponent shall ensure that properties located adjacent to undisturbed mineral resources include a statement in the deed informing the prospective buyer of the potential of future mining operations occurring in the vicinity. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.9-N. Mineral Resources – Annexation Sites:</u> The area of Domengine Sandstone does not extend to the John Marsh Home site or the community college site. No mineral resources have been identified on the two sites being considered for annexation, therefore a less than significant impact is anticipated. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.9-N. Mineral Resources – Annexation Sites:</u> No mineral resources have been identified on the John Marsh Home site or the community college site and, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.9-O. Conflict with Applicable Land Use Plans - Vineyards Project:</u> The proposed Vineyards project would be consistent with the goals and policies related to geology, soils, and seismicity contained in the Brentwood General Plan and would not impede or impair the implementation of said policies. (No Impact).</p>	<p><u>Mitigation 3.9-O. Conflict with Applicable Land Use Plans - Vineyards Project:</u> The proposed project would not result in any inconsistencies with the goals and policies of the applicable land use plans as they relate to geology, soils, and seismicity and, therefore, no mitigation is required. (No Impact).</p>	<p>No Impact</p>
<p><u>IMPACT 3.9-P. Conflict with Applicable Land Use Plans - Annexation Sites:</u> The proposed Annexation Sites would be consistent with the goals and policies related to geology, soils, and seismicity contained in the Brentwood General Plan and would not impede or impair the implementation of said policies. (No Impact).</p>	<p><u>Mitigation 3.9-P. Conflict with Applicable Land Use Plans - Annexation Sites:</u> The proposed annexation sites would not result in any inconsistencies with the goals and policies of the applicable land use plan as they relate to geology, soils, and seismicity, and therefore, no mitigation is required. (No Impact).</p>	<p>No Impact</p>
<p><u>IMPACT 3.9-Q. Cumulative Impacts – Loss of Known Mineral Resources:</u> The Vineyards project could preclude the extraction of Domengine Sandstone and could therefore contribute to cumulative impacts on this resource. (Potentially Significant Cumulative Impact).</p>	<p><u>Mitigation 3.9-Q. Cumulative Impacts – Loss of Known Mineral Resources:</u> The project-specific mitigation (see Mitigation Measures 3.9-M.1 and 3.9-M.2) would reduce the Vineyard project’s contribution to any cumulative impacts on Domengine Sandstone to a less than significant level. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.9-R. Cumulative Impacts – Other Geological Impacts:</u> Other geological impacts analyzed in this EIR (e.g., potential rupture of a known fault, seismic effects, ground failure, geologic instability, etc.) are site-specific, not cumulative, effects. (Less Than Significant Cumulative Impact).</p>	<p><u>Mitigation 3.9-R. Cumulative Impacts – Other Geological Impacts:</u> Impacts relating to soils and geologic hazards are site-specific in nature, therefore, no cumulative impacts are anticipated. The EIR contains project-specific mitigation in any event to reduce any contribution to geologic impacts to a less than significant level. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>
<p>3.10 HYDROLOGY, FLOODING, AND WATER QUALITY</p>		
<p><u>IMPACT 3.10-A. Changes in Drainage Patterns / Stormwater- Vineyards Project:</u> The proposed Vineyards project would incorporate a stormwater management system to regulate the rate and volume of runoff in a manner that avoids any significant drainage impacts. (Less Than Significant Impact).</p>	<p><u>Recommended Mitigation 3.10-A. Changes in Drainage Patterns/Stormwater - Vineyards Project:</u> The Vineyards project includes a stormwater management plan that would avoid significant drainage impacts; therefore, no mitigation is required. However, to minimize further the potential for a significant impact to occur, the following measure is recommended:</p> <p>Prior to the approval of grading permits, flood control permits, and/or drainage permits, the project proponent shall submit to the CCCFCWCD the following materials for review and approval:</p> <ul style="list-style-type: none"> ❖ A final hydrology study showing post-project peaks of downstream hydrographs; ❖ A geotechnical report of the proposed stormwater and water quality basins; ❖ Detailed design and construction plans of proposed water quality and detention basins; ❖ An Operations and Maintenance plan which addresses all aspects of basin maintenance including, but not limited to, prevention of sediment accumulation, vegetation management, 	<p>Less than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.10-B. Changes in Drainage Patterns / Stormwater - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These improvements are unlikely to result in significant drainage effects. Potential development of a community college, however, would result in development and site grading with the potential to alter drainage patterns in a manner that could result in on- or off-site flooding, erosion, or siltation. These potential effects would result in a significant impact. (Potentially Significant Impact).</p>	<p>access, structural maintenance, and monitoring plans. (Less Than Significant Impact).</p> <p><u>Mitigation 3.10-B.1 Changes in Drainage Patterns – Annexation Sites:</u> Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These potential improvements would result in less than significant impacts which do not require mitigation. (Less Than Significant Impact).</p>	<p>Less than Significant Impact</p>
<p><u>IMPACT 3.10-B. Changes in Drainage Patterns / Stormwater - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These improvements are unlikely to result in significant drainage effects. Potential development of a community college, however, would result in</p>	<p><u>Mitigation 3.10-B.2 Changes in Drainage Patterns – Annexation Sites:</u> Potential development of a community college would result in potentially substantial changes to the site’s drainage patterns that could have significant flooding, erosion, and/or siltation impacts. These impacts would be reduced to a less than significant level with application of the following mitigation measure(s):</p> <ul style="list-style-type: none"> ❖ The CCCCD shall conduct a project level environmental analysis of any development to occur on the community college site prior to initiation of site grading. 	<p>Less than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>development and site grading with the potential to alter drainage patterns in a manner that could result in on- or off-site flooding, erosion, or siltation. These potential effects would result in a significant impact. (Potentially Significant Impact).</p>	<p>❖ The CCCCD will coordinate with the CCCFCWCD during the project level environmental analysis to prepare a grading and drainage analysis that identifies any substantial increases in stormwater runoff volumes and rates and develop a plan that effectively controls stormwater runoff in a manner that avoids any on- or off-site flooding, erosion, and/or siltation impacts. The CCCCD shall contribute a fair share towards improvements of downstream drainage facilities prior to initiation of site grading. (Less Than Significant Impact).</p>	
<p><u>IMPACT 3.10-C. Exceed Water Quality Standards or Substantially Degrade Water Quality - Vineyards Project:</u> The proposed Vineyards project includes a stormwater quality plan that includes development of two water quality basins and site design features to maximize water quality protection. Project runoff into Marsh Creek would meet the treatment requirements of the RWQCB and would protect water quality throughout the life of the project. Compliance with the RWQCB stormwater management requirements and use of construction Best Management Practices would limit water quality impacts that could potentially occur during project construction. Preexisting water quality impacts associated with underground pipelines could be remediated through development of the project resulting in a beneficial impact. (Less Than Significant Impact).</p>	<p><u>Recommended Mitigation 3.10-C.1. Exceed Water Quality Standards or Substantially Degrade Water Quality - Vineyards Project:</u> Compliance with existing laws and requirements would result in a less-than-significant impact to water quality, and no mitigation is required. However, to minimize further the potential for a significant impact, the following mitigation is recommended.</p> <p>The project proponent shall implement, to the maximum extent feasible, the following non-structural BMPs, from the California Storm Water Best Management Practice Handbook.</p> <p>Throughout construction, the project proponent or assigned construction manager shall:</p> <ul style="list-style-type: none"> ❖ <i>Public Education/Participation</i> – Disseminate informational materials and possibly post signs informing guests of the natural resources downstream and the possibility of negative impacts associated with the use of the land. 	<p>Less than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.10-C. Exceed Water Quality Standards or Substantially Degrade Water Quality - Vineyards Project:</u> The proposed Vineyards project includes a stormwater quality plan that includes development of two water quality basins and site design features to maximize water quality protection. Project runoff into Marsh Creek would meet the treatment</p>	<ul style="list-style-type: none"> ❖ <i>Housekeeping Practices</i> – Clean up spills, practice proper disposal of certain substances and wise application of chemicals. ❖ <i>Material Storage Control</i> – Minimize the storage of hazardous materials on-site, store materials in designated areas, install secondary containment, conduct regular inspections, and train employees and subcontractors on proper handling and disposal of materials. ❖ <i>Vehicle Leak and Spill Control</i> – Maintain equipment and security vehicles. <p>Throughout the long-term operation of the project:</p> <ul style="list-style-type: none"> ❖ <i>Street Cleaning-</i> The responsible homeowners’ association or site manager shall conduct regular cleaning of paved areas, parking lots, streets, and access roads. ❖ <i>Contaminated or Erodible Surface Areas</i> – In the winery and commercial areas, the site manager shall prevent and reduce pollutants from contaminated or erodible surface areas by leaving as much vegetation on site as possible, minimizing soil exposure time, stabilizing exposed soils, and prevent storm water runoff and run-on. 	<p>Less than Significant Impact</p>
<p><u>IMPACT 3.10-C. Exceed Water Quality Standards or Substantially Degrade Water Quality - Vineyards Project:</u> The proposed Vineyards project includes a stormwater quality plan that includes development of two water quality basins and site design features to maximize water quality protection. Project runoff into Marsh Creek would meet the treatment</p>	<p><u>Recommended Mitigation 3.10-C.2. Exceed Water Quality Standards or Substantially Degrade Water Quality - Vineyards Project:</u> Prior to issuance of grading permits, the City of Brentwood shall verify that the project proponent has included proper measures during the site design to limit the mobilization of urban pollutants. Such measures shall include, but not be limited to, the following:</p>	<p>Less than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>requirements of the RWQCB and would protect water quality throughout the life of the project. Compliance with the RWQCB stormwater management requirements and use of construction Best Management Practices would limit water quality impacts that could potentially occur during project construction. Preexisting water quality impacts associated with underground pipelines could be remediated through development of the project resulting in a beneficial impact. (Less Than Significant Impact).</p>	<ul style="list-style-type: none"> ❖ <i>Reduced Street Widths</i>- The project proponent shall work with the City of Brentwood to construct the minimum street widths compatible with the safety of residents. ❖ <i>Residential Areas</i>: All residential lots shall be graded to drain to the front so that runoff from individual homes is routed through the storm drain system and to the water quality basins. Driveways shall also be constructed to minimum width necessary for achieving vehicle access and parking goals. ❖ <i>Trash Collection Areas</i>: In the non-residential areas, all trash collection areas shall be covered sufficiently to prevent rainfall from coming into contact with trash collection areas and mobilizing pollutants. Drainage from these areas shall be directed to the sanitary sewer system. ❖ <i>Storm Drain Inlets</i>: Mark all storm drain inlets and collection points with a message indicating that the inlets/collection points drain to Marsh Creek and that runoff can directly impair the receiving waters. (Less Than Significant Impact). 	
<p><u>IMPACT 3.10-D. Exceed Water Quality Standards or Substantially Degrade Water Quality - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. It is anticipated that development of a potential community college would result in less than significant impacts to water quality because compliance with the SWRCB's General Construction Permit requirements would protect water quality. Improvements to the John Marsh Home would result</p>	<p><u>Recommended Mitigation 3.10-D.1 Exceed Water Quality Standards or Substantially Degrade Water Quality – Annexation Sites:</u> The project proponent shall implement, to the extent feasible and applicable, the following non-structural BMPs, from the California Storm Water Best Management Practice Handbook.</p> <p>Throughout construction, the project proponent or assigned construction manager shall:</p> <ul style="list-style-type: none"> ❖ <i>Public Education/Participation</i> – Disseminate informational materials and possibly post signs informing guests of the 	<p>Less than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>in less than significant impacts to water quality because minimal improvements are contemplated and none would have the potential to substantially degrade water quality. (Less Than Significant Impact).</p>	<p>natural resources downstream and the possibility of negative impacts associated with the use of the land.</p> <ul style="list-style-type: none"> ❖ <i>Housekeeping Practices</i> – Clean up spills, practice proper disposal of certain substances and wise application of chemicals. ❖ <i>Material Storage Control</i> – Minimize the storage of hazardous materials on-site, store materials in designated areas, install secondary containment, conduct regular inspections, and train employees and subcontractors on proper handling and disposal of materials. ❖ <i>Vehicle Leak and Spill Control</i> – Maintain equipment and security vehicles. <p>Throughout the long-term operation of the project, the proponent or site manager shall:</p> <ul style="list-style-type: none"> ❖ <i>Street Cleaning</i>- Conduct regular cleaning of paved areas, parking lots, streets, and access roads. ❖ <i>Contaminated or Erodible Surface Areas</i> – Prevent and reduce pollutants from contaminated or erodible surface areas by leaving as much vegetation on site as possible, minimizing soil exposure time, stabilizing exposed soils, and prevent storm water runoff and run-on. 	<p>Less than Significant Impact</p>
<p>IMPACT 3.10-D. Exceed Water Quality Standards or Substantially Degrade Water Quality - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. It is</p>	<p><i>Recommended Mitigation 3.10-D.2. Exceed Water Quality Standards or Substantially Degrade Water Quality – Annexation Sites:</i> Prior to issuance of grading permits, the project proponent shall include proper measures during the site design to limit the mobilization of urban pollutants. Such measures shall include, but</p>	<p>Less than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>anticipated that development of a potential community college would result in less than significant impacts to water quality because compliance with the SWRCB's General Construction Permit requirements would protect water quality. Improvements to the John Marsh Home would result in less than significant impacts to water quality because minimal improvements are contemplated and none would have the potential to substantially degrade water quality. (Less Than Significant Impact).</p>	<p>not be limited to, the following:</p> <ul style="list-style-type: none"> ❖ <i>Trash Collection Areas:</i> All trash collection areas shall be covered sufficiently to prevent rainfall from coming into contact with trash collection areas and mobilizing pollutants. Drainage from these areas shall be directed to the sanitary sewer system. ❖ <i>Storm Drain Inlets:</i> Mark all storm drain inlets and collection points with a message indicating that the inlets/collection points drain to Marsh Creek and that runoff can directly impair the receiving waters. <p>(Less Than Significant Impact).</p>	
<p><u>IMPACT 3.10-E. Depletion of Groundwater or Interference of Recharge Resulting in a Net Deficit - Vineyards Project:</u> The proposed Vineyards project would not substantially deplete groundwater supplies or interfere with recharge. The Vineyards project would utilize municipal sources for its water supply. Development of the site has been anticipated in the City of Brentwood's Urban Water Management Plan (UWMP), which found that there has not been a substantial decrease in aquifer volumes from municipal groundwater pumping. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.10-E. Depletion of Groundwater or Interference of Recharge Resulting in a Net Deficit - Vineyards Project:</u> The proposed Vineyards project would not result in a substantial depletion of groundwater resources, or interfere substantially with groundwater recharge and, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less than Significant Impact</p>
<p><u>IMPACT 3.10-F. Depletion of Groundwater or Interference of Recharge Resulting in a Net Deficit - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in</p>	<p><u>Mitigation 3.10-F. Substantial Depletion of Groundwater or Interference of Recharge Resulting in a Net Deficit - Annexation Sites:</u> Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These improvements would not require substantial amounts of groundwater. Potential development of the College Site has been anticipated in the City of Brentwood's Urban Water Management Plan (UWMP) which found that there has not been a substantial decrease in aquifer volumes from municipal groundwater pumping. (Less Than Significant Impact).</p>	<p>improvements would not require substantial amounts of groundwater. Development of the community college site is included in the UWMP. Potential development of these sites would result in less than significant impacts, which do not require mitigation. (Less Than Significant Impact).</p>	
<p><u>IMPACT 3.10-G. Structures Within 100-Year Flood Hazard Areas or Within Dam Failure Inundation Zones - Vineyards Project:</u> The proposed Vineyards project would not result in significant impacts from structures within 100-year flood hazard areas or within dam failure inundation zones; therefore no mitigation is required. However, to minimize further the potential for a significant impact to occur, mitigation measure is recommended.</p> <p>The proposed Vineyards project site would not contribute to on- or off-site flooding and is located outside of the 100-year flood zone as mapped by FEMA. Portions of the commercial land use area would be located within the dam failure inundation boundary for Marsh Creek Dam, however, the site grading would result in grades in this area above the elevation of the mapped zone. (Less Than Significant Impact).</p>	<p><u>Recommended Mitigation 3.10-G. Structures Within 100-Year Flood Hazard Areas or Within Dam Failure Inundation Zones - Vineyards Project:</u> The proposed Vineyards project would not result in significant impacts from structures within 100-year flood hazard areas or within dam failure inundation zones; therefore no mitigation is required. However, to further minimize the potential for a significant impact to occur, the following mitigation measure is recommended.</p> <p>Prior to the issuance of grading permits, the City of Brentwood shall review the grading plans to verify that no structures are located within the mapped dam failure inundations zones or that no structures are constructed at an elevation below inundation levels. (Less Than Significant Impact).</p>	<p>Less than Significant Impact</p>
<p><u>IMPACT 3.10-H. Structures Within 100-Year Flood Hazard Areas or Within Dam Failure Inundation Zones - Annexation</u></p>	<p><u>Mitigation 3.10-H.1 Structures Within 100-Year Flood Hazard Areas or Within Dam Failure Inundation Zones – Annexation Sites:</u></p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. Potential development of a community college, however, could place structures in the flood inundation boundary in the event of failure of Marsh Creek dam. These potential effects could result in a significant impact. (Potentially Significant Impact).</p>	<p>Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These potential improvements would result in less than significant impacts which do not require mitigation. (Less Than Significant Impact).</p>	
<p><u>IMPACT 3.10-H. Structures Within 100-Year Flood Hazard Areas or Within Dam Failure Inundation Zones - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. Potential development of a community college, however, could place structures in the flood inundation boundary in the event of failure of Marsh Creek dam. These potential effects could result in a significant impact. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.10-H.2. Structures Within 100-Year Flood Hazard Areas or Within Dam Failure Inundation Zones – Annexation Sites:</u> Potential development of a community college would result in potentially significant impacts associated with placement of structures in a dam failure inundation zone. These impacts would be reduced to a less than significant level with application of the following mitigation measure(s):</p> <ul style="list-style-type: none"> ❖ Prior to initiation of site grading, the CCCCD shall conduct a project level environmental review. During the project level environmental review, impacts associated with potential failures of Marsh Creek Dam and the placement of structures within the inundation zone shall be assessed. ❖ The Contra Costa Community College District shall work with the CCCFCWCD during the site design to identify measures such as constructing building pads at an elevation that would limit flooding in the event of dam failure, or other measures as deemed appropriate by the CCCFCWCD. The CCCCD shall 	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.10-I. Cumulative Impacts – Substantial Changes in Drainage Patterns:</u> The proposed Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the Brentwood Planning Area, could result in significant cumulative drainage impacts in terms of flooding, erosion, sedimentation, and/or siltation. (Potentially Significant Cumulative Impact).</p>	<p>implement measures in the sites design to avoid risks associated with dam failure. (Less Than Significant Impact).</p> <p><u>Mitigation 3.10-I. Cumulative Impacts – Substantial Changes in Drainage Patterns:</u> Implementation of project-specific mitigation measures (see Mitigations 3.10-A, 3.10-B.1, and 3.10-B.2), would reduce the projects’ incremental contribution to cumulative drainage impacts to a less than significant level. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>
<p><u>IMPACT 3.10-J. Cumulative Impacts – Exceed Water Quality Standards or Substantially Degrade Water Quality:</u> The Vineyards project and the potential future development of the Annexation Sites would include stormwater quality protection to minimize water quality impacts; as a result, the incremental effect of the actions studied in this EIR to the cumulative water quality impacts caused by development throughout the watershed would not be cumulatively considerable and would therefore be less than significant. (Less Than Significant Cumulative Impact).</p>	<p><u>Mitigation 3.10-J. Cumulative Impacts – Exceed Water Quality Standards or Substantially Degrade Water Quality:</u> The incremental effects of the Vineyards project and the potential future development of the Annexation Sites on water quality are not cumulatively considerable and are therefore less than significant; therefore, no mitigation is required. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>
<p><u>IMPACT 3.10-K. Cumulative Impacts – Impacts on Groundwater Resources:</u> The proposed Vineyards project and the potential future development of the Annexation Sites, in combination with past, present, and probable future project in the Brentwood Planning Area would not substantially deplete groundwater supplies or substantially interfere with groundwater recharge. (Less Than Significant Cumulative</p>	<p><u>Mitigation 3.10-K. Cumulative Impacts – Impacts on Groundwater Resources:</u> No significant cumulative impacts to groundwater resources are anticipated and, therefore, no mitigation is required. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>

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SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>Impact).</p> <p><u>IMPACT 3.10-L. Cumulative Impacts – Flood Hazard/Dam Failure Impacts:</u> Impacts resulting from the placement of structures within flood or dam failure inundation zones are site-specific impacts, not cumulative impacts. (Less Than Significant Cumulative Impact).</p>	<p><u>Mitigation 3.10-L. Cumulative Impacts – Flood Hazard/Dam Failure Impacts:</u> Impacts resulting from the placement of structures within flood or dam failure inundation zones are site-specific impacts, not cumulative impacts; therefore, no mitigation is required. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>
<p>3.11 HAZARDS AND HAZARDOUS MATERIALS</p>		
<p><u>IMPACT 3.11-A. Use of Hazardous Materials – Vineyards Project:</u> Construction of the proposed Vineyards project would potentially require the use and transport of some hazardous materials in the form of petroleum-based fuels, fertilizers, paints and glues. An accidental spill or release of such materials could result in potentially significant impacts to construction workers, adjacent land uses, and the environment. However, standard construction practices are regulated by the Occupational Safety and Health Administration (OSHA) and supervised by a construction manager. Any materials released would be contained and cleaned up or remediated as required and monitored by local, state, and federal law. Residential and non-residential uses within the proposed Vineyards project would not create a significant hazard to the public or the environment through the routine use, transport, or disposal of hazardous materials. (Less Than Significant Impact).</p>	<p><u>Recommended Mitigation 3.11-A. Use of Hazardous Materials During Construction – Vineyards Project:</u> The proposed Vineyards project would not result in a significant impact associated with the use, transport or disposal of hazardous materials; therefore no mitigation is required. However, to further minimize the potential for a significant impact, the following mitigation measure is recommended:</p> <p>Procedures to be followed in the event of an accident shall be included on the contractor’s notes of all grading and construction plans. Inclusion of the procedures shall be verified by the City of Brentwood prior to the issuance of grading permits. In the event of a spill of hazardous materials (e.g., fuel leak, spill of paint or glue) used during project construction, the development team shall be responsible for the complete and immediate cleanup. The City of Brentwood Community Development Department shall be immediately notified, and shall verify satisfactory cleanup. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.11-B. Use of Hazardous Materials - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Construction would potentially require the use and transport of some hazardous materials in the form of petroleum-based fuels, fertilizers, paints and glues. An accidental spill or release of such materials could result in potentially significant impacts to construction workers, adjacent land uses, and the environment. However, standard construction practices are regulated by the Occupational Safety and Health Administration (OSHA) and supervised by a construction manager. Any materials released would be contained and cleaned up or remediated as required and monitored by local, state, and federal law. Potential development of a community college may include storage, use, and transport of small quantities of hazardous materials such as janitorial supplies/cleaning products, paints, solvents, and petroleum products. (Less Than Significant Impact).</p>	<p><u>Recommended Mitigation 3.11-B. Use of Hazardous Materials - Annexation Sites.</u> Potential future development of the Annexation Sites project would not result in a significant impact associated with the use, transport or disposal of hazardous materials; therefore no mitigation is required. However, to further minimize the potential for a significant impact, the following mitigation measure is recommended:</p> <p>Procedures to be followed in the event of an accident shall be included on the contractor’s notes of all grading and construction plans. Inclusion of the procedures shall be verified by the CCCC prior to the issuance of grading permits. In the event of a spill of hazardous materials (e.g., fuel leak, spill of paint or glue) used during project construction, and CCCC shall be responsible for the complete and immediate cleanup. During project operation, household and maintenance hazardous materials are not anticipated to be stored in quantities that would pose a significant environmental risk to human health. Additionally, these substances are required to follow strict local, state, and/or federal regulatory procedures for their use, storage, transport, and disposal, and therefore no significant impacts are anticipated to result from development or improvements to the Annexation Sites. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.11-C. Reasonably Foreseeable Upset and Accident Involving Hazardous Materials Release - Vineyards Project:</u> Project construction, including grading and drilling, could potentially result in accidental damage to underground petroleum and natural gas pipelines. Such damage could result in the release of hazardous materials into the</p>	<p><u>Mitigation 3.11-C. Reasonably Foreseeable Upset and Accident Involving Hazardous Materials Release - Vineyards Project.</u> Prior to the issuance of the first grading permit, the applicant will be required to obtain “as built” drawings or otherwise validate the location, size and depth of underground crude oil and natural gas pipelines. No construction shall occur within 10 feet of the</p>	<p>Less Than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>environment and related hazards. (Potentially Significant Impact).</p>	<p>pipelines, except for pipelines below new roadways. For these pipelines, the contractor shall employ safety and containment policies and procedures to avoid the potential of risk or upset of the pipelines. (Less Than Significant Impact).</p>	
<p><u>IMPACT 3.11-D. Reasonably Foreseeable Upset and Accident Involving Hazardous Materials Release - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. Extensive excavation is not anticipated to occur for the John Marsh Home. No pipelines are located on the community college site. Project construction, including grading and drilling, would not result in accidental damage to underground crude oil and natural gas pipelines. (Less Than Significant Impact).</p>	<p><u>Recommended Mitigation 3.11-D. Reasonably Foreseeable Upset and Accident Involving Hazardous Materials Release - Annexation Sites.</u> Future development of the Annexation Sites is not likely to result in accidental damage to underground crude oil or natural gas pipelines; therefore no mitigation is required. However, to further minimize the potential for a significant impact, the following mitigation measure is recommended: CCCCD will be required to obtain “as built” drawings or otherwise validate the location, size and depth of any underground pipelines, if present. No construction activities shall occur within 10 feet of the pipelines, except for pipelines below new roadways that are relocated according to an approved plan. Plans shall be developed such that development or construction on the Annexation Sites would not interfere with any pipelines. The contractor shall employ safety and containment policies and procedures to avoid the potential of risk or upset of the pipelines. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.11-E. Located on a Known Hazardous Materials Site - Vineyards Project:</u> One area of the Vineyards project site is known to be contaminated as a result of historic leaks or spills from underground pipelines that previously carried petroleum. Approximately 8,800 cubic feet of soils near the pipelines at the intersection of the future Fairview Avenue</p>	<p><u>Mitigation 3.11-E. Located on a Known Hazardous Materials Site - Vineyards Project.</u> Prior to grading of the site, a Site Remediation Plan will be prepared by a qualified geotechnical engineer or equivalent to address remediation of contaminated soils. The Site Remediation Plan will be submitted to the Contra Costa County Environmental Health, Hazardous Materials Division for approval.</p>	<p>Less Than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>extension and existing Concord Avenue are contaminated with toluene, ethyl benzene, xylenes, and TPH gasoline, diesel, kerosene, and motor oil. These contaminants would be disturbed during the relocation of the pipelines for the construction of the Fairview Avenue/John Muir Parkway intersection. Construction workers could be exposed to these contaminants, but it is unlikely that offsite residents would be exposed due to the nature of these contaminants. (Significant Impact).</p>	<p>The Site Remediation Plan will include procedures for remediation of the soils. Remediation could include, but is not limited to: 1) excavation of the contaminated soils and disposal at a Class 3 landfill; or 2) onsite treatment of soils using bioremediation techniques. In addition, a Soils Management Plan shall be prepared and shall contain measures to protect construction workers from potential exposure to contamination as well as measures to prevent offsite exposure to residents. Measures in the Soils Management Plan would include air monitoring during construction, protective clothing for any workers who would be in contact with contaminated soils, soil conditioning and/or procedures to stop work if indicated by monitoring.</p> <p>In addition, prior to grading of the site, a site characterization study shall be prepared by the developer to determine the extent, if any, of groundwater contamination. The findings of the site characterization shall be included in the Site Remediation Plan and submitted to the Contra Costa County Environmental Health Department, Hazardous Materials Division and the San Francisco Regional Water Quality Control Board (RWQCB) for approval. Since the Pipeline Assessment and the Pipeline Exploration activities were unable to determine a definite source of the releases, the project applicant shall work cooperatively with Potentially Responsible Parties and the County Department of Environmental Health and the RWQCB to address groundwater issues. The site characterization study may require the installation of monitoring wells, and remediation, if required, may include, but is not limited to, groundwater treatment or placement of a barrier to prevent further migration. (Less Than Significant Impact).</p>	

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.11-F. Located on a Known Hazardous Materials Site - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These potential activities would avoid pipeline areas on the John Marsh Home Site. Grading and construction activities conducted pursuant to potential development of a community college are unlikely to encounter contaminated soils and/or groundwater because there are no known pipelines under the college site. (Less Than Significant Impact).</p>	<p><u>Recommended Mitigation 3.11-F. Located on a Known Hazardous Materials Site - Annexation Sites.</u> Potential future development of the Annexation Sites would not be located on a known hazardous materials site; therefore no mitigation is required. However, to further minimize the potential for a significant impact, the following mitigation measure is recommended:</p> <p>Prior to any site improvement or grading activity, a Phase I Environmental Site Assessment shall be conducted for each site. The Phase I ESA will determine if historical uses of the sites indicate a potential for soil and/or groundwater contamination from hazardous materials. Any additional assessments or remediation that could be required would be based on the findings of the Phase I ESA. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.11-G. Impair or Interfere with Emergency Response Plans - Vineyards Project:</u> The City of Brentwood has an Emergency Operations Plan. The plan provides standard operating procedures for various emergencies that could occur in the City, such as earthquakes, fires, and floods. The proposed Vineyards project would not impair the implementation of or physically interfere with the Emergency Operations Plan. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.11-G. Impair or Interfere with Emergency Response Plans - Vineyards Project:</u> The proposed Vineyards project would result in a less than significant impact on any applicable emergency response plans and, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.11-H. Impair or Interfere with Emergency Response Plans - Annexation Sites:</u> The potential future improvements to the John Marsh Home, and potential development of a community college would not impair the implementation or physically interfere with the City of</p>	<p><u>Recommended Mitigation 3.11-H. Impair or Interfere with Emergency Response Plans - Annexation Sites:</u> Potential development of a community college or improvements to the John Marsh Home would result in a less than significant impacts on any applicable emergency response plans; therefore, no mitigation is</p>	<p>Less Than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>Brentwood’s Emergency Operations Plan. (Less Than Significant Impact).</p>	<p>required. However, to minimize the potential that plans would interfere with the City’s Emergency Operations Plan, it is recommended that State Parks Department and the CCCCDC coordinate with emergency response providers to ensure emergency routes would not be impaired. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.11-I. Exposure to Wildland Fires - Vineyards Project.</u> The State Park will develop a wildfire management plan for the new park and is currently maintaining existing fire breaks and onsite roads for use by emergency vehicles and to act as additional fire breaks. State Parks has notified the Department of Forestry that the new park has been formed, since they are mandated to provide fire suppression of the park. The Vineyards project would develop an on-site fire break between the project and the state park (also for maintenance vehicles, drainage and other uses), which would be maintained by the Homeowners Association or CFD. Residences will include sprinkler systems in each home. This combination of fire prevention and suppression components would result in less than significant wildland fire impacts. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.11-I. Exposure to Wildland Fires – Vineyards Project:</u> The Vineyards project would result in less than significant wildland fire impacts and, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.11-J. Exposure to Wildland Fires – Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. The John Marsh Home and community college sites are currently exposed to wildfires that may occur in the State Park and open space areas. Although no uses currently exist on the community college site, Marsh Creek Road</p>	<p><u>Mitigation 3.11-J.1. Exposure to Wildland Fires – Annexation Sites.</u> Potential development of a community college or improvements to the John Marsh Home would result in less than significant wildland fire impacts and, therefore, no mitigation is required. However, to further minimize the potential for a significant impact to occur, the following measures are recommended:</p>	<p>Less Than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>provides an existing fire break on the west side of the community college site and the future Highway 4 Bypass will provide a fire break around the community college site to the north and northeast. As part of the State Park system, the John Marsh Home will be included in a wildfire management plan prepared for the new park and is currently maintaining existing fire breaks and onsite roads for use by emergency vehicles and to act as additional fire breaks. State Parks has notified the Department of Forestry that the new park has been formed, since they are mandated to provide fire suppression assistance to the park. (Less Than Significant Impact).</p>	<p><u>Recommended Mitigation 3.11-J.2. Maintain Acceptable Fire Response Service - Annexation Sites.</u> The CCCCD will coordinate any plans developed for a new community college with the ECCFPD to determine if they can provide services within adequate response times from then-current existing facilities.</p> <p>If the ECCFPD determines that a new fire station is required to serve the community college, the CCCCD shall work with the ECCFPD and the City of Brentwood to assist with the provision of a site for a new station. Furthermore, the City of Brentwood shall review the new fire station site in accordance with the California Environmental Quality Act (CEQA) to determine if significant impacts would occur. Should it be determined through the CEQA review that significant impacts of a new fire station would result in significant impacts, mitigation measures will be required. (Less Than Significant Impact).</p>	
<p><u>IMPACT 3.11-K. General Plan Consistency Regarding Safety Element - Vineyards Project:</u> The proposed Vineyards project would be consistent with the General Plans Safety Element policies regarding hazards associated with the use, transport, treatment, and disposal of hazardous substance, and would result in a less than significant impact. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.11-K. General Plan Consistency Regarding Safety Element - Vineyards Project:</u> The proposed Vineyards project would not result in any inconsistencies with the goals and policies of the General Plan applicable to hazards associated with the use, transport, treatment, and disposal of hazardous substances and therefore no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.11-L. General Plan Consistency Regarding Safety Element - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. The proposed Annexation Sites</p>	<p><u>Mitigation 3.11-L. General Plan Consistency Regarding Safety Element - Annexation Sites:</u> The Annexation Sites would not result in any inconsistencies with the goals and policies of the General Plan applicable to hazards associated with the use, transport, treatment, and disposal of hazardous substances and therefore no</p>	<p>Less Than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>would be consistent with the General Plan Safety Element policies from hazards associated with the use, transport, treatment, and disposal of hazardous substance, and would result in a less than significant impact. (Less Than Significant Impact).</p>	<p>mitigation is required. (Less Than Significant Impact).</p>	
<p><u>IMPACT 3.11-M. Cumulative Impacts – Hazardous Materials:</u> The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in Brentwood, would have the potential to cause significant cumulative impacts to public health and safety resulting from the use, handling and transport of hazardous materials. (Potentially Significant Cumulative Impact).</p>	<p><u>Mitigation 3.11-M. Cumulative Impacts – Hazardous Materials:</u> Through compliance with federal, state, and local requirements pertaining to hazardous materials, and through the implementation of Mitigation 3.11-C, any contribution of the Vineyards project and the potential future development of the Annexation Sites to potential cumulative hazardous materials impacts would be less than significant. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>
<p><u>IMPACT 3.11-N. Cumulative Impacts – Other Hazard Impacts:</u> Other hazard impacts (e.g. location on a contaminated site, exposure to wildland fires) are site-specific impacts, not cumulative impacts. (Less Than Significant Cumulative Impact).</p>	<p><u>Mitigation 3.11-N. Cumulative Impacts – Other Hazard Impacts:</u> These are site-specific impacts, not cumulative impacts; therefore, no mitigation is required. (Less Than Significant Cumulative Impact).</p>	
<p>3.12 CULTURAL AND HISTORIC RESOURCES</p>		
<p><u>IMPACT 3.12-A. Substantial Adverse Change in the Significance of Archaeological Site CCO-548 - Vineyards Project:</u> The construction of the proposed Vineyards project would involve grading and construction activities within the mapped boundaries of a significant archaeological resource (CA-CCO-548). Disturbance to this resource would result in</p>	<p><u>Mitigation 3.12-A. Substantial Adverse Change in the Significance of Archaeological Site CCO-548 - Vineyards Project:</u> Prior to the construction of the Village Center area, the proposed Marsh Creek Trail Segment, and other improvements and construction activities within the southeastern section of the Vineyards site, a program to mitigate impacts to CCO-548 shall be developed and implemented.</p>	<p>Less Than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>a significant impact. (Significant Impact).</p>	<p>The mitigation program shall include (but not be limited to) the following actions:</p> <ul style="list-style-type: none"> ❖ Avoidance: Consultation with a qualified archaeologist during design of projects in the vicinity of CCO-548. To the extent feasible, construction activity shall avoid resources within CCO-548. ❖ Controlled Data Recovery: If avoidance of resources in CCO-548 is not feasible, a qualified archaeologist shall conduct controlled data recovery of resources. Resources shall be catalogued and analyzed and a final report of findings of mitigation data shall be submitted to the Northwest Information Center to demonstrate that mitigation has been completed. ❖ Archaeological Monitoring/Recordation/Removal: A qualified archaeologist shall monitor all construction related grading and earthmoving activities in the southeastern portion of the Vineyards site. If cultural resources are encountered during construction, all work within the vicinity of the find shall stop immediately. The cultural resource shall be identified, recorded, and/or removed by a qualified archaeologist before grading and trenching activities can recommence in the area of discovery. ❖ If any human remains are discovered, all work within the vicinity of the discovery shall stop immediately and the County Coroner will be notified. ❖ Human remains that are encountered shall be sensitively treated under the professional guidance of a qualified archaeologist. Any human remains that are identified in areas 	

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.12-B. Substantial Adverse Change in the Significance of Archaeological Resources - Annexation Sites:</u> Approval of proposed general plan amendments and annexations of the John Marsh Home and the Contra Costa Community College site could allow for the future improvements to the John Marsh Home and development of a new community college. However, no improvement/development plans currently exist to determine the extent of potential impacts to cultural resources. Nonetheless, annexation of the sites and approval of general plan amendments may indirectly result in significant impacts to historic and/or archaeological resources on these sites. (Potentially Significant Impact).</p>	<p>that will be impacted by construction activities shall be exposed utilizing standard archaeological procedures. All skeletal material and associated grave goods shall be carefully removed for reburial in an area as close to their original location as possible. This area shall be protected from future disturbance. Burial inventories shall be completed and made available for inspection at the completion of burial removal. (Less Than Significant Impact)</p>	<p>Less Than Significant Impact</p>
<p><u>Mitigation 3.12-B.1. Substantial Adverse Change in the Significance of Archaeological Resources – John Marsh Home:</u> Prior to the approval of any site improvement plans for the John Marsh Home, the California Department of Parks and Recreation (CDPR) shall require a cultural resource analysis of the site. The inventory and analysis shall include a review of available records from the Northwest Information Center at Sonoma State University and field surveys. Subsurface presence/absence exploration shall be conducted on any portion of the site on which new construction is proposed and that has been determined to have potential archaeological resources. If the subsurface explorations determine the need for additional archaeological testing and analysis to determine the significance of identified resource, then a detailed subsurface excavation program shall be developed and implemented by a qualified archaeologist. All discoveries shall be accurately mapped, recorded, and analyzed. If significant archaeological resources are found at the site, future improvements to the property shall be located and designed to avoid or minimize impacts to these resources to the extent feasible. If avoidance is not feasible, and if data recovery through excavation is</p>	<p>that will be impacted by construction activities shall be exposed utilizing standard archaeological procedures. All skeletal material and associated grave goods shall be carefully removed for reburial in an area as close to their original location as possible. This area shall be protected from future disturbance. Burial inventories shall be completed and made available for inspection at the completion of burial removal. (Less Than Significant Impact)</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.12-B. Substantial Adverse Change in the Significance of Archaeological Resources - Annexation Sites:</u> Approval of proposed general plan amendments and annexations of the John Marsh Home and the Contra Costa Community College site could allow for the future improvements to the John Marsh Home and development of a new community college. However, no improvement/development plans currently exist to determine the extent of potential impacts to cultural resources. Nonetheless, annexation of the sites and approval of general plan amendments may indirectly result in significant impacts to historic and/or archaeological resources on these sites. (Potentially Significant Impact).</p>	<p>the only feasible mitigation for impacts to such resources, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared, approved and adopted by the CDPR prior to any construction activities. The recovered information shall be deposited with the Northwest Information Center at Sonoma State University. (Less than Significant Impact).</p> <p><u>Mitigation 3.12-B.2 Substantial Adverse Change in the Significance of Archaeological Resources – Community College Site:</u> Prior to approval of a development plan for a community college, the Contra Costa Community College District (CCCCD) shall require a cultural resource inventory and analysis of the site. The inventory and analysis shall include a review of available records from the Northwest Information Center at Sonoma State University and field surveys. If preliminary research indicates the potential for archaeological resources, CCCCCD shall require a program of mechanical subsurface presence/absence testing within the construction areas for the campus. If the subsurface explorations determine the need for additional archaeological testing and analysis to determine the extent and significance of resources, then a detailed subsurface excavation program shall be developed and implemented by a qualified archaeologist. All discoveries shall be accurately mapped, recorded, and analyzed.</p> <p>If significant archaeological resources are found at the site, future improvements to the property shall be located and designed to avoid or minimize impacts to these resources. If avoidance is not possible, and if data recovery through excavation is the only feasible mitigation for impacts to such resources, a data recovery plan, which</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.12-C. Substantial Adverse Change in the Significance of An Historic Resource (CCO-675H) – Vineyards Project:</u> A cement irrigation canal (CCO-675H) was identified on the Vineyards project site in an earlier study conducted by William Self Associates. Current information indicates that this resource is commonly found throughout Contra Costa County and is not, therefore, considered a significant historical resource. (Less Than Significant Impact).</p>	<p>makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared, approved and adopted by CCCCDD prior to any construction activities. The recovered information shall be deposited with the Northwest Information Center at Sonoma State University. (Less Than Significant Impact)</p>	
<p><u>IMPACT 3.12-D. Substantial Adverse Change in the Significance of An Historic Resource (CCO-667H) – Vineyards Project:</u> An old well, windmill, and associated materials (CCO-667H) are located on the Vineyards project site. These resources would be demolished to construct the proposed project. However, these structures are not considered significant historical resources. (Less Than Significant Impact).</p>	<p><u>Recommended Mitigation 3.12-C. Substantial Adverse Change in the Significance of An Historic Resource (CCO-675H) – Vineyards Project:</u> Supplemental archival and photo recordation of resources shall be conducted prior to issuance of grading permits. The documentation shall be submitted to Northwest Information Center at Sonoma State University. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.12-D. Substantial Adverse Change in the Significance of An Historic Resource (CCO-667H) – Vineyards Project:</u> An old well, windmill, and associated materials (CCO-667H) are located on the Vineyards project site. These resources would be demolished to construct the proposed project. However, these structures are not considered significant historical resources. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.12-D. Substantial Adverse Change in the Significance of An Historic Resource (CCO-667H) – Vineyards Project:</u> The well and windmill on the Vineyards project site are not significant; therefore no mitigation is required. (Less Than Significant Impact)</p>	<p>Less Than Significant Impact</p>

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SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.12-E. Substantial Change in the Significance of An Historic Resources - Annexation Sites:</u> Potential future improvements to the Marsh House annexation area (e.g., restoration of the house and the addition of a new parking area) would have the potential to benefit the preservation and educational experience of historic resources in the area. (Potentially Beneficial Impact)</p>	<p><u>Mitigation 3.12-E. Substantial Change in the Significance of An Historic Resources - Annexation Sites:</u> Potential improvements to the John Marsh Home would result in beneficial impacts to historic resources in the community and, therefore, no mitigation is required. (Potentially Beneficial Impact).</p>	<p>Potentially Beneficial Impact</p>
<p><u>IMPACT 3.12-F. Destroy Unique Paleontological Resource or Site – Vineyards Project.</u> Existing records for the Vineyards site have not indicated paleontological resources on the Vineyards site and no such resources were indicated during subsurface investigations on the southern portion of the Vineyards site. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.12-F. Destroy Unique Paleontological Resource or Site – Vineyards Project.</u> The Vineyards project would not result in significant impacts to unique paleontological resources; therefore no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.12-G. Destroy Unique Paleontological Resource or Site – Annexation Sites.</u> While no known unique paleontological resources exist on the Annexation Sites, future development of the sites have the potential to results in adverse effects to paleontological resources. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.12-G. Destroy Unique Paleontological Resource or Site – Annexation Sites.</u> Prior to the approval of grading permits for either the John Marsh Home or the community college, a records search for paleontological resources shall be conducted by the California Department of Parks and Recreation for the John Marsh Home, and the CCCCD for the community college site.</p> <p>If records indicate that potential resources exist in the vicinity of planned grading areas for either the John Marsh Home or the community college, then subsurface investigation shall be conducted to determine the presence or absence of paleontological resources.</p> <p>If it is determined that paleontological resources are present in areas that would be potentially graded by either project, then controlled data recovery shall be conducted prior to any grading the vicinity of</p>	<p>Less Than Significant Impact</p>

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SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.12-H. Undiscovered or Unknown Resources – Vineyards Project:</u> Given the nature of the site, it is possible that previously undiscovered or unknown sites could be uncovered during construction of the project. (Potentially Significant Impact)</p>	<p>the resource. Resources shall be catalogued and analyzed. A final report of findings of mitigation data shall be prepared and recorded. (Less Than Significant Impact).</p> <p><u>Mitigation 3.12-H. Undiscovered or Unknown Resources – Vineyards Project.</u> In the event that prehistoric traces are encountered during construction (human remains, artifacts, or concentrations of shell, bone, rock, or ash), all construction within a 50-meter radius of the find shall be stopped immediately. The City of Brentwood shall be notified, and an archaeologist shall be retained to examine the find and make appropriate recommendations.</p> <p>If human remains are discovered, the County Coroner shall be immediately notified. There would be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the conditions specified in Section 15064.5(e) of the CEQA Guidelines are satisfied. In particular, if the coroner determines that the remains are Native American and not subject to County authority, the Coroner shall notify the Native American Heritage Commission, which shall attempt to identify descendants of the deceased Native American. The descendants shall then have an opportunity to make recommendations regarding the treatment or disposal of the remains.</p> <p>If the City of Brentwood and the archaeologist determine that the archaeological find is a significant historical resource, the resource will be avoided and preserved in place if possible. If avoidance is not possible, and if data recovery through excavation is the only feasible mitigation for impacts to such resources, a data recovery</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.12-1. Disturbance to any Human Remains – Annexation Sites:</u> Given the nature of the Annexation Sites, it is possible that undiscovered or unknown human remains could be uncovered during construction of any future development. (Potentially Significant Impact).</p>	<p>plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared, approved and adopted by the City prior to any excavation being undertaken. The recovered information will be deposited with the Northwest Information Center at Sonoma State University.</p> <p>These measures shall be described on the Contractor’s notes of all applicable plans. Inclusion of these measures shall be verified by the City of Brentwood Community Development Department prior to the issuance of grading permits. (Less Than Significant Impact)</p>	
<p><u>IMPACT 3.12-1. Disturbance to any Human Remains – Annexation Sites:</u> A qualified archaeologist shall monitor all future grading and earthmoving activities within the Annexation Sites. In the event that prehistoric traces are encountered during construction (human remains, artifacts, or concentrations of shell, bone, rock, or ash), all construction within a 50-meter radius of the find shall be stopped immediately, the CDPR notified (for finds on the John Marsh Home site) and/or the CCCCD notified (for finds on the community college site), and an archaeologist retained to examine the find and make appropriate recommendations.</p> <p>If human remains are discovered, the County Coroner shall be immediately notified. There would be no further excavation or disturbance of the site or any nearby area reasonable suspected to overlie adjacent human remains until the conditions specified in Section 15064.5(e) of the CEQA Guidelines are satisfied. In particular, if the coroner determines that the remains are Native American and not subject to County authority, the Coroner would notify the Native American Heritage Commission, which would</p>		<p>Less Than Significant Impact</p>

**TABLE S.1
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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.12-J. Cumulative Impacts – Historical, Archeological, and Paleontological Resources:</u> No cumulative impacts are anticipated because impacts to these resources are site-specific. (Less Than Significant Cumulative Impact).</p>	<p>attempt to identify descendants of the deceased Native American. The descendants would then have an opportunity to make recommendations regarding the treatment or disposal of the remains.</p> <p>If the CDPR and/or the CCCCDC determine that the archaeological find is a significant historical resource, the resource will be avoided and preserved in place if possible. If avoidance is not possible, and if data recovery through excavation is the only feasible mitigation for impacts to such resources, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared, approved and adopted by the CDPR and/or CCCCDC prior to any excavation being undertaken. The recovered information will be deposited with the Northwest Information Center at Sonoma State University.</p> <p>These measures shall be described on the Contractor’s notes of all applicable development plans. Inclusion of these measures shall be verified by the CDPR and CCCCDC prior to the issuance of grading permits. (Less Than Significant Impact)</p>	<p>Less Than Significant Cumulative Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
3.13 PUBLIC SERVICES		
<p><u>IMPACT 3.13-A. Change in Governmental Facilities to Maintain Acceptable Fire and Emergency Medical Response Services - Vineyards Project:</u> The proposed Vineyards project would increase the demand for fire and first-response emergency medical services. Only two percent of 2002 calls to the East Contra Costa Fire Protection District (ECCFPD) were for structural and non-structural fires. Seventy-eight of the calls were for emergency medical response. All of the Vineyards project site can be reached from Fire Station # 52 within a 4-minute driving time. The East Contra Costa Fire Protection District (ECCFPD) has adequate facilities to serve the proposed project within an acceptable response drive time and no new facilities would be required. (Less Than Significant Impact).</p>	<p><u>Recommended Mitigation Measure 3.13-A.1. Maintain Acceptable Fire And Emergency Medical Response Services – Vineyards project:</u> Although a fire station is not required pursuant to this CEQA analysis, the proposed Vineyards project has identified three alternative sites (approximately 1 acre each) for the future development of one fire station. These three alternative sites are located: 1) in the Village Center, 2) on the southeast corner of Fairview Avenue and the Realigned Concord Avenue, and 3) on the east side of Fairview Avenue, south of the ECCID canal. An offer of dedication will be made to the ECCFPD to exercise on one of these sites. The offer will expire at the end of five years. If, at the end of five years, the ECCFPD has not begun construction of a new fire station on the selected site, the offer will terminate. In addition, the Vineyards Project would construct an EMS station. The offer of a one-acre site for a future fire station and construction of an EMS station would reduce impacts to a less than significant level. (Less than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.13-A. Change in Governmental Facilities to Maintain Acceptable Fire and Emergency Medical Response Services - Vineyards Project:</u> The proposed Vineyards project would increase the demand for fire and first-response emergency medical services. Only two percent of 2002 calls to the East Contra Costa Fire Protection District (ECCFPD) were for structural and non-structural fires. Seventy-eight of the calls were for emergency medical response. All of the Vineyards project site can be reached from Fire Station # 52</p>	<p><u>Recommended Mitigation 3.13-A.2. Reduce On-site Delays in Providing Fire and Emergency Medical Response - Vineyards project:</u> Prior to approval of the first Final Map for the proposed project, the project applicant should coordinate with the ECCFPD to address access delay issues at neighborhood entry gates and EVAs. Opticom devices, or similar devices, should be included in Project Design. (Less than Significant Impact).</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>within a 4-minute driving time. The East Contra Costa Fire Protection District (ECCFPD) has adequate facilities to serve the proposed project within an acceptable response drive time and no new facilities would be required. (Less Than Significant Impact).</p>		
<p><u>IMPACT 3.13-B. Change in Governmental Facilities to Maintain Acceptable Fire and Emergency Medical Response Facilities - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These improvements would not substantially increase the need for governmental facilities to maintain acceptable fire and emergency medical response facilities (Less Than Significant Impact). The potential development of a community college, however, would increase the demand for fire protection and emergency medical response times. The ability of the ECCFPD to serve the community college from existing stations within their desired response times will not be known unless/until a community college is approved at that site and, therefore, a potentially significant impact would result. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.13-B. Change in Governmental Facilities to Maintain Acceptable Fire and Emergency Medical Response Facilities - Annexation Sites.</u> The CCCCD will coordinate any plans developed for a new community college with the ECCFPD to determine if they can provide services within adequate response times from then-current existing facilities.</p> <ul style="list-style-type: none"> ❖ If the ECCFPD determines that a new fire station is required to serve the community college, the CCCCD shall work with the ECCFPD and the City of Brentwood to provide a site for a new station. Furthermore, the City of Brentwood shall review the new fire station site in accordance with the California Environmental Quality Act (CEQA) to determine if significant impacts would occur. Should it be determined through the CEQA review that significant impacts of a new fire station would result in significant impacts, mitigation measures will be required to reduce those effects to a less than significant level. (Less Than Significant Impact) 	<p>Less than Significant Impact</p>
<p><u>IMPACT 3.13-C. Change in Governmental Facilities to Maintain Acceptable Police Services-Vineyards project:</u> The Vineyards project would increase the population of the City</p>	<p><u>Recommended Mitigation 3.13-C. Police Services-Vineyards project:</u> As a condition of project approval, all access points to gated communities shall be designed with Opticom activated gates (or</p>	<p>Less than Significant Impact</p>

**TABLE S.1
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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>of Brentwood and increase the demand for police protection services. With the replacement of the main police facility (within the next 4 years) and the existing satellite “wing” police station located at Fire Station #52, the Brentwood Police Department would have adequate facilities to serve the proposed project. (Less Than Significant Impact).</p>	<p>similar devices) to reduce emergency response delays. (Less Than Significant Impact).</p>	
<p><u>IMPACT 3.13-D. Change in Governmental Facilities to Maintain Acceptable Police Services-Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home do not exist. However, these plans may be developed in the future. Development of a potential community college would result in less than significant impacts to police facilities because the College District would provide a campus police facility for the community college. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.13-D. Change in Governmental Facilities to Maintain Acceptable Police Services - Annexation Sites:</u> The CCCCD would provide its own police facility and officers to serve the campus. And, the potential future uses of the John Marsh Home would not substantially increase the demand for police services beyond existing conditions. Additionally, the John Marsh Home would be served by the California Department of Parks and Recreation. Therefore, development or improvements to the Annexation Sites are not likely to result in the need for additional police facilities (Less Than Significant Impact).</p>	<p>Less than Significant Impact</p>
<p><u>IMPACT 3.13-E. Change in Governmental Facilities to Maintain Acceptable School Service - Vineyards project:</u> The proposed Vineyards project would generate approximately 371 students. An increase in students would increase the demand for additional school facilities in the project area. However, the project would be subject to state-mandated fees, which would be used to pay for additional school facilities as needed. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.13-E. Change in Governmental Facilities to Maintain Acceptable School Service – Vineyards project:</u> Impacts related to school facilities would be less than significant. Therefore, mitigation measures are not required. (Less Than Significant Impact).</p>	<p>Less than Significant Impact</p>
<p><u>IMPACT 3.13-F. Change in Governmental Facilities to Maintain Acceptable School Service - Annexation Sites:</u> Plans for development of a community college or for</p>	<p><u>Mitigation 3.13-F. Change in Governmental Facilities to Maintain Acceptable School Service - Annexation Sites:</u> Potential development of a community college or improvements to the John</p>	<p>Less than Significant Impact</p>

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SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>improvements to the John Marsh Home do not exist. However, these plans may be developed in the future. Development of a potential community college would result in beneficial impacts to school service because the potential community college would add educational facilities to the City of Brentwood. Improvements to the John Marsh Home would result in less than significant impacts to school facilities because the site would not result in the generation of new students. (Less Than Significant Impact).</p>	<p>Marsh Home would result in either beneficial impacts or less than significant impacts to school facilities and, therefore, no mitigation is required. (Less Than Significant Impact).</p>	
<p><u>IMPACT 3.13-G. Change in Governmental Facilities to Maintain Acceptable Park Service - Vineyards project:</u> The proposed Vineyards project would increase demand for park facilities in the City of Brentwood and the Eastern Contra Costa County area. The proposed project would increase the population of the City and could increase the use of existing parks and recreational facilities. However, the Vineyards project also proposes the creation of additional park space, consistent with the requirements of the City's General Plan. Therefore, the project would provide sufficient open space and parkland to serve the proposed development. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.13-G. Change in Governmental Facilities to Maintain Acceptable Park Facilities - Vineyards project:</u> Parks and open space within the Vineyards project, will provide for adequate park facilities to meet the recreation needs of the project area. (Less Than Significant Impact.)</p>	<p>Less than Significant Impact</p>
<p><u>IMPACT 3.13-H. Change in Governmental Facilities to Maintain Acceptable Park Facilities -Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home do not exist. However, these plans may be developed in the future. Development of a potential community college would result in less than significant impacts to park facilities because the college would not</p>	<p><u>Mitigation 3.13-H. Change in Governmental Facilities to Maintain Acceptable Park Facilities -Annexation Sites:</u> Potential development of a community college or improvements to the John Marsh Home would result in less than significant or even beneficial impacts to park facilities, and, therefore, no mitigation is required. (Less than Significant Impact).</p>	<p>Less than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>increase the population of the City, and would therefore not increase the demand for park facilities. In addition, the future development of a community college would likely include sports courts, fields, gymnasiums, and other recreational facilities for college students. Improvements to the John Marsh Home would result in a beneficial impact to park facilities because the site provides additional park space for the community. (Less Than Significant Impact).</p>		
<p><u>IMPACT 3.13-I. Cumulative Impacts – Change in Governmental Facilities to Maintain Acceptable Fire and Emergency Medical Response Services:</u> The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the City of Brentwood, would have the potential for a significant cumulative impact in terms of increased demands for fire protection and emergency medical response services. (Potentially Significant Cumulative Impact).</p>	<p><u>Mitigation 3.13-I. Cumulative Impacts – Change in Governmental Facilities to Maintain Acceptable Fire and Emergency Medical Response Services:</u> By implementing mitigation measure 3.13.B, the project’s contribution to the cumulative impacts caused by increased demand for fire protection and emergency medical response services would be less than significant. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>
<p><u>IMPACT 3.13-J. Cumulative Impacts – Change in Governmental Facilities to Maintain Acceptable Police Services:</u> The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the City of Brentwood, would not have a significant cumulative impact in terms of increased demand for police services. (Less Than Significant Cumulative Impact).</p>	<p><u>Mitigation 3.13-J. Cumulative Impacts – Change in Governmental Facilities to Maintain Acceptable Police Services:</u> No significant cumulative impact is anticipated, therefore, no mitigation is required. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.13-K. Cumulative Impacts – Change in Governmental Facilities to Maintain Acceptable School Service:</u> The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the City of Brentwood, would not have a significant cumulative impact in terms of increased demand for school facilities. (Less Than Significant Cumulative Impact).</p>	<p><u>Mitigation 3.13-K. Cumulative Impacts – Change in Governmental Facilities to Maintain Acceptable School Service:</u> No significant cumulative impact is anticipated; therefore, no mitigation is required. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>
<p><u>IMPACT 3.13-L. Cumulative Impacts – Change in Governmental Facilities to Maintain Acceptable Park Service:</u> The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the City of Brentwood, would not have a significant cumulative impact in terms of increased demand for recreational facilities. (Less Than Significant Cumulative Impact).</p>	<p><u>Mitigation 3.13-L. Cumulative Impacts – Change in Governmental Facilities to Maintain Acceptable Park Service:</u> No significant cumulative impact is anticipated; therefore, no mitigation is required. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>
<p>3.14 UTILITIES AND SERVICE SYSTEMS</p>		
<p><u>IMPACT 3.14-A. Water Entitlements – Vineyards Project:</u> The City has projected growth through the year 2020 and has sufficient water supplies available to serve the projected growth and existing demands, including the proposed Vineyards project. The City has sufficient water supplies through its groundwater resources and its existing contracts with the East Contra Costa Irrigation District (ECCID) to meet projected demands through the year 2020 and a less than significant impact would occur. Furthermore, the City is</p>	<p><u>Mitigation 3.14-A. Water Entitlements – Vineyards Project:</u> The City of Brentwood has sufficient water entitlements to serve the proposed Vineyards project and, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>

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Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>increasing the amount of water that can be recycled for irrigation purposes further contributing to the amount of water available to the City. (Less Than Significant Impact).</p> <p><u>IMPACT 3.14-B. Water Entitlements - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a small parking lot, or addition of an interpretive center inside the House. Potential development of a community college, however, would increase demands on water supply. Because sufficient water is available, this increase would result in a less than significant impact. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.14-B.1 Water Entitlements – Annexation Sites:</u> Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These potential improvements would result in less than significant impacts that do not require mitigation.</p>	<p>Less Than Significant Impact</p>
	<p><u>Recommended Mitigation 3.14-B.2 Water Entitlements – Annexation Sites:</u> Potential development of a community college is not expected to result in significant impacts arising from potential water demands. To further minimize this less than significant impact, the following mitigation measure is recommended:</p> <ul style="list-style-type: none"> ❖ The Contra Costa Community College District will perform a project level analysis of the project water demands and potential impacts, if any, on the municipal water supply system prior to approving development of a community college on the site. (Less Than Significant Impact) 	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.14-C. Water Facilities and Wastewater Treatment Facilities -Vineyards Project:</u> The City of Brentwood has</p>	<p><u>Mitigation 3.14-C. Water Facilities and Wastewater Treatment Facilities – Vineyards Project:</u> There is sufficient wastewater</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>recently expanded its wastewater treatment plant and has sufficient capacity to meet the wastewater treatment of the Vineyards project, while also accommodating existing uses. In addition, the Vineyard Project includes water distribution lines and other water supply facilities sufficient to serve project needs and no offsite facilities would need to be expanded. (Less Than Significant Impact).</p>	<p>treatment capacity and distribution facilities to serve the proposed Vineyards project and no expansion or construction of new wastewater facilities beyond what is already planned would be required. In addition, the project includes sufficient water supply facilities and no offsite facilities would need to be expanded to serve the project. Therefore, no mitigation is required. (Less Than Significant Impact)</p>	
<p><u>IMPACT 3.14-D. Wastewater Treatment Facilities - Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. Development of a potential community college would result in less than significant impacts to wastewater treatment facilities because the flows generated by the community college project would not exceed the capacity of municipal facilities nor require the construction or expansion of wastewater facilities. Improvements to the John Marsh Home would result in less than significant impacts to wastewater treatment facilities because minimal improvements would be developed on the site, none of which would have the potential to substantially contribute to wastewater flows. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.14-D. Wastewater Treatment Facilities – Annexation Sites:</u> The proposed Annexation Sites would not result in significant impacts to wastewater treatment facilities and, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.14-E. Regional Water Quality Control Board Requirements – Vineyards Project:</u> Wastewater generated from the proposed Vineyards project would be treated at the City of Brentwood Wastewater Treatment Plant (WWTP). The City’s WWTP has consistently met the RWQCB</p>	<p><u>Mitigation 3.14-E. Regional Water Quality Control Board Requirements – Vineyards Project:</u> The proposed Vineyards project would not contribute wastewater flows that would exceed RWQCB requirements and the City of Brentwood would be able to treat the flows to required levels and, therefore, no mitigation is required.</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>treatment requirements. The WWTP has sufficient capacity to treat wastewater demands of the proposed Vineyards project to RWQCB requirements. (Less Than Significant Impact).</p>	<p>(Less Than Significant Impact).</p>	
<p><u>IMPACT 3.14-F. Regional Water Quality Control Board Requirements – Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. Potential development of a community college, however, would increase wastewater treatment demands of the WWTP in the future. These potential effects would result in a significant impact. (Potentially Significant Impact).</p>	<p><u>Mitigation 3.14-F. Regional Water Quality Control Board Requirements – Annexation Sites:</u> Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These potential improvements would result in less than significant impacts, which do not require mitigation.</p> <p><u>Mitigation 3.14-F.2 Regional Water Quality Control Board Requirements – Annexation Sites:</u> Potential development of a community college would result in potentially significant impacts with regards to the unknown ability of the WWTP to accommodate flows from the project and meet RWQCB requirements. These impacts would be reduced to a less than significant level with application of the following mitigation measure(s):</p> <ul style="list-style-type: none"> ❖ Prior to project development, the Contra Costa Community College District shall demonstrate that the project would not contribute wastewater flows to the WWTP that would exceed RWQCB treatment requirements and discharge restrictions. <p>(Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.14-G. Solid Waste Disposal-Vineyards Project:</u> The proposed Vineyards project would be served by the Keller Canyon Landfill. The Keller Canyon landfill has sufficient capacity to accommodate the Vineyard project's solid waste disposal needs. The Vineyards project would</p>	<p><u>Mitigation 3.14-G Solid Waste Disposal- Vineyards Project:</u> No significant impact is anticipated, therefore, no mitigation is required. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>comply with federal, state and local statutes and regulations related to solid waste. (Less Than Significant Impact).</p> <p><u>IMPACT 3.14-H. Solid Waste Disposal-Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. Development of a potential community college would result in less than significant impacts to solid waste disposal because there are sufficient solid waste facilities to meet the demands of the potential development. Potential future improvements to the John Marsh Home would result in less than significant impacts to solid waste because minimal amounts of waste are expected to be generated onsite. (Less Than Significant Impact).</p>	<p><u>Mitigation 3.14-H.1. Solid Waste Disposal-Annexation Sites:</u> Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. No services or facilities would be provided that would result in a substantial generation of solid waste. These potential improvements would result in less than significant impacts which do not require mitigation. (Less Than Significant Impact).</p>	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.14-H. Solid Waste Disposal-Annexation Sites:</u> Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. Development of a potential community college would result in less than significant impacts to solid waste disposal because there are sufficient solid waste facilities to meet the demands of the potential development. Potential future improvements to the John Marsh Home would result in less than significant impacts to solid waste because minimal amounts of waste are expected to be generated onsite. (Less Than Significant Impact).</p>	<p><u>Recommended Mitigation 3.14-H.2. Solid Waste Disposal-Annexation Sites:</u> Potential development of a community college would result in potentially substantial amounts of solid waste being generated. This impact is considered to be less than significant as there are sufficient solid waste facilities to meet the demands of the potential project. However, in order to encourage recycling, the following mitigation measures are recommended:</p> <ul style="list-style-type: none"> ❖ The Contra Costa Community College District will contract with the City of Brentwood or another provider of recycling services to provide on-site recycling services. ❖ The Contra Costa Community College District shall design the refuse disposal areas throughout the public areas of the 	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.14-I. Natural Gas and Electricity-Vineyards & Annexation Sites:</u> The proposed Vineyards project and potential development on the Annexation Sites would result in increased energy demands, however, not at a level capable of substantially depleting statewide supplies. The California Public Utilities Commission, the California Power Authority, and the California Energy Commission regulate natural gas and electricity supplies on a statewide level. The proposed projects would not result in increased demands at a level considered substantial in relation to the statewide energy system. (Less Than Significant Impact)</p>	<p>community college site with adequate room to accommodate ample recycling bins in addition to trash bins. (Less Than Significant Impact).</p> <p><u>Recommended Mitigation 3.14-I.1. Natural Gas and Electricity-Vineyards Project & Annexation Sites:</u> To the extent feasible, energy efficient building design shall be incorporated as feasible by including such features as orientation of structures to summer and winter sunlight to absorb winter solar heat and reflect or avoid summer solar heat, thermal insulation of the walls and attic, which meets or exceeds local; standards, weather stripping of windows and doors to decrease heat loss, solar assisted domestic hot water and pool heating, tinted or solar reflective double glazing, overhangs on southern elevation, and vegetation on western elevations to provide shading from summer sun. Other specific energy design strategies for different land uses which shall be incorporated as feasible shall include, but are not limited to, the following:</p> <ul style="list-style-type: none"> ❖ The use of windows and skylights to reduce energy demand for lighting for commercial operations; ❖ Consultation with PG&E for assistance with energy conservation features. ❖ (Less Than Significant Impact). 	<p>Less Than Significant Impact</p>
<p><u>IMPACT 3.14-I. Natural Gas and Electricity-Vineyards & Annexation Sites:</u> The proposed Vineyards project and potential development on the Annexation Sites would result in increased energy demands, however, not at a level capable</p>	<p><u>Recommended Mitigation 3.14-I.2. Natural Gas and Electricity-Vineyards Project & Annexation Sites:</u> To the extent feasible, site-planning principles that would help in the conservation of energy shall be utilized during the planning and design of the Vineyards</p>	<p>Less Than Significant Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>of substantially depleting statewide supplies. The California Public Utilities Commission, the California Power Authority, and the California Energy Commission regulate natural gas and electricity supplies on a statewide level. The proposed projects would not result in increased demands at a level considered substantial in relation to the statewide energy system. (Less Than Significant Impact)</p>	<p>project and Annexations Sites. The site planning consideration shall include, but not be limited to, measures such as the following:</p> <ul style="list-style-type: none"> ❖ Orientation of the building such that solar access and prevailing winds are considered. If the longer side of a building is aligned in a north-south direction, a large area of the building would be exposed to greater amount and intensity of solar rays from the east and the west directions. A greater portion of the building should face the south side rather than the north side. The south side is associated with highest heat gains. ❖ Winds affect infiltration (air leakage) and transmission (thermal conductance) over the entire skin of a building, and the glazed or windowed portion particularly. The north and west sides of a building are most exposed to wind loads. Winds can decrease the exterior film of still air that usually surrounds a building and so increase the thermal vulnerability of roof and wall elements. This could increase heating and cooling loads. Knowing the direction of prevailing winds could determine where entrances and exits should be placed and whether or not they should be shielded; ❖ Choosing trees for landscaping that can serve as wind and light breaks and can affect energy consumption. Deciduous trees (which lose their leaves in winter) shall be selected for the south side of the building to provide sunshade during summer months and allow sun penetration during winter months. Evergreens can be planted on the northern side where there are no cold weather solar gains. Evergreens may also be planted around building entrances and windows to protect from prevailing wind conditions. The landscaping for parking lots 	

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.14-J. Cumulative Impacts – Water Supply:</u> The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the City of Brentwood, would not have significant cumulative impacts in terms of the effects on water supplies. (Less Than Significant Cumulative Impact).</p>	<p>and sidewalks should use trees that provide shade during the summer months and permit solar access to adjacent buildings during the winter months. (Less Than Significant Impact)</p>	
<p><u>IMPACT 3.14-K. Cumulative Impacts – Water and Wastewater Treatment Facilities:</u> The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the City of Brentwood, would not have significant cumulative impacts in terms of water and wastewater treatment facilities. (Less Than Significant Cumulative Impact).</p>	<p><u>Mitigation 3.14-J. Cumulative Impacts – Water Supply:</u> No significant cumulative impact is anticipated, therefore, no mitigation is required. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>
	<p><u>Mitigation 3.14-K. Cumulative Impacts – Water and Wastewater Treatment Facilities:</u> No significant cumulative impact is anticipated, therefore, no mitigation is required. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>
<p><u>IMPACT 3.14-L. Cumulative Impacts – Solid Waste Disposal:</u> The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the City of Brentwood, would have the potential to significantly increase demand for solid waste disposal facilities. (Potentially Significant Cumulative Impact).</p>	<p><u>Mitigation 3.14-L. Cumulative Impacts – Solid Waste Disposal:</u> Through compliance with federal, state and local requirements relating to solid wastes and through implementation of Mitigation 3.14-H.2 the project’s contribution to any cumulative solid waste disposal impacts would be less than significant. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>

**TABLE S.1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND IMPACT LEVELS OF SIGNIFICANCE**

Project and Cumulative Impacts	Mitigation Measures	Level of Significance After Mitigation
<p><u>IMPACT 3.14-M. Cumulative Impacts – Natural Gas & Electricity:</u> The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the region, would have the potential to significantly increase demands for energy supplies. (Potentially Significant Cumulative Impact).</p>	<p><u>Mitigation 3.14-M. Cumulative Impacts – Natural Gas & Electricity:</u> Implementation of Mitigation 3.14-I.1 and 3.14-I.2 would reduce the contribution of the projects to cumulative energy impacts to a less than significant level. (Less Than Significant Cumulative Impact).</p>	<p>Less Than Significant Cumulative Impact</p>

1.0 INTRODUCTION

1.1 BACKGROUND

The California Environmental Quality Act (CEQA) requires public agencies to consider the physical effects that a proposed project may have on the environment if it is approved and constructed. The public agency with the principle responsibility for carrying out or approving a project is the “lead agency”. CEQA requires the lead agency to prepare an Environmental Impact Report (EIR) if there is substantial evidence, in light of the whole record, that a project may have a significant effect on the environment. A significant effect is defined in CEQA as a substantial and adverse physical change in the environment.

This EIR has been prepared to analyze the environmental effects of the future development of the Vineyards at Marsh Creek Project and the potential future development of the Annexation Sites (described below). This EIR has been prepared pursuant to CEQA (Public Resources Code §§ 21000-21178) and the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3).

The City of Brentwood recently amended its General Plan (City of Brentwood, 2001a). The City of Brentwood General Plan 2001-2021 is the current version of the Plan. The General Plan updated the Land Use, Growth Management and Circulation Elements from the prior 1993 General Plan, and made minor changes to the Community Design, Economic Development and Community Facilities Element. The Brentwood General Plan was approved after certification of a Program EIR prepared for that project (City of Brentwood, 2001b). To the extent project or cumulative impacts are addressed in the EIR for the Brentwood General Plan, this EIR may refer to applicable portions of the General Plan EIR.

Vineyards Project

The City of Brentwood is the lead agency for the proposed Vineyards at Marsh Creek project (Vineyards project). The Vineyards project is proposed by the Vineyards at Marsh Creek LLC (Project applicant). The Vineyards project would develop a mix of land uses in the City of Brentwood. The Vineyards project site is approximately 481 acres, and is located in Contra Costa County, within the County’s Urban Limit Line (ULL).¹ The project site is located in the Brentwood General Plan Planning Area and Sphere of Influence (SOI), but is outside of the City’s municipal boundary. The project is located within the northeastern portion of the City of Brentwood General Plan’s Special Planning Area J (SPA J). The project area is bordered by the existing Summerset Active Adult Residential Community to the north and east. It is bordered on the west and south by land acquired by the State from the Cowell Foundation for use as a State Park. This land to the south includes the historic John Marsh Home and the Marsh Creek Reservoir. Segment 3 of the planned

¹ Small portions of the site upon which a water tank and a detention basin would be located are outside the ULL, and are allowed uses outside the ULL. All areas proposed for urban development are inside the ULL.

State Route 4 Bypass (SR4 Bypass), when completed, will border the project site on the north and east and will include a new interchange at Marsh Creek Road along with improvements to Marsh Creek Road and Concord Avenue.

The Project applicant requests that the City approve mixed-use development consisting of approximately 1,100 units of active adult units, 150 single-family executive lots, 35 acres of commercial and multi-family housing development in a “Village Center”, a recreation center, and a 30-acre parcel to be used for a winery and amphitheater. The proposed development would require the City’s approval of an Annexation, General Plan Amendment (GPA), Prezone, Design Review, and one or more Subdivision Maps. The Contra Costa County Local Agency Formation Commission (LAFCO) will also need to approve the annexation of the Vineyards Site to the City of Brentwood as well as the annexation of the intract agricultural parcels within the site to East Contra Costa Irrigation District (ECCID). In addition, the applicant and the City are considering entering into a Development Agreement. Section 2.0, *Project Description*, provides a detailed description of the proposed Vineyards Project.

Level of Environmental Analysis for the Vineyards Project

Since the Vineyards project includes a site plan and other features that can be well described, the environmental analysis of this project is evaluated in this EIR at a “*project level*” of detail.

Annexation Sites

In addition to the Vineyards project, the City of Brentwood will consider annexation of, General Plan amendments, and rezoning for, two sites in the immediate vicinity of the Vineyards project. These sites are located inside of the City of Brentwood SOI, but outside of the City’s municipal boundaries and outside of the Contra Costa County ULL. These sites are referred to herein as the Annexation Sites.

The Annexation Sites include approximately 40 acres of land upon which the historic John Marsh Home is located, and a 60-acre site of which approximately 30-acres would potentially be developed with a future Community College that has been given to the Contra Costa County Community College District exclusively for school uses by the former property owner. The General Plan land uses are proposed to be amended from Business Park (BP) to Schools, Community College (for the community college site) and from SPA J, Business Park (BP) to Parks (for the John Marsh Home site). The Contra Costa County LAFCO will also need to approve the annexation of the sites to the City of Brentwood.

Level of Environmental Analysis for the Annexation Sites

There are no site plans for the Annexation Sites, although minor improvements for public access might be constructed as part of the Vineyards Project. The annexation and General Plan amendments would authorize these properties to be situated within the municipal boundaries of the City of Brentwood. The land use designations that would result from the General Plan amendments would allow for future development on these sites consistent with current concepts of what could be developed on the sites in the future. However, there are no design plans, or detailed descriptions of what may occur on these properties. Therefore, the potential future development of the Annexation Sites is evaluated at a more general “*programmatic*” level of detail in this EIR. When (and if) plans are developed for the

Annexation Sites, the applicable agency would need to determine what type of evaluation may still be required pursuant to CEQA.

1.2 PURPOSE

According to § 15121 of the State CEQA Guidelines, an EIR is an informational document that is written to inform public agency decision-makers and the public of the significant environmental effects of a proposed project. The purpose of an EIR is to:

- ❖ Analyze the environmental effects of a proposed project,
- ❖ Indicate mitigation measures to avoid or minimize the potentially significant environmental effects of a proposed project, and
- ❖ Identify alternatives to the project that would avoid or substantially lessen the significant effects of the project.

Environmental effects that are addressed in the EIR include the significant, adverse effects of the project across a full spectrum of environmental topics (see the Table of Contents or Section 3.0 of this EIR which identifies the environmental issues evaluated herein); growth-inducing effects of the project; and significant cumulative effects of past, present, and reasonably anticipated future projects.

It is not the purpose of an EIR to recommend either approval or denial of a project. Rather, the purpose of an EIR is to provide relevant information that will assist decision-makers in their decision to approve or deny the project. The lead agency may choose to approve a project that would result in significant environmental effects that cannot be mitigated. If this occurs, the lead agency is required to prepare and adopt a “Statement of Overriding Considerations.”

1.3 SCOPE OF THE EIR

The focus of this EIR is limited to specific issues and concerns identified by the City of Brentwood as causing potentially significant effects on the environment. To determine the scope of this EIR, the City of Brentwood prepared and distributed a Notice of Preparation (NOP) for the proposed project on June 4, 2003. A NOP is a document that describes the proposed project, the project location, and the probable environmental effects of the project. The purpose of the NOP is to solicit comments from public agencies and interested parties, and to identify issues that should be considered in the EIR. The NOP identified the following list of issues to be addressed in the EIR:

- | | | |
|----------------------------------|--|-----------------------------------|
| ❖ Land Use and Planning | ❖ Aesthetics / Visual Resources | ❖ Cultural and Historic Resources |
| ❖ Population and Housing | ❖ Biological Resources | ❖ Hazards and Hazardous Materials |
| ❖ Transportation and Circulation | ❖ Geology, Soils, Seismicity and Mineral Resources | ❖ Public Services |
| ❖ Air Quality | ❖ Water Quality | ❖ Public Utilities |
| ❖ Noise | ❖ Hydrology and Drainage | ❖ Cumulative Impacts |

The NOP for the EIR was sent to Trustee and Responsible Agencies², members of the public, and other interested parties. The State Clearinghouse also received the NOP on June 4, 2003. This began the 30-day scoping period, which ended on July 4, 2003. During the scoping period, public agencies and members of the public had the opportunity to respond to the NOP in order to identify issues, or additional subjects that should be considered in the EIR. The issues identified for inclusion in the EIR are incorporated into this EIR. A copy of the NOP and the comments raised by public agencies and members of the public are included in Appendix A of the EIR.

1.4 EFFECTS FOUND NOT TO BE SIGNIFICANT

Through the scoping process, the City has determined that no environmental issues will be excluded from further analysis in this EIR. The EIR evaluates all relevant environmental topics suggested in the State CEQA Guidelines, Appendix G, “Environmental Checklist Form.”

1.5 ENVIRONMENTAL REVIEW PROCESS

This Draft EIR, with an accompanying Notice of Completion (“NOC”), will be circulated to the State Clearinghouse, responsible agencies, trustee agencies, other government agencies, and interested members of the public for a 45-day review period. The review period for this Draft EIR will begin on November 25, 2003 and end on January 9, 2004. During the review period, public agencies and members of the public may provide written comments on the analysis and content of the EIR. All written comments on the Draft EIR must be mailed to the City of Brentwood by 5:00 p.m. on January 5, 2003. Comments must be sent to the following address:

City of Brentwood
Community Development Department
708 Third Street
Brentwood, CA 94513
(925) 516-5405
Attention: Mr. Mitch Oshinsky, Director

Comments received on this Draft EIR during the 45-day public review period will be responded to in writing by the City of Brentwood. The Draft EIR; a list of persons, organizations, and public agencies that commented on the DEIR; comments received; and written responses to those comments will collectively compose the Final EIR. The Final EIR will be made available, at a minimum, to the Responsible Agencies that provided written comments on the Draft EIR for a period of at least 10 days prior to any public hearing during which the lead agency will determine whether to certify the EIR.

Pursuant to the State CEQA Guidelines, the Final EIR must be certified before the lead agency can take action⁴ on the project.

2. A Trustee Agency is a federal, state, or local government agency that is responsible for natural resources that may be affected by the proposed project. A Responsible Agency is a federal, state, or local government agency (other than the lead agency) that is involved in funding or granting one or more approvals for the project or a portion of the proposed project.

Following Final EIR certification but prior to the public agency taking action on the project, the agency will prepare a Mitigation Monitoring and Reporting Program. Before approving (or conditionally approving) the project, the agency must prepare CEQA findings, in accordance with State CEQA Guidelines, including a brief explanation of the rationale for each finding for each significant environmental impact identified for the proposed project. If significant environmental impacts that cannot be reduced to a less than significant level are identified for the project, the agency must prepare a Statement of Overriding Considerations pursuant to of the State CEQA Guidelines.

1.6 TERMINOLOGY USED IN THE EIR

The EIR includes the following terminology to denote the level of significance of environmental impacts due to the proposed project:

- ❖ **Less than Significant Impact:** Project would not result in a substantial and adverse change in the physical conditions that exist in the area affected by the project. Project may result in an adverse change, but not substantial in light of the project conditions, project setting, or other factors. Mitigation measures are not required, but may be recommended.
- ❖ **Beneficial Impact:** Project would result in a positive contribution or improvement to the physical conditions that exist in the area affected by the project.
- ❖ **Significant Impact.** Project would result in both a substantial and adverse change in the physical conditions that exist in the area affected by the proposed project. According to CEQA, the lead agency shall determine whether a project may have a significant effect on the environment based on substantial evidence in light of the whole record. If feasible, mitigation measures or alternatives must be provided in an attempt to reduce the magnitude of the significant impact.
- ❖ **Potentially Significant Impact:** The project would result in a significant impact if certain events were to occur, but the occurrence of the events cannot be predicted with certainty. For example, if the project grading were to uncover archaeological resources but the certainty of those resources cannot be determined before grading actually occurs, a potentially significant impact would result. Potentially significant impacts are treated as a significant impact in that, if feasible, mitigation measures or alternatives must be provided in an attempt to reduce the magnitude of the significant impact.
- ❖ **Significant and Unavoidable Impact:** Project would result in a significant impact that cannot be mitigated to a less than significant level. A project can be approved in the face of one or more significant and unavoidable impacts but only after the lead agency prepares a Statement of Overriding Considerations, in accordance with Public Resources Code § 21081(b) and § 15093 of the State CEQA Guidelines, which specifies the project benefits that would outweigh the significant environmental impacts.

³. After certification of the EIR, the City of Brentwood will make the determination of whether to approve, disapprove, or conditionally approve the projects. This determination is referred to as “taking action” on a project.

2.0 PROJECT DESCRIPTION

2.1 INTRODUCTION

The project proposed by the project applicant (i.e., Vineyards at Marsh Creek LLC) is the *Vineyards at Marsh Creek* (“Vineyards”) project, described in more complete detail in Section 2.4 of this EIR. Entitlements sought by the applicant for the Vineyards project include: annexation into the City of Brentwood; General Plan amendments (GPA); rezoning consistent with the City of Brentwood zoning ordinance; and Design Review; subdivision map(s) to create multiple parcels; and potentially a Development Agreement between the applicant and the City of Brentwood.

The City of Brentwood also seeks to annex two additional properties in the municipal City boundaries, to amend the Brentwood General Plan to allow for their potential future use and to prezone the sites. These two sites (herein referred to as the *Annexation Sites*) are the John Marsh Home site (currently part of the California State Park system) and a potential Contra Costa County Community College site. These two sites are located inside the City’s Planning Area and Sphere of Influence, but outside of the Brentwood Municipal boundaries and outside of the Urban Limit Line (ULL).

The properties under evaluation in this EIR are located in southeastern Contra Costa County (Exhibit 2-1).

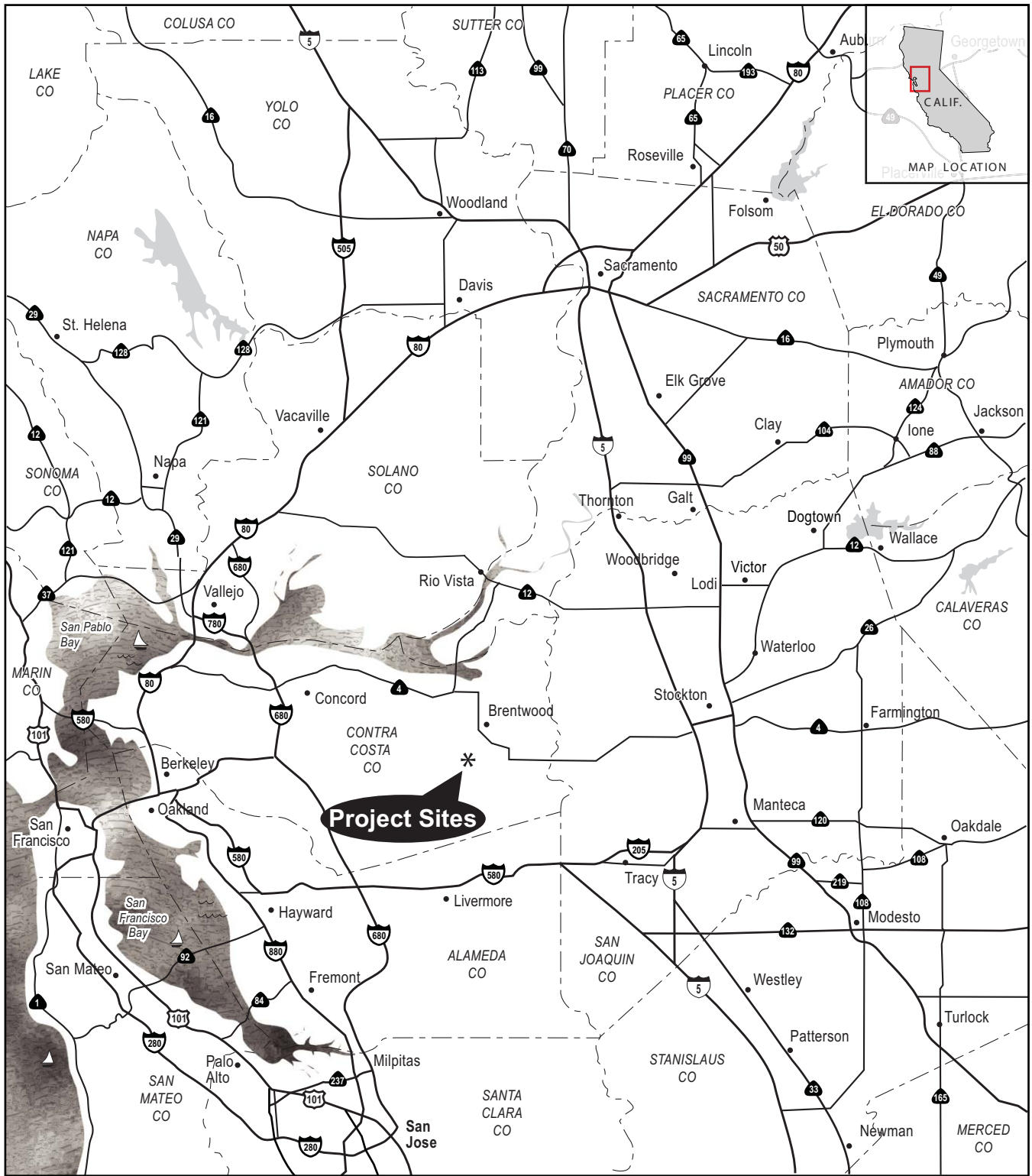
There is an extensive “history” associated with the Vineyards project site, Annexation Sites, and surrounding area that provides some context for understanding the proposed Vineyards project, future planned infrastructure, the City’s requested annexations, and anticipated City of Brentwood plans.

2.2 VINEYARDS PROJECT HISTORY

The Ranch’s Early Days

The site of the Vineyards project was once part of a vast 17,000-acre area called Rancho de Los Meganos or “Sand Dunes Ranch.” The ranch extended from the base of Mount Diablo to the mouth of the San Joaquin River. Its earliest known settlers were the Bay Miwok Indians, who reportedly set up thriving villages along Marsh Creek. The adjoining landscape would also become home to John Marsh, Contra Costa County’s first Anglo-American citizen and a key figure in the pursuit of California’s annexation to the U.S. Marsh spent all of his money – \$500 – to buy the ranch in the 1830s from owners Jose Noriega and Manuela Fenendez. Marsh and his wife initially lived in a small adobe house on the property adjacent to an Indian settlement. Later, Marsh would build the famous “Stone House,” now the centerpiece of the future John Marsh Home State Park, which lies adjacent to the Vineyards project site (William Self Associates, 1993).

Since the 1800s, Rancho de Los Meganos has passed through a series of successive owners (William Self Associates, 1993). The ranch lands have primarily been used for agricultural and grazing activities (Contra Costa County, 1996). In 1900, a Scottish investment company, Balfour-Guthrie, bought the ranch and invested in an elaborate irrigation system to supply water to 22,000 acres.



Balfour-Guthrie sold off smaller parcels with water rights and successfully recouped its original investment. Later, the Balfour-Guthrie project would merge with two other irrigation districts to become the East Contra Costa Irrigation District, which serves the Brentwood area today (William Self Associates, 1993).

Acquisition by the Cowell Family

In 1924, the ranch captured the attention of Samuel Henry Cowell, a Bay Area businessman whose family managed a successful lime and cement company, drayage and storage business, and waterfront warehouse. The family also owned land throughout Northern California (Cowell Foundation, 2003). The Cowell family purchased 4,907 acres from Balfour-Guthrie, including the Vineyards project site (William Self Associates, 1993). S.H. Cowell continued to manage the land for agriculture purposes, as well as operation of a small sand-mine that supplied material to a local cement company (Contra Costa County, 1996; Metz, 2003). An avid outdoorsman, Cowell reportedly “visited each of the Cowell family holdings on a regular basis” saddling up a horse at each place “so he could personally inspect the land.” (MacDougall, 1989).

S.H. Cowell, like his parents and siblings, believed in sharing his good fortune with the community. He and his family earned a reputation as generous benefactors of many charitable causes. Their gifts included the donation of Cowell Beach to the City of Santa Cruz, the creation of Henry Cowell Redwoods State Park, the construction of student health centers at six Northern California universities and colleges, construction of the “Lighthouse for the Blind” building, and donations to the Helen Cowell Children’s Hospital and the California Palace of the Legion of Honor (MacDougall, 1989).

As the last surviving member of the family, S.H. Cowell wanted to ensure that his family’s charitable works lived on. Before he died in 1955, he created a trust to be used “exclusively for religious, charitable, scientific, literacy and education purposes, and for the prevention of cruelty to children or animals.” (Vorderbrueggen, 1999). The trust’s assets primarily consisted of real estate – the 4,907-acre Cowell Ranch plus 78,000 more acres of prime California land (Cowell Foundation, 2003). The S.H. Cowell Foundation quickly became one of the Bay Area’s most industrious philanthropies. In its nearly 50-year history, the Foundation has donated more than \$190 million to Northern California charities (Metz, 2003). Today, the Foundation’s gift-giving focuses on affordable housing, family resource centers, public education and youth development activities (Cowell Foundation, 2003).

The Cowell Foundation’s Initial Development Proposals

By the 1980s, the Cowell Foundation had donated, or sold at below-market-value, some of the trust’s 82,000 acres for permanent open space. Among the gifts was the 14-acre John Marsh Home site, which the Foundation donated to the Contra Costa County Historical Society (the home site was later conveyed to the state park system) (Metz, 2003).

Other trust lands were sold for development and other uses in order to create an endowment that would support the Foundation’s charitable-giving activities. In an effort to raise additional funds for grant-making, the trustees began to explore the possibility of developing Cowell Ranch (Metz, 2003). Although Cowell Ranch was designated as agricultural land in the County General Plan, as of the end of the 1980’s 2,000 acres had been placed inside the County’s Urban Limit Line (ULL), which made it potentially eligible for urban development.

The trustees initially envisioned as many as 7,500 homes on the 2,000 acres inside the ULL (Metz, 2003). In 1991, they asked the County Board of Supervisors to complete a General Plan Amendment study for the area. The Board of Supervisors authorized the study and set forth principles to guide future development of the property. These included providing exemplary treatment of environmental issues, creating high-quality design, achieving a self-contained community within the City of Brentwood, and improving quality-of life while enhancing the economic base for local government (Contra Costa County, 1996).

In 1992, the Foundation submitted its first development application. It proposed a mixed-use community of 6,879 residences, an equestrian and recreation facility, 750,000 square feet of commercial space, a business park, and a golf course. About 1,500 acres would be devoted to open space and agricultural uses. A Notice of Preparation for an EIR was issued by the County, but the original project never moved forward because the Foundation opted to revise its plans to better address environmental effects and respond to staff suggestions (Contra Costa County, 1996).

The Foundation submitted a revised project proposal to the County in 1995. This proposal was modified in early 1996 after the Foundation received comments from both the County and City of Brentwood, which had entered into a cooperative Memorandum of Understanding with the Cowell Foundation regarding development of the site. The project proposed in 1996 called for development of 1,269 acres, while preserving 70 percent of the site as open space (3,008 acres). The proposal featured two pedestrian-oriented villages containing a combined total of approximately 5,200 dwellings, commercial uses, and public facilities. Lower-density housing would encircle the higher-density village centers. A business park and community college would be located north of the proposed State Route 4 Bypass (Contra Costa County, 1996).

The project generated considerable opposition when the Draft Environmental Impact Report was published in 1996. The Trustees of the Cowell Foundation eventually reduced their proposal to 3,500 homes (Metz, 2003). Then, in January 1999, two separate planning efforts were initiated that would change the future of Cowell Ranch: the City of Brentwood began updating its General Plan, and Contra Costa County began studying changes to its Urban Limit Line.

The Region Plans a New Expressway

On or about the time that the Cowell Foundation was considering its initial development proposals, the State Route 4 Bypass Authority was formed (in the late 1980's/early 1990's) by the cities of Brentwood and Antioch and Contra Costa County. The Bypass Authority was formed to design a major transportation corridor, known as the East County Corridor, and a 9.3-mile northern segment known as the State Route 4 (SR 4) Bypass (State Route 4 Bypass Authority, 1993). The Bypass was designed to extend from SR 4 / SR 160 in eastern Antioch, south approximately 9.3 miles to connect with Vasco Road at Walnut Boulevard in the City of Brentwood vicinity and would provide a major transportation route through Eastern Contra Costa County. "Segment 3" (i.e., 3a and 3b) of the SR 4 Bypass will form the eastern boundary of the only part of the Cowell Ranch project that was set aside for development i.e., the Vineyards project site.

The City of Brentwood Creates a New Vision for the Future

The population of the City of Brentwood soared in the 1990s, nearly doubling from 1993 to 2001. In 1999, the City Council embarked on a General Plan update process designed to “reduce the City’s ultimate population, create more high quality employment opportunities, and preserve and enhance Brentwood’s quality of life.” The update specifically focused on the City’s Land Use, Circulation and Growth Management Elements (City of Brentwood, 2001a).

After several community workshops, guidance from a citizen’s steering committee, telephone surveys with residents, and public hearings, the City formalized a new 20-year vision. Part of this vision addressed the greater Cowell Ranch area, designated in the 2001 General Plan as “Special Planning Area J.” The plan noted that the “size of the property presents a unique opportunity to create a balanced, mixed use, master planned development that offers a range of housing and employment opportunities along with open space, schools, parks, recreational facilities, commercial activities, and appropriate civic uses.” Planning policies for the site encouraged compact urban forms, a range of residential housing types, pedestrian and transit use, close proximity of housing and jobs, and commercial and professional office space (City of Brentwood, 2001a). While a master-planned development on Cowell Ranch was deemed consistent with the City’s vision for the future, the City also designated much of the ranch (the area outside the City’s sphere-of-influence) as open space, with the goal of permanently protecting those areas for wildlife habitat, recreation and agricultural uses (City of Brentwood, 2001a).

The County Considers Redrawing the Urban Limit Line

The same year the City of Brentwood embarked on its General Plan update, Contra Costa County began revisiting its Urban Limit Line (ULL). The ULL was adopted as part of the County General Plan in 1991 to carry out the “65/35” land preservation standard approved by voters in 1990 (known as “Measure C”). Measure C specified a policy objective to restrict urban development to 35% of the County’s land base, while preserving the remaining 65% for agriculture, open space, wetlands, parks and other non-urban uses (Contra Costa County, 1999). A County–designated ULL surrounds each city; development is generally prohibited beyond the ULL boundary.

The County’s study examined two different options for addressing the ULL around the Brentwood area, both of which placed the majority of Cowell Ranch outside the ULL (County Staff Report, June 20, 2000). The least restrictive of the two retained only 345 acres within the ULL, substantially reducing the property’s development potential.

Following discussions with the County, and City of Brentwood, the trustees of the Cowell Foundation reconsidered their earlier development proposals (Metz, 2003). In light of more recent planning efforts, they began working on the possibility of a sale that would preserve the vast majority of the ranch as permanent open space, while retaining acreage inside the ULL for development.

Open Space Agreement Helps Define New Urban Limit Line

The Board of Supervisors temporarily postponed its decision on changes to the Brentwood ULL pending the outcome of the Cowell Foundation’s negotiations for the sale of most of the ranch as open space. In an August 1, 2000 resolution, the Board declared its intent to choose among the ULL alternatives “based upon the potential sale of the Cowell Foundation property to a land trust for

permanent open space purposes, excepting that portion of the property to be conveyed to a private land developer.” In the event that the Board was “not satisfied that such a sale had been contracted,” the Board said it would adopt the most restrictive ULL boundary studied. If, however, the Cowell Foundation reached an open space agreement, it would consider “placing approximately 448 (+/-) acres of the ranch site inside the Urban Limit Line.” (Contra Costa County Res. No. 2000/366).

On September 8, 2000, the Cowell Foundation reached an agreement with the Trust for Public Land. The Foundation agreed to a below market-value sale of approximately 3,942 acres for \$13 million. The Trust for Public Land would raise the necessary open space funding from various public agencies and park bonds (Office of Sen. Torlakson, 2003). After verifying the open space agreement was in place, the Board of Supervisors unanimously voted on September 26, 2000, to exclude all of Cowell Ranch from the ULL, with the exception of 448 acres, which was to be retained inside the Urban Limit Line and conveyed to a private developer (Contra Costa County Res. No. 2000/451).

Community College Receives Gift of 30 Acres

In addition to selling the majority of Cowell Ranch for open space, the Cowell Foundation entered into an agreement to donate 30 acres to the Contra Costa Community College District (CCCCD) for the creation of a college campus that would serve the far east County. The District has two years to exercise the irrevocable option, and 10 years to construct the campus, not including potential time extensions (Option Agreement, October 31, 2000). In approving the option agreement, the CCCCC Board noted that the property “presents the most desirable and tangible site to further the future efforts of the District to locate a permanent educational center in the Brentwood area.” (CCCCD Governing Board Minutes, October 25, 2000).

Most of Cowell Ranch Becomes a State Park

The Trust for Public Land conveyed Cowell Ranch to the state park system for preservation in perpetuity in November 2002 (refer to Exhibit 3.12-1 of this EIR). The California Department of Parks and Recreation plans to develop a master plan for the Cowell Ranch area, which is near the approximately 20,000-acre Mount Diablo State Park. The preservation of the majority of Cowell Ranch, combined with the Mount Diablo state parklands, constitutes an approximately 24,000-acre expanse of protected wild habitat, scenic open space and recreation opportunities for residents of Contra Costa County.

Blackhawk/Nunn Acquires Option to Develop Remaining 481 Acres

In July 2002, the Cowell Foundation entered into an agreement to sell the final 481-acre portion of Cowell Ranch to Blackhawk-Nunn. The sale includes the 448 acres that the Board of Supervisors specifically retained inside the Urban Limit Line, plus 33 additional acres outside of the ULL, which may be used for purposes such as a water tank and detention basin.

The City of Brentwood began a series of community workshops to plan for the future of the 481-acre parcel in April 2003. The proposal that evolved out of those workshops contemplates the development of an active adult community with recreational trails that connect it to the surrounding open space and State Park. A key feature of the Vineyards project is the maintenance of the area’s rich agricultural history. The project includes the establishment of a vineyard and winery. Ribbons of open space

would be planted with grape vines and/or olive trees, and woven throughout the project site, to create an integrated agricultural theme.

The Vineyards neighborhood would feature a variety of housing types: active adult detached homes, single-family detached homes, and multi-family residences. Assisted-living and congregate care facilities would be conveniently located next to shopping and restaurants at the Village Center.

Commercial establishments at the Village Center would primarily serve the needs of local residents. The Village Center may also include a small hotel with convention facilities.

Travel to the village shops and eateries, nearby golf courses, state park land and community college would be made easy by an interconnected system of multi-use pathways accommodating pedestrians, bicyclists, golf carts and Gen cars.

2.3 PUBLIC INVOLVEMENT IN VINEYARDS PROJECT DESIGN

The public was invited by the City of Brentwood to participate in the development of the project design for the Vineyards at Marsh Creek (Vineyards) project. From March through July of 2003, the City of Brentwood held a series of public meetings and workshops to gather public input on concepts for development at the Vineyards project site. Five separate public workshops were held (April 2, 3, 4 and 29 and May 13 and July 8) to identify site features and opportunities and constraints, and to solicit public feedback on various concepts for development at the Vineyards. A number of themes were identified by the public relative to the project site including:

- ❖ Protect the ridgelines
- ❖ It's all about the open space
- ❖ Make the Village Center a neighborhood amenity
- ❖ Enhance Neighborhood lifestyle with synergy between land uses
- ❖ Learn from the best of Brentwood and “do it better,” not different
- ❖ Respect the significance and importance of the John Marsh Home

Using these themes but working within the site constraints, the public reviewed various land uses and their locations on the project site. The resulting plan involved development of residential components of various types connected by a major roadway “spine” (i.e., proposed Fairview Avenue extension). A commercial “core” was combined with recreational opportunities (e.g., winery and State Park access) at the southern portion of the site – nearest access to Marsh Creek Road and the SR 4 Bypass. Project design included avoidance of prominent ridgelines. Other features discussed and worked into the land use concept plans were paths and trails, including sidewalks, cart paths, walking and jogging paths.

What evolved out of the workshop process was a conceptual plan that was then presented to City decision-makers (i.e., Planning Commission and City Council) for comment, many of whom had also participated in the workshop process. Issues raised by decision-makers resulted in development of additional visual simulations of the development plan and/or minor refinements in the land plan. Finally, on July 8, the Brentwood City Council approved a Vineyards at Marsh Creek project description for review in this EIR. A copy of the Community Workshops and Concept Plan (April –

July 2003) is available for review at the City of Brentwood Planning Department, 104 Oak Street, City of Brentwood, California.

2.4 PROPOSED PROJECT LOCATION

The City of Brentwood is located in eastern Contra Costa County, California. The City is approximately 45 miles northeast of San Francisco and 65 miles southwest of Sacramento (refer to Exhibit 2-1). Brentwood is generally accessed from Highway 4 in Contra Costa County.

Vineyards Project Location

The Vineyards project site is located on Concord Avenue, south of Balfour Road, and north of Marsh Creek Road (Exhibit 2-2). The SR 4 Bypass (250-foot Right of Way) has been approved by the State Route 4 Bypass Authority and will be extended near the Vineyards project area. When completed, Segment 3 (i.e., 3a and 3b) of the planned SR 4 Bypass will border the Vineyards project site along the north and east. An upgrade to Marsh Creek Road will provide a connector (with a 110-foot right of way) between the Bypass and SR 4. Segment 3 includes that portion of the Bypass from Balfour Road to Vasco Road. Segment 3 includes planned improvements to Marsh Creek Road (to straighten a sharp curve) and new interchanges at Marsh Creek Road, Balfour Road, and Vasco Road.

The Vineyards project site is approximately 481 acres and is bordered by (and within) the County's ULL except for the water tank and detention basin. These public facilities are allowed uses outside the ULL. All areas proposed for urban development are within the ULL. The site is entirely within the City of Brentwood Sphere of Influence (SOI). The Vineyards project site is located within the southwestern portion of the City of Brentwood in General Plan Special Planning Area J (SPA J) (Exhibit 2-3).

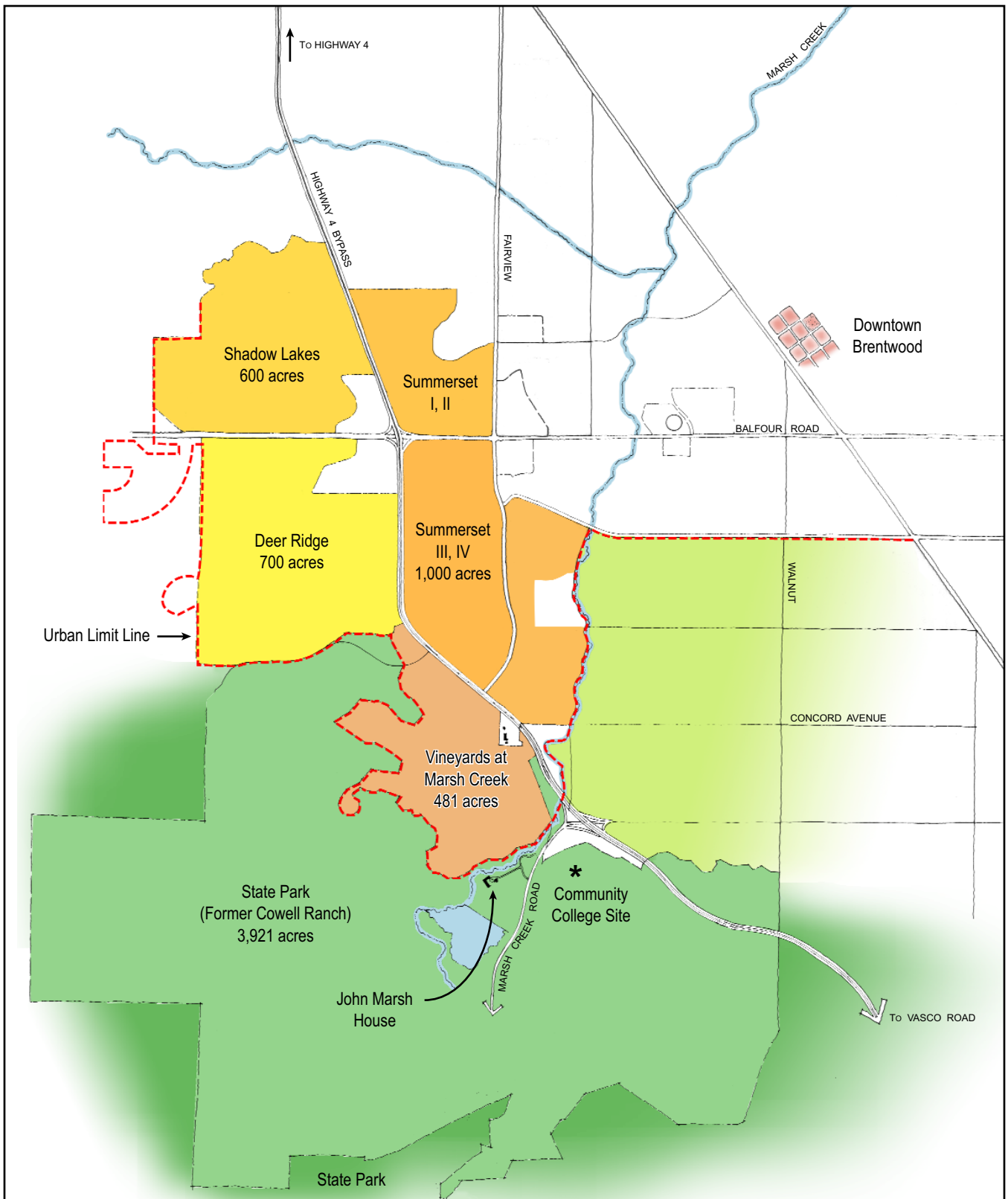
The Summerset Active Adult Residential Community borders the project site on the north and east. Approximately 24,000 acres of land – a combination of a new California State Park and the existing Mount Diablo State Park – borders most of the Vineyards site to the south and west and provides protected wild habitat, scenic open space and recreation land for Contra Costa County residents and visitors. The historic John Marsh Home is located west of the Vineyards project's southern extension of Fairview Avenue, just north of Marsh Creek Road.

Pacific, Gas & Electric (PG&E) operates an existing transmission facility on a 14-acre parcel located between the Vineyards project site and the State Route 4 Bypass. These 14 acres would be annexed to the City with the Vineyards project to make a contiguous annexation. No physical changes are expected on the PG&E site.

Annexation Sites

The Annexation Sites are located south, and outside of, the Vineyards project area (refer to Exhibit 2-2). Both sites are located outside of the City of Brentwood municipal boundaries, but inside the SOI and Planning Area (refer to Exhibit 2-3). Both sites are situated outside the County ULL.

The existing John Marsh Home is located south of the proposed Vineyards project and across Marsh Creek. The John Marsh Home is west of Marsh Creek Road and north of the Marsh Creek Reservoir. The John Marsh Home is within the new State Park boundaries.



Source: Hart Howerton (2003)



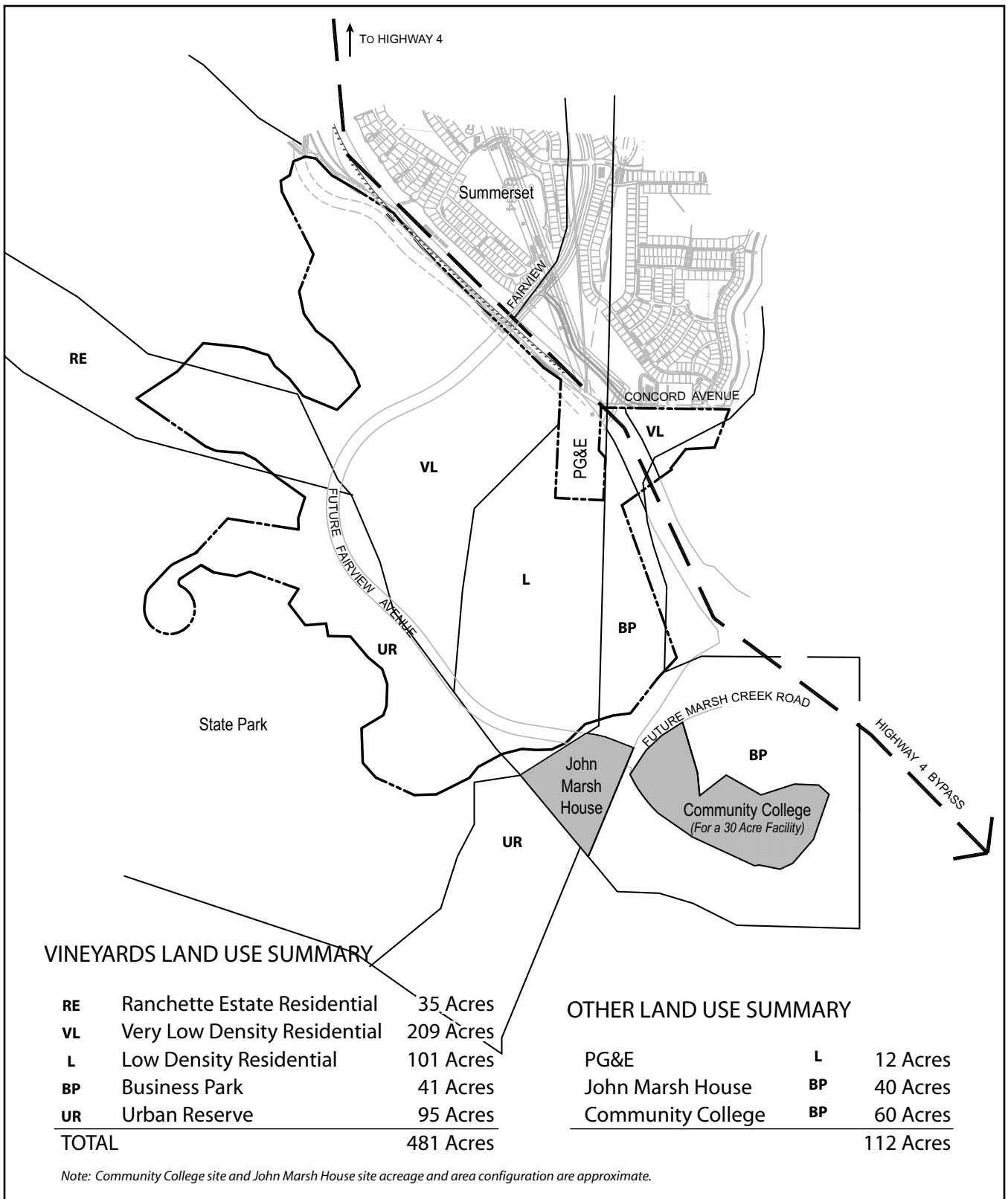
Not to scale

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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Local Vicinity Map

Exhibit 2-2



Source: Carlson Barbee & Gibson (2003)



Scale: 1" = 1,500'

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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Existing General Plan

Exhibit 2-3

The Contra Costa County Community College site is east of Marsh Creek Road and the John Marsh Home. The community college site is west of the approved SR 4 Bypass. The southerly extension of Fairview Avenue would end approximately at the northern end of the community college site.

2.5 PROJECT CHARACTERISTICS

As described in Section 1.0 of this EIR, this document provides an evaluation of two projects. This EIR includes an evaluation of the environmental effects of development and operation of the Vineyards at Marsh Creek at a project-specific level of detail, in accordance with the known level of project details at the time of this writing. This EIR also includes an evaluation of the annexation of two sites (“Annexation Sites”) into the City of Brentwood, their rezoning, and proposed General Plan Amendments. However, there are no specific development or improvement plans for these two properties. There are also many uncertainties regarding the timing and funding of development of these annexation projects and, therefore, the EIR provides only a conceptual (i.e., “programmatic”) level of evaluation of these properties.

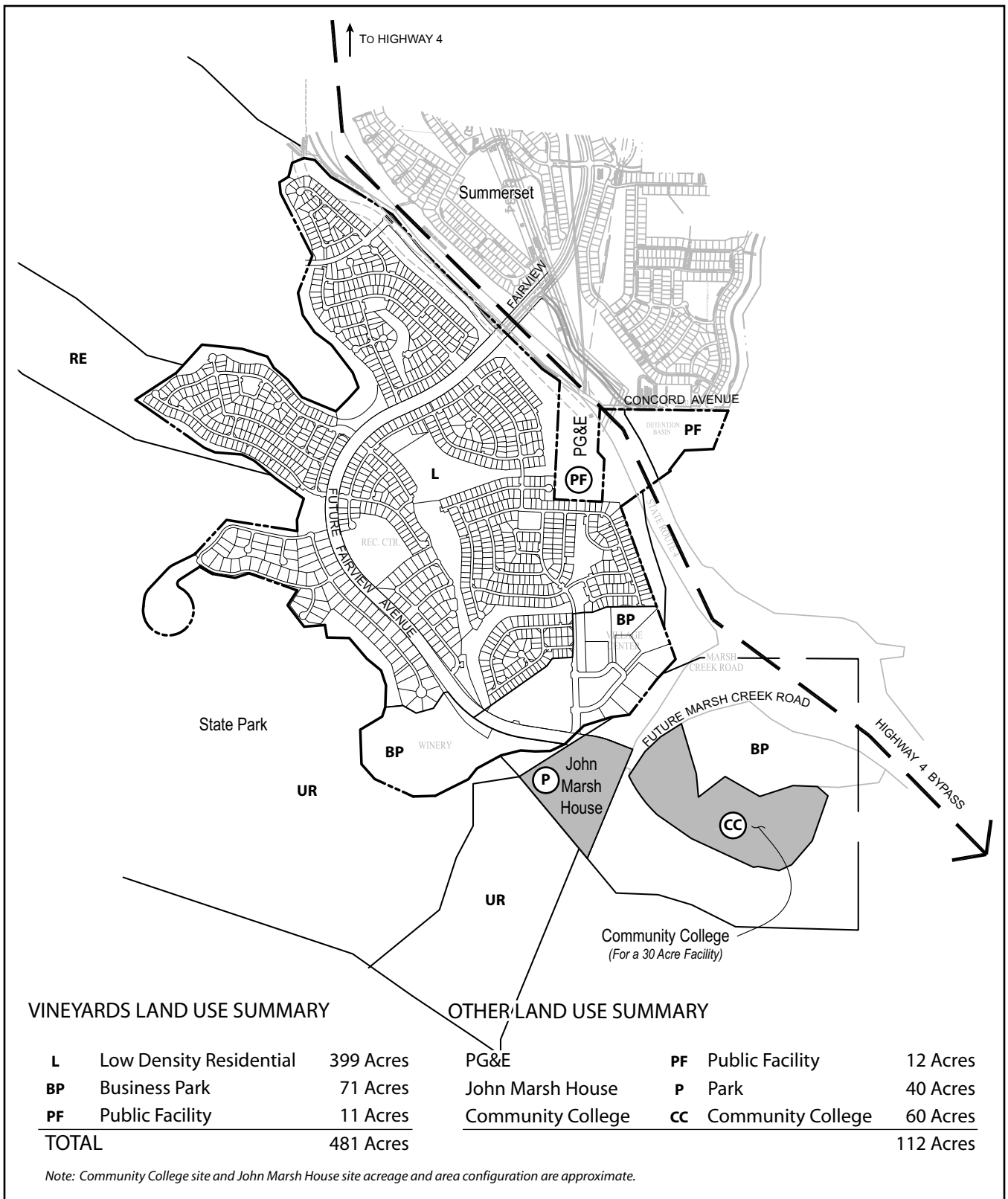
Vineyards Project

Proposed Land Uses and Entitlements/Approvals Sought

The Project Applicant requests City of Brentwood approval of a mixed-use development on 481 acres of land to include approximately 1,100 active adult units, approximately 150 single-family executive lots, and 35 acres reserved for a Village Center that could include commercial development, office development, a hotel and conference center, senior apartments, institutional levels of congregate residential facilities and multi-family residential units (Table 2-1 and Exhibit 2-4). In addition, as shown in Exhibit 2-5 (Site Plan), a 30-acre parcel would be created for development of a winery with an amphitheater. Vineyards and olive groves would be planted in open spaces permanently protected by conservation easements (Exhibit 2-6). The project includes the extension of Fairview Avenue through the site, and a bridge/overcrossing of across Marsh Creek for a new connection to Marsh Creek Road. Approximately 100 acres of open space, a majority of which is planted with vineyards and olive groves, would be associated with the plan.

The Applicant is requesting annexation into the City of Brentwood. The Vineyards project annexation would include annexation of the existing Pacific Gas & Electric (PG&E) facility (Brentwood Terminal) that is located adjacent to the Vineyards project site on the east. No changes are proposed to the PG&E facility; it is being included as part of the Vineyards project annexation to ensure that contiguous properties are included in the annexation proposal that will be considered by the City of Brentwood and the Local Agency Formation Commission (LAFCO).

The proposed development would require approval of an Annexation, Subdivision Map, General Plan Amendment (GPA), Rezoning and zoning, and Design Review. A Residential Growth Management Program (RGMP) allocation would need to be approved for the 150 executive lots, 1,100 Active Adult lots, 200 multi-family units, and 150 senior apartments. The applicant and the City are also considering a Development Agreement.



VINEYARDS LAND USE SUMMARY

L	Low Density Residential	399 Acres
BP	Business Park	71 Acres
PF	Public Facility	11 Acres
TOTAL		481 Acres

OTHER LAND USE SUMMARY

PG&E		PF	Public Facility	12 Acres
John Marsh House		P	Park	40 Acres
Community College		CC	Community College	60 Acres
				112 Acres

Note: Community College site and John Marsh House site acreage and area configuration are approximate.

Source: Carlson Barbee & Gibson (2003)



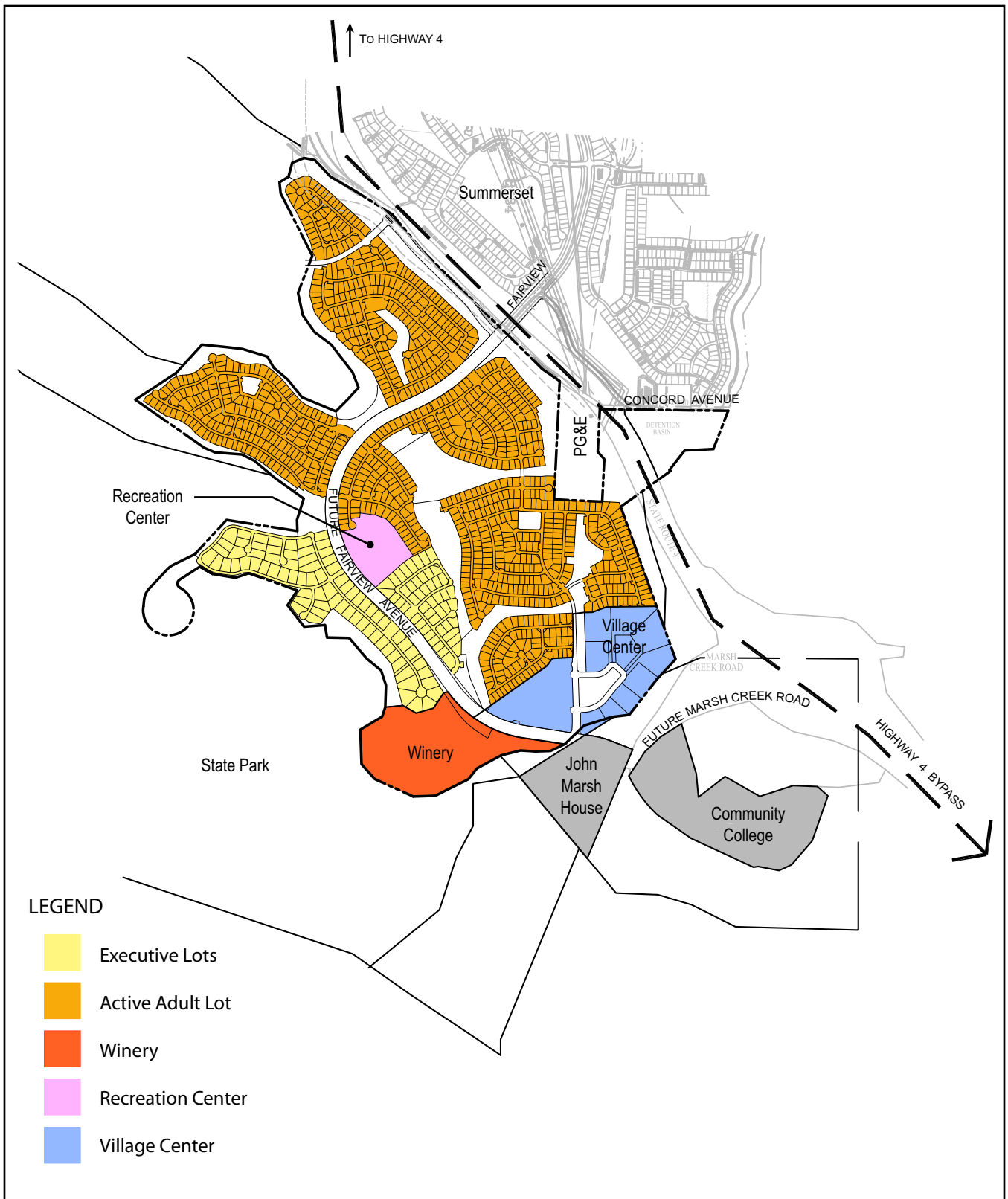
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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Proposed General Plan

Exhibit 2-4



Source: Carlson Barbee & Gibson (2003)



Scale: 1" = 1,500'

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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Proposed Site Plan

Exhibit 2-5



Source: Hart Howerton (2003)

TABLE 2-1 PROPOSED GENERAL PLAN LAND USE DESIGNATIONS FOR VINEYARDS AT MARSH CREEK PROJECT		
Proposed General Plan Land Use Map Designation	Upper Number of Housing Units or Commercial Square Footage Proposed	Approximate Acreage
Residential Low Density (1.1-5.0 du/ac, midrange 3.0 du/ac)	150 Executive Lots	50 acres
Residential Low Density (1.1-5.0 du/ac, midrange 3.0 du/ac) (includes public & private open space acreage)	1,100 Active Adult Lots	366 acres
Mixed Use Business Park (includes public park)	200 Multifamily units 150 Senior Apartments 75,000 s.f. Commercial/Retail/ Civic 30,000 s.f. Office 115,000 s.f. Hotel/Conference Center 200,000 s.f. Institutional Levels of Congregate Care	35 acres
Mixed Use Business Park	170,000 s.f. , Winery with outdoor 1,000-seat amphitheater	30 acres
Total:		481 acres
Source: Carlson, Barbee & Gibson, June 2003		

General Plan SPA J Text Amendments Proposed with Vineyards Project

The applicant proposes various amendments to the General Plan text. These are detailed in Appendix C. Generally the text amendments address the jobs/housing ratio in SPA J, the HCP policy in SPA J, and a description of the Vineyards project, including the Village Center.

The reasons for these changes are as follows:

- ❖ The change to the Jobs/housing ratio reflects the recent acquisition of 3,942 acres by the State for State Park uses. Overall 90% of the commercial/industrial and business park acreage (357 of 398 total acres) in SPA J are now unavailable for job generating uses. Consequently the ability to generate the level of jobs previously contemplated in SPA J is no longer likely.
- ❖ In addition, the timing to form an HCP is out of the City’s control. Continued coordination with the East County HCP Process is continuing. The southwestern area of SPA J is now a state park. The permanent protection of this ownership will preserve the vegetation and associated wildlife habitat of the area.
- ❖ Finally the revisions to the General Plan Land Uses describe the proposed land uses at the Vineyards project. These land use designations in the existing General Plan, with minor refinements to reflect the public input from the Community workshops and themes that emerged.

Major Infrastructure Components Proposed with Vineyards Project

Near-term Roadway Improvements

In the near-term (i.e., prior to approximately Year 2007) the project would add two southbound lanes and a multi-use path to existing Fairview Avenue south of Baldwin Drive. This widening of Fairview Avenue was previously approved with the Summerset Project. It would also extend *Fairview Avenue* from its current terminus with Concord Avenue as a two-lane roadway, to the Village Center and as a four-lane roadway across Marsh Creek (via a bridge), and south to Marsh Creek Road. The construction of Fairview Avenue through the project will require some relocation of the existing natural gas and crude oil pipelines onsite. The project would also reconstruct a small portion of *Concord Avenue* north of Fairview Avenue to transition past Briones Valley Road and south of Fairview Avenue to maintain access to PG&E's existing facility. This reconstructed Concord Avenue would become part of the new John Muir Parkway. When Segment 3 of the Bypass is constructed, it will cut off Concord Avenue heading south. To remedy this, the project will construct realigned Concord Avenue, north of the Bypass. This reconstruction of Concord Avenue was also a previously approved project with the Summerset Project. These segments of John Muir Parkway and Concord Avenue, may be constructed in advance by the Vineyards project if Bypass Fee Credits are made available. The construction of these, and other offsite improvements may rely upon the City maintaining coordination with the underlying landowner and allocating fees and fee credits, but most are within reserved easements for these purposes.

Soundwalls currently exist along the existing Summerset Development to the north of the site, along the SR 4 Bypass right of way. The project will construct 6-8 foot soundwalls in a similar manner along its residential frontages with the SR 4 Bypass and between residential uses and the Village Center. A berm would be provided along the west side of the PG&E facility in areas adjacent to Vineyards residential.

Long-term Roadway Improvements

The long-term (i.e., between approximately Years 2007 and 2025) roadway improvements would include the construction of an intersection with the community college site at the terminus of Fairview Avenue and Marsh Creek Road (this is another Bypass Authority improvement being constructed by the Vineyards project) and a signed "turn-around" at the entrance to the potential future community college site. The intersection improvements also include transition improvements south of Marsh Creek Road. Separate from this project, *John Muir Parkway* will replace the existing segment of Concord Avenue north of Fairview Avenue in the future from Balfour Road. Concord Avenue is planned to be realigned north of the Bypass. These segments of *John Muir Parkway*, from the project frontage to Ventura Avenue, may be constructed by the Vineyards project, or in advance by the Vineyards project if Bypass Fee Credits are made available. These roadway improvements include roadways that the project applicant would construct directly and other roadways that will be funded by the project through payment of fees to agencies.

Trail Improvements

The project may extend the Marsh Creek Trail from its current terminus at Concord Avenue, south along Marsh Creek to the future Village Center / Fairview Avenue intersection if the City of

Brentwood can acquire access to the property from the State Parks Department. This trail is a component of the City of Brentwood's approved Parks & Recreation Trails Master Plan and is located both on and off site.

Travel to the village shops and eateries, nearby golf courses, state park land and community college would be made easy by an interconnected system of multi-use pathways accommodating pedestrians, bicyclists, golf carts and Gen cars. As an option to future homeowners the developer will also provide a 220-kV outlet in each garage for charging of electric vehicles.

Proposed Water Supply System

Water service would be provided to the Vineyards project site from both Zones 2 and 3 of the City of Brentwood Municipal Water System. The City of Brentwood requires that a new Zone 2 pumping station be provided and serve all of the water requirements of the proposed project. Water supply planning includes the potential future needs for the Annexation Sites. Due to the fact that edible crops are proposed to be grown in the majority of the open space areas on the site, the project site will use ECCID water directly from the ECCID canal that will be undergrounded by the project.

The proposed project would include a pumping station and water storage reservoir for Zone 2 and a hydro-pneumatic pump and pressure tank for Zone 3. The proposed pumping station would be located near the intersection of Fairview Avenue and Concord Avenue. The Vineyards project requires 2 million gallons (2MG) of storage, but will develop a storage capacity of 4 MG for Vineyards project and City needs already identified in the current General Plan. Water lines will range in size from 8 inches to 20/24 inches. A 16-inch water main would be placed in the northern portion of Fairview Avenue, then traverse east through the neighborhoods, then south along the Vineyard project's eastern boundary to Marsh Creek Road. Another 12-inch water main would connect to the winery/amphitheater facility. From these water mains, 12-inch and 8-inch lines would lateral off into the multiple development areas. A majority of the onsite water lines would be 8 inches in size.

Proposed Sanitary Sewer System

The predicted sanitary sewer flow rates from the Vineyards project are based on City of Brentwood Engineering Design standards flow rates, and pipe capacities are based on generated flow rates using the Manning Formula. Pipe sizes will range from 4- and 8-inch laterals plus 10-inch laterals to 15-inch main lines and a 6-inch force main. The project's sanitary sewer system would provide primarily two main gravity flow lines that connect into existing service stubs at the Summerset subdivision, located east and north of the Vineyards project site. The 10-inch sanitary sewer main would be extended in the Fairview Avenue extension, at an approximate depth of 12 inches. The project will also extend a 15-inch line south along the western side of Marsh Creek existing at Concord Avenue. The 10-inch line will serve approximately 390 of the active adult single-family lots. The 15-inch line will serve approximately 860 of the active adult lots, all of the commercial/retail area the potential future community college and park site.

Proposed Drainage/Flood Control/Water Quality System

The Vineyards project would convey stormwater drainage through two sub-watersheds on the property site to emulate existing conditions. The Vineyards project proposes the construction of one detention

basins and one water quality basin. The first is a 41.5 acre-foot (41.5 AF) detention basin to be located along the eastern Vineyards project site, at Concord Avenue adjacent to Marsh Creek that would treat and detain stormwaters from the northern sub-watershed of the Vineyards site as well as accommodating runoff from the SR 4 Bypass. This detention basin will have a water quality basin within its boundaries. The project proposes a second 5 AF water quality basin, exclusively for water quality purposes. This basin will be located along the southern project boundary, adjacent to Marsh Creek and will treat the southern sub-watershed. Stormwater would ultimately be deposited into Marsh Creek after being routed through the basins.

Sequencing/Timing of Development of Vineyards Project

Grading

The Vineyards at Marsh Creek development areas are proposed to be graded concurrently to allow for balancing soils on the project site. Site grading is proposed to include a series of cut and fill areas designed to create the streets, building pads and transition slopes. Existing hills and ridgelines visible from outside the Vineyards project site will be retained. Oak trees are proposed to be retained onsite to the extent feasible. The amount of cut and fill is estimated to be 4.2 million cubic yards (mcy) exclusive of remedial grading, as specified in the Vineyards at Marsh Creek geotechnical report. No soils are proposed to be imported or exported with the project.

The exposed/graded areas are proposed to be hydroseeded in accordance with City of Brentwood requirements.

Development

Initial Active Adult neighborhoods in the northern portion of the site and the Recreation Center would be developed first to coincide with the extension of Fairview Avenue to the Recreation Center driveway. The balance of the Active Adult neighborhoods, the Executive lots, the winery, amphitheater and Village Center would be constructed with the extension of Fairview Avenue from the Recreation Center to the Village Center driveway and further to Marsh Creek Road. The winery may be allowed to begin construction prior to formal extension of Fairview Avenue to the Village Center. The residential components would likely be developed as dictated by market demand, which may occur over a number of years. However, as a worst-case assumption for EIR evaluation purposes, all of the residential and a small portion (12,000 s.f.) of commercial are assumed to be developed by approximately year 2005-2007 (referred to herein as the "Near-term"). By this time, it is assumed that the State Route 4 Bypass Authority would not have completed "Segment 3" (i.e., 3a and 3b) of the State Route 4, which is that portion immediately adjacent to the project's eastern boundary between Marsh Creek and Vasco Road. The Bypass authority has announced that they plan to bid Segment 3 in Fall of 2004.

After completion of the near-term components, it is assumed that the State Route 4 Bypass Authority would have completed Segment 3 and a connection would have been made to Marsh Creek Road. Then, the Village Center uses, Village Green and amphitheater at the winery would be developed.

Annexation Sites

Actions to be Considered by the City of Brentwood

In addition to the Vineyards project proposed by the applicant, the City of Brentwood will consider the annexation and General Plan Amendments and rezoning for two sites outside of the Vineyards at Marsh Creek project area and outside of the Urban Limit Line (ULL): an approximate 40-acre site including the historic John Marsh Home, and a 60-acre site, limited to development of a 30-acre community college campus (refer to Exhibit 2-4). The S.H. Cowell Foundation has an exclusive agreement with CCCCD for the district to acquire 30-acres of this site. This agreement is further based upon the District's ability to start construction within a certain period of time. The reason why the annexation site is 60 acres, is to facilitate a correction to the intended roadway alignment, so it lines up with the Fairview Avenue/Marsh Creek intersection. Community College Districts are formed pursuant to the State Education Code (§ 72000 *et seq.* and others). Therefore, the CCCCD is a state authority and it not required to implement or adhere to local policies, such as the City of Brentwood General Plan. However, the CCCCD has been a participating member of the initial Vineyards community workshops, and intends to continue to work closely in coordination with the City in realizing the joint goal of creating CCCCD's newest campus in the City of Brentwood.

The City will consider annexation of the two sites into the City of Brentwood municipal boundary to provide the properties with municipal services. It will also consider an amendment *from* Business Park *to* Parks on the John Marsh Home State Park site, and an amendment *from* Business Park *to* Schools, community college on the site for a potential new campus for a Contra Costa County Community College. The City will also consider adoption of the following text for the land use category to allow potential future development of a college: adding "CC community college" specifically to the School General Plan Categories, in Table 3 of the General Plan.

Potential Future Development of Annexation Sites

John Marsh Home

As funding becomes available, the California Department of Parks and Recreation would like to renovate the deteriorating John Marsh Home for public historic park uses. Potential future improvements to the John Marsh Home site may include a new parking area and development of an interpretative center. In the interim, and if the City and State Parks Department can come to agreement, the Vineyards project would develop a new access connection off Fairview Avenue and construct a gravel parking lot with portable restrooms. Other than these interim improvements, no site or improvement plans have been developed for the John Marsh Home. Moreover, the amount and certainty of any future funding is not known. Consequently, this EIR can only provide a "programmatic evaluation" of the types of impacts that may occur with future improvements/use of the John Marsh Home. When and if funding becomes available and an improvement plan is designed, the future John Marsh Home may require further environmental evaluation, pursuant to the CEQA. In the interim, if the City and the State Parks Department can come to agreement, the Vineyards project may construct an informal parking lot (e.g., for 20 cars) on the site.

Community College

The Contra Costa Community College District has an interest in developing a new community college campus on 30 acres of the 60-acre site to be annexed into the City of Brentwood. No designs or development plans exist for this potential future campus. However, this EIR will consider the potential for development of a community college that could serve up to 5,000 college students. Again, no site plans, elevations, or other development concepts have been developed for the CCCCDC site. Consequently, this EIR will evaluate the community college at a “programmatic” level – commensurate with the many unknowns about the future development of the college.

2.6 PROJECT OBJECTIVES FOR VINEYARDS PROJECT

1. To implement the City’s General Plan and SPA J goals by providing for mixed use development for which adequate services can be provided in a timely manner.
2. To locate new employment-generating development adjacent to the Highway 4 Bypass planned interchange at Marsh Creek Road.
3. To design infrastructure facilities that will serve the project immediately and throughout its lifetime, and may also be integrated into future improvements at the John Marsh Home and community college site should development plans for those sites be forthcoming.
4. To help the County and the City of Brentwood provide for its fair share of housing needs by providing a mix of housing types and sizes, including affordable housing, available to a wide range of income levels, and which can meet the needs of a variety of different household sizes.
5. To alleviate a regional (Bay Area) housing shortage by providing housing that is close to major transportation corridors.
6. To provide an integrated and cohesive residential development project at a scale and quality similar to recent Brentwood residential developments in the project area.
7. To fulfill the Cowell Foundation’s intended use of the Cowell Ranch by allowing for limiting development on that portion of the Ranch that was not dedicated to the State of California for park/open space use and designing a project that is responsive to the natural features of the land within the confines of the development constraints while respecting the site’s adjacency to the State park.
8. To implement the County’s Growth Management Program by providing for urban development within the Urban Limit Line.
9. To develop an attractive and visually identifiable residential community with a site plan design that would be compatible with the surrounding setting, the design and intensity of proximate residential uses and with other nearby land use patterns, densities and intensities.
10. To expand local recreational opportunities to meet the passive and active recreational needs of residents.
11. To provide the City of Brentwood with the opportunity to attract a regional destination winery, amphitheater and potential hotel, and conference center with access from major regional roadway facilities.

12. To provide a range of facilities for senior residents, from detached homes to congregate care facilities, in order to continue to meet the needs of the population as they age.

2.7 PROJECT OBJECTIVES FOR ANNEXATION SITES

1. To implement the City's General Plan and SPA J goals by providing parks and schools, for which adequate services can be provided in a timely manner.
2. To improve access to Brentwood area parks and schools for the enjoyment of the community as a whole.

2.8 INTENDED USES OF THIS EIR

This Vineyards at Marsh Creek EIR would be used by the City of Brentwood as the environmental review, prepared pursuant to CEQA, for the approval of entitlements sought by the project applicant and for the City's consideration of general plan amendments and rezoning and for annexation of the Annexation Sites. Moreover, the City may use this EIR for agreements to provide water service, wastewater service, and solid waste disposal services (upon transfer from Contra Costa County), and to issue permits, certificates of occupancy and other project-related approvals. It is also intended to be available for use by Responsible and Trustee Agencies or other agencies that may have jurisdiction or approval authority for the project, project components, or related projects. Some of these other agencies may use this EIR for such purposes as described below:

- ❖ Bay Area Air Quality Management District (BAAQMD): For the issuance of permits that may be required to operate stationary source mechanical equipment.
- ❖ California Department of Fish and Game (CDFG): For the purposes of issuing California incidental take permits pursuant to the California Endangered Species Act and for issuing Lake and Streambed Alteration Agreements pursuant to the California Fish and Game Code Sections 1600 to 1607.
- ❖ California State Department of Parks and Recreation: This agency may use this EIR for park planning purposes, consideration of improvements to the John Marsh Home site, and for approval, to the extent required, of offsite improvements, and mitigation measures for the Vineyards project.
- ❖ Contra Costa County Community Development Department-Solid Waste Division: For the approval to supply solid waste disposal services for five years following Vineyards site annexation to the City of Brentwood.
- ❖ Contra Costa County Flood Control and Water Conservation District: For approval of any storm drain facilities including detention/retention basins and approval of a Flood Control Permit for any work conducted within the agency's jurisdiction.
- ❖ California State Department of Transportation (Caltrans): For issuance of any encroachment permits or approval of any facilities proposed within State highway right-of-ways.
- ❖ Contra Costa Community College District (CCCCD): Review of the potential community college site for annexation, rezoning and/or possible future development issues.

- ❖ Department of Toxic Substances Control (DTSC): In the event permits are required for the use, transport or storage of hazardous materials, or remediation plans are required for any existing site clean up.
- ❖ East Contra Costa County Irrigation District (ECCID): For the approval of ECCID facilities and extension of any lines to the project site and annexation of project agricultural parcels into its jurisdiction.
- ❖ Local Agency Formation Commission (LAFCO): For the annexation of the Vineyards at Marsh Creek project site, the intervening Bypass Authority and PG&E Property, and the John Marsh Home and community college sites from Contra Costa County to the City of Brentwood. LAFCO may also use the EIR to consider and approve any service district boundary adjustments necessary to serve the Vineyards at Marsh Creek project and Annexation Sites, including ECCID.
- ❖ Regional Water Quality Control Board (RWQCB) – Central Valley: As a delegated authority of the State Water Resources Control Board, the RWQCB may be required to issue General Construction Permits and NPDES Permits. The RWQCB may also issue a certification that development activity will not violate state standards.
- ❖ State Office of Historic Preservation (OHP)/State Historic Preservation Officer (SHPO): This agency may be involved with the review of cultural resources that may be eligible for listing on the State or National Register of Historic Places and has administrative responsibilities in accordance with the American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, the Antiquities Act and Archaeological Resources Protection Act.
- ❖ United States Army Corps of Engineers (USACE): This agency may be required to issue permits in accordance with the federal Clean Water Act of 1972 such as 404 Permits (e.g., Nationwide or Individual), Incidental Take Permits (for species protected under the Endangered Species Act), and Section 401 Water Quality Certifications.
- ❖ United States Fish and Wildlife Service (USFWS): This agency may be involved in potential Section 7 or Section 10 consultation, issuance of Biological Opinions and Incidental Take Permits (for species protected under the Endangered Species Act or the Migratory Bird Treaty Act).

3.0 ENVIRONMENTAL IMPACT ANALYSIS

Sections 3.1 through 3.13 herein discuss the potential environmental impacts that would result with approval and implementation of the proposed Vineyards at Marsh Creek project and Annexation Sites. Environmental topics evaluated include: Land Use, Agricultural Resources, Population and Housing; Transportation and Circulation; Air Quality; Noise; Visual Resources; Soils, Geology, Seismicity, and Mineral Resources; Hazards and Hazardous Materials; Biological Resources; Hydrology, Drainage, and Water Quality; Cultural Resources; Utilities and Service Systems; Public Services. Each of Sections 3.1 through 3.13 are organized as follows:

- ❖ **Existing Conditions:** The on-site and, as relevant, surrounding environmental conditions in existence at the time of publication of NOP, pursuant to State CEQA Guidelines.
- ❖ **Environmental Impacts:** Changes that would result to the existing physical environment should the proposed project be approved in accordance with State CEQA Guidelines. Pursuant to CEQA and the State CEQA Guidelines, this section will focus the discussion on the significant effects that may result if the project is approved.

Project impacts are numbered sequentially beginning with the section numbering. For example, impacts found in Section 3.3 are numbered 3.3-A, 3.3-B, 3.3-C and so forth. Impacts discussed in Section 3.5 are numbered 3.5-A, 3.5-B, 3.5-C and so on. A summary of the impact is presented first, and the evaluation follows.

- ❖ **Mitigation Measures:** In accordance with CEQA and the State CEQA Guidelines, mitigation measures are required, if feasible, when significant impacts are identified. Unless otherwise noted, all mitigation measures contained herein are proposed by the lead agency. Where a mitigation measure would cause a significant impact in addition to the impact caused by the project alone, such situation will be discussed, though at a lesser level of detail than the impact discussion. “Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally-binding instruments. In the case of adoption of a plan, policy, regulation, or other public project, mitigation measures can be incorporated into the plan, policy, regulation, or project design.” State CEQA Guidelines § 15126.4(a)(2).

Similar to the environmental impacts, the mitigation measures are numbered sequentially and in correlation to the significant impact(s) being reduced. Therefore, mitigation measures associated to reduce Impact 3.3-A will be numbered Mitigation 3.3-A.

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3.1 LAND USE AND PLANNING

3.1.1 ENVIRONMENTAL SETTING

Onsite and Surrounding Land Uses

Vineyards Project Site

The proposed Vineyards project site is located in the southwest portion of the City of Brentwood's Planning Area. The project site is located on Concord Avenue, south of Balfour Road, and north of Marsh Creek Road (refer to Exhibit 2-2).

The site is approximately 481 acres and is bordered by, and situated inside of, the County's Urban Limit Line (ULL).¹ The site is entirely within the City of Brentwood Sphere of Influence (SOI) (Exhibit 3-1). The project site is located within the northeastern portion of the City of Brentwood General Plan's Special Planning Area J (SPA J). There are 19 Special Planning Areas (SPA's) identified in the Brentwood General Plan, 2001-2021. The purpose of these SPA's are to facilitate comprehensive planning to maximize economic development, ensure high-quality development, and to integrate development with the provision of infrastructure.

The project area is bordered by the existing Summerset Active Adult Residential Community to the north and east, and by a California State Park to the west and south. The State Park property includes vacant land, orchards and the historic John Marsh Home and the Marsh Creek Reservoir.

Upon completion, Segment 3 of the planned State Route 4 (SR 4) Bypass will border the project site along the north and east. An interchange is planned on the SR 4 Bypass with Marsh Creek Road, and would be situated adjacent to the site on the southeast. The SR 4 Bypass project is an approved expressway (250-foot right of way) to be developed between SR 4 and a relocated Vasco Road. An upgrade to Marsh Creek Road will provide a connector (with a 110-foot right of way) between the Bypass and SR 4.

PG&E operates an existing transmission facility on a 14-acre parcel located between the Vineyards Project site and the State Route 4 Bypass. These 14 acres would be annexed to the City with the Vineyards Project to make a contiguous annexation. No physical changes are expected on the PG&E site.

Annexation Sites

The John Marsh Home and Community College (Annexation Sites) are located to the south and southwest of the Vineyards project site, respectively, and total approximately 100 acres. The sites are also located outside of the County's ULL but are within the City of Brentwood's Sphere of Influence and planning area and are proposed to be annexed into the City's municipal boundaries. The City of Brentwood will also consider General Plan Amendments and rezoning on both sites.

¹ Some portions of the site, upon which a water tank and detention basin would be located, are outside the ULL and are allowed uses outside the ULL. All areas proposed for urban development are inside the ULL.

Community College Site

The Community College site is currently vacant and encompasses approximately 60 acres of land, with approximately 30-acres potentially developable, that was donated by the Cowell Foundation to the Contra Costa Community College District (CCCCD) for the creation of a community college that would serve the growing far east region of the County. The District has two years to exercise the irrevocable option for the property, and 10 years to construct the campus, not including potential time extensions (Memorandum of Option, 2000). In approving the option agreement, the CCCC Board noted that the property “presents the most desirable and tangible site to further the future efforts of the District to locate a permanent educational center in the Brentwood area.” (CCCCD Governing Board Minutes, October 25, 2000). Approximately 30 acres of the 60-acre would potentially be developed with a community college. The residual 30 acres within the annexation site would remain open space in State Park ownership.

No development plans for the Community College are currently proposed. Annexation of the site will be considered by the City of Brentwood as will a General Plan Amendment and rezoning. It is anticipated that a potential future college on this site would serve up to 5,000 students.

John Marsh Home Site

The Cowell Foundation sold approximately 3,942 acres of land to The Trust for Public Land. The Trust for Public Land conveyed the land to the state park system for preservation in perpetuity in November 2002 (refer to Exhibit 2-2). The California Department of Parks and Recreation plans to develop a master plan for the State Park area, which is near the approximately 20,000-acre Mount Diablo State Park.

One of the distinguishing features of the State Park site is the historic John Marsh Home and surrounding compound. The home and the surrounding compound encompass approximately 40 acres, which the City of Brentwood will consider for annexation, a General Plan Amendment and rezoning.

Contra Costa County General Plan

The Contra Costa County General Plan 1995-2010 presents the broad goals and policies, and specific implementation measures, which will guide decisions on future growth, development, and the conservation of resources within the County (Contra Costa County, 1996). The County’s planning area stretches approximately 40 miles from west to east and approximately 20 miles from north to south. The County covers a total of approximately 805 square miles.

The Contra Costa County General Plan breaks the County into three distinct areas; West County, Central County, and East County. The proposed Vineyards project and Annexation Sites are located in the East County area. The East County area is further broken into two sub-areas: the Pittsburg-Antioch area, and the “Other East County” area. The proposed Vineyard project site and Annexation Sites are located in the “Other East County” area. The proposed Vineyards project site and the Annexation Sites are currently designated in the County’s General Plan as Agricultural Lands (AL).

The AL land use designation includes most of the privately owned rural lands in Contra Costa County, excluding the private lands containing prime soils or lands in or near the Delta. Most of the AL designated lands are currently used for grazing livestock and farming dry grain. The proposed Vineyards project site is currently used for grazing livestock.

The goals and policies of the Contra Costa County General Plan that would be relevant to the Annexation Site and Vineyards project would primarily be those pertaining to the 65/35 Land Preservation Standard and the Urban Limit Line.

65/35 Land Preservation Standard

In 1990, the voters of the County approved the Measure C, which established the Contra Costa County 65/35 Land Preservation Standard for inclusion in the General Plan. The subsequently adopted General Plan essentially requires that 65% of land in the County be preserved for parks, open space, agriculture, wetlands, and other non-urban uses. The remaining 35% could be developed with urban land uses. In addition, the policies of the General Plan are intended to protect the economic viability of agricultural land, protect hillsides and significant ridgelines, manage growth by allowing development to only occur where infrastructure and service standards can be met, and to promote cooperation between the County, Cities, and other applicable agencies and service districts to protect agricultural and open space lands.

Urban Limit Line

The 65/35 Land Preservation Standard also established a policy to develop an ULL. The ULL seeks to preserve identified non-urban agricultural, open space, and other areas by establishing a line beyond which no urban land uses can be designated and to facilitate the enforcement of the 65/35 Land Preservation Standard described above. A number of factors were considered when establishing the ULL. Lands qualifying as prime farmland, lands with slopes in excess of 26 percent, expansive open space lands, and lands containing substantial wetlands were generally placed outside of the ULL. Other lands deemed to be inappropriate sites for urban growth due to physical constraints, geologic instability, inadequate water, lack of infrastructure, distance to existing development, and potential for environmental damage were also placed outside of the ULL. As further described in the Vineyards Project History in Chapter 2, the portion of the Vineyards project proposed for urban development is inside the ULL.

Existing City of Brentwood General Plan

The Brentwood General Plan serves as the City's guiding document for managing development and promoting orderly growth. The City of Brentwood has experienced rapid growth over the past decade. Between 1993 and 1999, the City's population nearly doubled. A comprehensive General Plan Update (GPU) was conducted in 1993. Based on the rapid population growth during the following years, the City Council initiated a focused GPU of the City's Land Use, Circulation, and Growth Management General Plan Elements. A General Plan Working Group was formed for the update process, which also included a substantial amount of public participation. The General Plan Working Group served as the steering committee for the entire update. The Brentwood City Council adopted the updated General Plan in November of 2001.

The Brentwood Planning Area is comprised of approximately 39,800 acres, or 66 square miles (Exhibit 3.1-1). At the time of the GPU, there were approximately 7,600 acres within Brentwood’s City limits and approximately 13,300 acres within the City’s Sphere of Influence (SOI). The Brentwood Planning Area was expanded during the GPU, and is generally bounded by Delta Road and Neroly Road (north), Bixler Road (east), the south side of Camino Diablo Road (south), and Heidorn Ranch Road and Deer Valley Road (west).

The Land Use Element of the General Plan established land use designations, goals and policies that reflect the community’s desires for the future of Brentwood and provide guidance for growth and conservation to the year 2021. The Land Use Element takes into account the development pressures facing eastern Contra Costa County, while providing for a balanced level of employment opportunities and housing, and preserving a balance of open space and productive agricultural lands with urban uses.

Existing Brentwood General Plan Land Uses

Vineyards Project

Among the approvals sought by the project applicant is a General Plan Amendment (GPA). The existing General Plan Land Use designations that currently apply to the proposed project site are shown in Table 3.1-1.

TABLE 3.1-1 EXISTING GENERAL PLAN LAND USE DESIGNATIONS VINEYARDS PROJECT	
Current Land Use Map Designation	Approximate Acreage
Residential Ranchette Estate (0-1.0 du/ac, midrange 0.5 du/ac)	35 Acres
Residential Very Low Density (1.1-3.0 du/ac, midrange 2.0 du/ac)	209 Acres
Residential Low Density (1.1-5.0 du/ac midrange 3.0 du/ac)	101 Acres
Mixed Use Business Park	41 Acres
School Site (Site indicated but no acreage specified)	
Urban Reserve	95 Acres
Park Site (Site indicated but no acreage specified)	
Total Developable General Plan Acreage within SPA J	481 Acres
Source: Brentwood General Plan, 2003	

As described in the Project Description, Section 2.0 of this EIR, the proposed Vineyards project site is located on the north central portion of an area once referred to as Cowell Ranch. In 2000, the County reduced its ULL thereby placing most of the Cowell Ranch land outside of the ULL and, therefore, no longer available for urban development. The proposed project site is the remaining area of the ranch that was not placed outside of the ULL and is the portion of the ranch selected for urban development. The lands outside of the ULL are now designated as a California State Park with the exception of the community college site. The lands outside the ULL include vacant land and the historic John Marsh

Home and the Marsh Creek Reservoir. The proposed Vineyards project site is currently vacant and primarily used as pasture land. The site is generally characterized by open rolling, grass-covered hills with widely scattered oak trees.

Annexation Sites

The City of Brentwood will consider annexation of the 60-acre Community College site and the 40-acre John Marsh Home Site. The Community College site is primarily flat, undeveloped land. The John Marsh Home site is, as its names implies, the site of the John Marsh Home. The John Marsh Home dates back to 1856 and is currently in a state of disrepair. Long-term plans are that, once restoration efforts are complete, public access to the grounds will be permitted. Limited public access to the grounds would continue in the short term. To improve upon public access, the Vineyards project would install access improvements including a driveway off Fairview Avenue, a gravel parking area and portable restrooms. The existing General Plan Land Use designations that currently apply to the proposed Annexation Sites are shown in Table 3.1-2.

TABLE 3.1-2 EXISTING GENERAL PLAN LAND USE DESIGNATIONS ANNEXATION SITES	
Current Land Use Map Designation	Approximate Acreage
John Marsh Home Site <i>Business Park</i>	40 Acres
Community College Site <i>Business Park</i>	60 Acres (30 developable acres)
Source: Carlson, Barbee, & Gibson, 2003	

The General Plan Amendment for the Community College site would change from Business Park to a new designation of Schools, Community College. The land use designation on the John Marsh Home site is proposed to be amended from Business Park to Park.

Relevant Goals, Objectives, and Policies

The Brentwood General Plan 2001-2021 contains a number of policies that direct the future and long-term use of the Vineyards project site and Annexation Sites. Other General Plan policies relevant to other environmental topics evaluated in this EIR are incorporated into those sections and are not duplicated in this land use resources discussion. Goals and policies relevant to land use resources are found in the Land Use Element and Conservation Element of the General Plan. The following are the goals, policies and action programs contained in the General Plans Land Use Element applicable to the proposed Vineyards project and Annexation Sites.

Goal 1: Facilities & Services

The Facilities and Services goal of the Land Use Element is to accomplish, “a diverse, self-sufficient community that offers a broad spectrum of job opportunities, housing types, community facilities, and

commercial services.” The specific policies and action programs to accomplish this goal that are applicable to the proposed Vineyards project are listed below.

- ❖ Policy 1.1 City Development Control: Maintain responsible City control of development within the Planning area.
- ❖ Policy 1.2 Balanced Neighborhoods: Promote neighborhoods that provide a balanced mix of land uses and development types.
- ❖ Policy 1.3 Community Design: Ensure that new development is designed to promote convenient, comfortable, and safe pedestrian use.

Goal 2: Quality Residential

The Quality Residential Goal of the Land Use Element seeks to accomplish “a high quality residential environment that positively contributes to the special small town atmosphere of Brentwood.” The specific policies and action programs to accomplish this goal that is applicable to the proposed Vineyards project are listed below.

- ❖ Policy 2.1 Compatible Neighborhoods: Promote compatibility between and within new and existing neighborhoods.

Goal 3: Economic Vitality

The Economic Vitality goal of the Land Use element seeks to accomplish, “a diversified mix of strong retail centers, service commercial activities, manufacturing enterprises and high-paying employment opportunities that contribute to Brentwood’s economic well being”. The specific policies and action programs included to attain the goal are not relevant to the proposed Vineyards project.

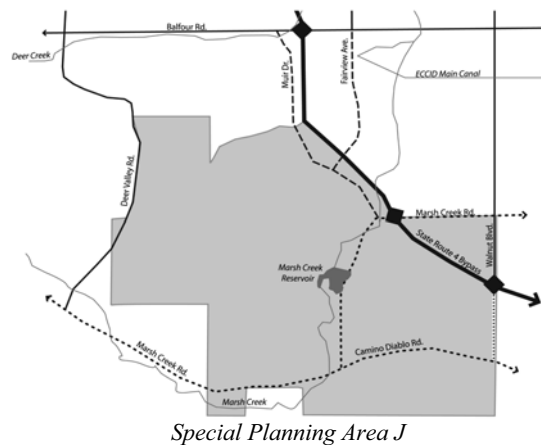
Goal 4: Employment Opportunities

The Employment Opportunities goal of the Land Use element seeks to provide, “a variety of employment opportunities in Brentwood provided by adequate areas for industrial, commercial, and office land uses.” The specific policies and action programs to accomplish this goal that are applicable to the proposed Vineyards project are listed below.

- ❖ Policy 4.3 Office Campuses, Business Parks, Industrial Parks: Encourage the location of high-quality, professional office campuses, business parks, and industrial parks along with related mixed-use development, where appropriate within the City.

Special Planning Area J

The Vineyards project and Annexation Sites are located within the northeastern portion of the City of Brentwood General Plan’s Special Planning Area J (SPA J). There are 19 Special Planning Areas (SPA’s) identified in the Brentwood General Plan,



2001-2021. The purpose of these SPA's are to facilitate comprehensive planning to maximize economic development, ensure high-quality development, and to integrate development with the provision of infrastructure.

Development in the SPA's designated in the General Plan require a Specific Plan or Planned Development Zoning where there are more than one property owner or where there are significant unresolved issues. This process is intended to facilitate high-quality development, allow for coordination of planning efforts among multiple land owners, allow for infrastructure cost sharing, provide developments which are sensitive to the natural environment, and to provide special amenities such as golf courses, lakes, open space, parks, etc. The Vineyards project includes a proposal for Planned Development Zoning and the Annexation Sites would be rezoned Planned Development.

Special Planning Area J is described, at the time of adoption of the General Plan, as being approximately 5,500 acres in size, located in the southwest corner of the General Plan's Planning Area. This number does not reflect the approximately 1,000-acre purchase for the Los Vaqueros Reservoir to the south. Therefore, SPA J's potential developable acreage as identified in the General Plan is 4,437 Acres. Approximately 50% of the SPA is located outside of the City's Sphere of Influence. Since adoption of the General Plan, however, nearly 4,000 acres of SPA J became a State Park leaving 618 acres in the SPA, including the Vineyards Project site and 170 acres south of Marsh Creek Road and west of Walnut Boulevard.

The policy direction for SPA J seeks to create a balanced mixed-use, master planned development that offers a range of housing and employment opportunities along with open space, parks, commercial activities, schools, and appropriate civic uses to provide a development that occurs in a compact urban form in order to encourage pedestrian and transit use with close proximity of housing to jobs, shopping, and community facilities. SPA J policies state that development shall occur in a compact urban form. Residential development shall provide a range of densities and housing types from apartments to entry-level affordable ownership units to large executive homes. The Vineyards project and Annexation Sites are designed to further these policies.

This SPA also seeks to provide sufficient land for employment generating uses. As adopted in 2001, the General Plan states commercial uses within the SPA shall be developed to meet the daily service needs of the residents in an attempt to bring the City's Jobs/Housing balance ratio to 1.5 jobs per household. The Vineyards project includes a proposal to amend this requirement in light of the loss of land designated for commercial uses due to acquisition of that property by the State for park purposes. The General Plan also states a minimum of 60% of the area inside the City's SOI would be designated as urban reserve and all areas outside of the City's SOI would be designated as Open Space. The Vineyards project also seeks to amend that text.

Unlike the other SPA's described in the General Plan, a precise mix of land uses and/or design objectives was not suggested due to the large size of SPA J and the fact that the City is working with landowners on the future planning of land within the SPA.

City of Brentwood Zoning Ordinance

Vineyards Project

As the proposed Vineyards project site is currently located outside of the city limits, no zoning designations have been assigned for the property. The project applicant is requesting annexation into the City of Brentwood. The applicant is requesting rezoning of the project site as Planned Development (PD), as required in SPA J. PD zones in the City of Brentwood are developed on an individual basis and requires the development and adoption of zoning ordinance text specifically for the sites seeking the PD designation. In an annexation process, the Local Agency Formation Commission (LAFCO) requires that a property be "rezoned" to a land use or series of land uses that reflect the annexing agency's General Plan. In this way, once the annexation is effective, the property would have zoning. The site would assume the rezoned designation as it's zoning upon annexation.

Annexation Sites

As the John Marsh Home and Community College sites are currently located outside of the city limits, no zoning designations have been assigned for the properties. The City of Brentwood is considering annexation into the City limits. The sites would require rezoning. These sites would be rezoned as a "Shell PD" with the detailed text developed when a project is proposed. PD zones in the City of Brentwood are developed on an individual basis and require the development and adoption of zoning ordinance text specifically for the sites seeking the PD designation. The sites would assume the rezoned designation as their zoning upon annexation.

Contra Costa Local Agency Formation Commission (LAFCO)

The Contra Costa LAFCO has jurisdiction over changes in local government organizations occurring within the County (e.g. annexations, district boundary changes). State law created LAFCO's in 1963 to encourage the orderly formation of local government agencies, to preserve agricultural and open space land, and to discourage urban sprawl. The Contra Costa LAFCO consists of a seven-member commission composed of two members of the County Board of Supervisors, two members representing cities in the County, two members representing the independent special districts in the County, and one member of the public.

LAFCO periodically reviews and updates the spheres of influence (SOIs) of local agencies in Contra Costa County. LAFCO requires that sites proposed for annexation be located within the City's SOI and can be served by necessary service providers (i.e. water, wastewater, solid waste).

Upon receipt of an application for annexation, the LAFCO Executive Officer will review the application for completeness and determine which agency will serve as the Lead Agency. The lead agency for the proposed Vineyards project and Annexation Sites is the City of Brentwood Community Development Department. The Executive Officer will then determine if a satisfactory exchange of property tax has taken place. Affected County departments, agencies, and other counties LAFCOs are contacted to review the proposal prior to a public hearing. The Executive Officer then prepares a staff report and recommendation. A public hearing is held where the LAFCO Commission will review the report and recommendation. Within 35 days of the hearing the Commission must adopt a resolution approving or denying the proposal, assign a short-term designation (pre-zoning), and authorize the

processing. The Executive Officer then sends the resolution to the applicant and affected agencies whose boundaries will be changed by the proposal.

Upon completion of the proceedings, the Executive Officer is prepares and executes a certificate of completion and records it with the County Recorder. A statement of boundary change is issued by the Executive Officer and filed with the State Board of Equalization, County Auditor, and County Assessor.

3.1.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Significant impacts related to land use, applicable plans, and policies were determined from criteria stated in *Appendix G of the State CEQA Guidelines*. A significant land use and planning impact would result if the project would:

- ❖ Physically divide an established community;
- ❖ Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect;
- ❖ Conflict with any applicable habitat conservation plan or natural community conservation plan;

IMPACT 3.1-A. Physically Divide An Established Community - Vineyards Project and Annexation Sites: The proposed Vineyards project and Annexation Sites would occur on the southwestern side of the City of Brentwood on sites that are currently undeveloped planned for urban uses through the General Plan and the direction given for Special Planning Area J. No physical division of an established community would occur. (No Impact).

Neither the proposed Vineyards project nor the Annexation Sites would divide an established community. In general, projects that introduce physical barriers that divide an existing community into separate areas or districts have the potential result in significant impacts. An example of this type of project would be the construction of a freeway through an established residential neighborhood.

Vineyards Project

The proposed Vineyards project would not involve the construction of any physical barriers through an existing community. The Vineyards project site is currently undeveloped and is planned for urban uses through the General Plan and the direction given for Special Planning Area J. The site is bordered by vacant land on the northwest, south, and southwest sides and is flanked by Concord Avenue, the Highway 4 Bypass right of way, and the existing Summerset Development on the north and northeast sides.

Annexation Sites

Similarly, the future potential college and park use of the John Marsh Home would also not result in the physical division of an established community. The Annexation Sites would be planned for potential future urban uses through the General Plan and direction given for SPA J. Development, if any, would occur on the southwestern side the City of Brentwood, and would not result in the physical division of an established community.

No significant impacts related to the physical division of established communities would occur as a result of the Vineyards project or Annexation Sites.

Mitigation 3.1-A. Physically Divide An Established Community – Vineyards Project and Annexation Sites: The proposed Vineyards project and Annexation Sites would not result in a physical division of an established community and, therefore, no mitigation is required. (No Impact).

IMPACT 3.1-B. Consistency with Contra Costa County General Plan Policies – Vineyards Project and Annexation Sites: The proposed Vineyards project and Annexation Sites are located within the City of Brentwood’s Sphere of Influence and would be annexed into the City limits. The annexation of the Vineyards project site and the Annexation Sites would be consistent with the relevant goals and policies of the Contra Costa County General Plan, 1995-2010. (Less Than Significant Impact).

The proposed Vineyards project site and the Annexation Sites are located within the City of Brentwood’s Sphere of Influence. The Local Agency Formation Commission (LAFCO) adopts a Sphere of Influence (SOI) boundary for each city and special district. The SOI includes lands that are anticipated to be ultimately annexed and served by the agency within whose SOI the lands are located. Therefore, through the establishment of the SOI line and inclusion of the Vineyards project site and the Annexation Sites, urban land uses and annexation of these sites to the City of Brentwood has been anticipated in the Contra Costa County General Plan.

The 448-acre portion of the Vineyards project site proposed for urban development is located within the established ULL. In August of 2000, the ULL in the area of the Vineyards project site was adjusted to its current location specifically to allow development of the Vineyards project site and is now the boundary of the Vineyards project (refer to Section 2.2). Construction of a water tank and detention basin on the 33 acres of the project site outside the ULL is consistent with the County’s ULL policies because such uses are not urban uses.

The Annexation Sites are not located within the ULL. However, the annexation of the sites and the potential development that may occur on these sites would be consistent with the Contra Costa General Plan. As only park-type development would occur on the John Marsh Home site, the site would be consistent with the County’s policy to limit urban development to areas within the ULL. The Community College site could be developed with a community college, which also is an allowed use outside the ULL.

Mitigation 3.1-B. Consistency With Contra Costa County General Plan Policies – Vineyards Project and Annexation Sites: No mitigation required. (Less Than Significant Impact).

IMPACT 3.1-C. Consistency with City of Brentwood Land Use Policies - Vineyards Project and Annexation Sites: The proposed Vineyards project would require a General Plan Amendment. The amendment and the construction of the proposed Vineyards project would not conflict with the overall goals and policies of the Brentwood General Plan. In addition, the proposed land uses would generally be compatible with surrounding land uses. The proposed General Plan Amendment would result in consistency with the General Plan and the Special Planning Area with regard to the Vineyards project. The Annexation Sites are also proposed for a General Plan Amendment. The amendment and future development of the sites as currently anticipated would not conflict with the overall goals of and policies of the Brentwood General Plan. The proposed General Plan Amendment would result in consistency with the General Plan and the Special Planning Area with regard to the Annexation Sites. (Less Than Significant Impact).

City of Brentwood General Plan

The City of Brentwood will consider annexation of the John Marsh Home site and the Community College site. The proposed General Plan Land Use Designations, to be accomplished through GPA approvals, are shown in Table 3.1-3. In addition, the proposed GPA’s are included as Appendix C.

TABLE 3.1-3 PROPOSED GENERAL PLAN LAND USE DESIGNATIONS ANNEXATION SITES	
Proposed Land Use Map Designation	Approximate Acreage of Proposed Land Use
John Marsh Home <i>Park</i>	40 Acres
Community College Site <i>Schools, Community College</i>	60 Acres (30 developable acres)
Total	100 Acres
Source: Carlson, Barbee & Gibson, 2003	

The Vineyards project applicant requests that the City of Brentwood approve a mixed-use development project consisting of approximately 1,100 units of active adult retirement units, 150 single-family units, 35 acres of commercial and multi-family housing development, and a 30-acre parcel with a winery on 481-acres. The proposed General Plan Land Use Designations, to be accomplished through GPA approvals, are shown in Table 3.1-4 and described in Appendix C.

**TABLE 3.1-4
PROPOSED GENERAL PLAN LAND USE DESIGNATIONS
VINEYARDS PROJECT**

Proposed General Plan Land Use Map Designation	Upper Number of Housing Units or Commercial Square Footage Proposed	Approximate Acreage
Residential Low Density (1.1-5.0 du/ac, midrange 3.0 du/ac)	150 Executive Lots	50 acres
Residential Low Density (1.1-5.0 du/ac, midrange 3.0 du/ac) (includes public & private open space acreage)	1,100 Active Adult Lots	366 acres
Mixed Use Business Park (includes public park)	200 Multifamily units 150 Senior Apartments 75,000 s.f. Commercial/Retail/ Civic 30,000 s.f. Office 115,000 s.f. Hotel/Spa/Conference Center 200,000 s.f. Institutional Levels of Congregate Care	35 acres
Mixed Use Business Park	112,000 s.f. winery, with outdoor amphitheater	30 acres
Total:		481 acres
Source: Carlson, Barbee & Gibson, June 2003		

Described below are the goals and policies included in the Land Use element of the Brentwood General Plan that are applicable to the discussion of land use and planning.

Goal 1: Facilities & Services

The Facilities and Services goal of the Land Use Element is to accomplish, “a diverse, self-sufficient community that offers a broad spectrum of job opportunities, housing types, community facilities, and commercial services.” The specific policies and action programs are described in the environmental setting of this section.

Vineyards Project: The proposed Vineyards project would be consistent with the overall facilities and services goal of the Land Use Element by providing the broad spectrum of job opportunities, housing types, community facilities, and commercial service that the goal seeks to accomplish. The Vineyards project would consist of a winery, assisted living center, retail stores, and residential properties. The multi-use nature of the proposed Vineyards project would provide for a broad spectrum of job opportunities. In addition, the project provides various types of housing including high-density multi-family housing, senior apartments, an assisted care facility, and low density residential (Table 3.1-4). Moreover, the Vineyards project would provide a range of community facilities including an amphitheater at the winery, a recreation center, and neighborhood parks. The commercial services provided at the Village Center of the Vineyards project would be geared towards providing the goods and services in demand by residents of the proposed Vineyards community and adjacent neighborhoods such as the Summerset community.

Annexation Sites: The proposed annexation of the Community College site and the John Marsh Home site would also be consistent with the overall facilities and services goal of the Land Use Element by providing needed community facilities in a manner that is consistent with neighboring existing and proposed land uses. The John Marsh Home site would further contribute to the City's recreational opportunities. The Community College would provide additional job opportunities as well as career training for residents of the City.

Moreover, the provision of facilities and services to these two sites is a key reason for the contemplation of their annexation. Annexation and GPAs for these sites would allow for the provision of City services and facilities for these two sites.

Policy 1.1

Policy 1.1 of the Land Use Element seeks to maintain City control of development within the planning area. To achieve this early rezoning and annexation is recommended as well as requiring new development to be contiguous with existing development.

Vineyards Project: The proposed project would be consistent with Policy 1.1 in that the applicant is proposing rezoning and annexation, and the project would be located next to existing developments.

Annexation Sites: The proposed Annexation Sites would be consistent with Policy 1.1 in that the City of Brentwood would rezone and annex the sites, and the sites would be located next to existing, proposed, and planned developments.

Policy 1.2

Policy 1.2 seeks to promote neighborhoods that provide a balanced mix of land uses and development types. The programs to achieve this include provision of park and open space, commercial uses and schools to serve neighborhoods, pedestrian links to public areas, and institutional land uses to meet the needs of residents and visitors.

Vineyards Project: The proposed project would be consistent with Policy 1.2 of the Land Use Element. As described below, the proposed project has incorporated these elements into the design and would be consistent with Policy 1.2 of the Land Use Element.

The project provides approximately 100 acres of park and open space as well as a recreation center within the active adult neighborhood. Nine neighborhood parks as well as the Village Green Plaza would be provided (refer to Section 3.13). Recreation facilities will be provided for the active adult units, as well as for the other residents in the project area. Community open space areas will be interspersed throughout the entire development. The winery area will also have an amphitheater, which is anticipated to host cultural events for the entire community. Trails will also be provided to the John Marsh State Park to the south, as well as along Fairview Avenue and within the community.

The uses proposed in the commercial center are not anticipated to compete with the Downtown area. Many of the uses proposed would be geared to serve the residents of the neighborhood and visitors to the hotel or are retail stores with which there is no direct

competitor in the Downtown area. The uses envisioned at the Vineyards project entail local serving businesses such as a small coffee shop, a grocery store, convenience store, pharmacy, and other localized businesses that cater to those living in close proximity to the project site. These businesses are not expected to attract consumers from all areas of Brentwood in a manner that would result in direct competition with the Downtown area.

The proposed Vineyards project would incorporate several pedestrian linkages. As mentioned previously, trails would be provided to access the John Marsh Home State Park to the south of the project site. Similar trails are proposed throughout the development and would link the neighborhood parks to the neighborhoods, commercial center, recreation facilities, and winery. Multi Use paths are also proposed along Fairview Avenue, providing access to and from the Summerset residential development (Hart Howerton, 2003).

The proposed Vineyards project would also contribute to the institutional land uses the General Plan identifies as contributing to balanced neighborhoods. The project would include approximately 100 acres of open space, with recreational trails, parks and a “village green” to meet the social and recreational needs of Brentwood residents and visitors. The commercial center, winery, assisted care facility, and hotel would all contribute to meeting the economic needs of the City. The amphitheater proposed at the winery will be available for use for cultural functions in addition to the Village Green area and other common spaces. The project has also been planned in a manner that would facilitate access and a close relationship with the potential Community College on the south side of Marsh Creek. A pedestrian trail along Fairview would provide access to the college. The project incorporates an array of uses that will serve multiple purposes and contribute to meeting the social, economic, recreational, cultural, and educational needs of residents and visitors.

Annexation Sites: The proposed Annexation Sites would be consistent with Policy 1.2 of the Land Use Element. As described below, the proposed Annexation Sites accomplish what is intended with Policy 1.2 of the Land Use Element.

The Annexation Sites would provide a new park within the city limits of the City of Brentwood and a community college, both of which would serve the residents of the proposed Vineyards project, current residents of the City of Brentwood, and the surrounding communities of Oakley, Discovery Bay, Antioch, Knightsen, and Byron. The two Annexation Sites are for a historical park that, will be accessible to the public, and a Community College to serve the eastern region of Contra Costa County. The Annexation Sites would be consistent with Policy 1.2 of the Land Use Element.

Policy 1.3

Policy 1.3 seeks to ensure that new development is designed to promote convenient, comfortable, and safe pedestrian use. The programs to achieve this include encouraging residential development to occur in a balanced and efficient manner, and to apply design standards that ensure high-quality design for non-residential uses.

Vineyards Project: The proposed project would be consistent with Policy 1.3 of the Land Use Element. The project has been the subject of numerous public workshops to gather public input in order to achieve a design that meets the high standards and objectives that the City of Brentwood seeks of new developments (refer to Section 2.3).

The proposed Vineyards project would attain the objective of balanced development sought by the City. The project is a mixed-use development consisting of a hotel, winery, commercial space, residential uses of varying densities, and assisted living facilities. Connections would be provided between these different land uses as well as adjacent land uses through the use of trails, pedestrian paths, cart paths, and the roadway system designed to provide multiple access opportunities from the residential neighborhoods to the commercial center, community college, park facilities, and adjacent neighborhoods. The proposed project is also seen as being a vital contributor to the viability of the John Marsh Home as a public recreational facility through the enhanced access opportunities and the park fees that will be generated. The land beyond this property to the south, southwest, and northwest is also in public ownership and would be managed as a State Park, ensuring that no further development can occur beyond this point, thus preventing sprawl (refer to § 2.2 and 2.4).

The project has been held to a high standard regarding its design. Conceptual sketches have been prepared and presented to members of the City Council, Planning Commission, and residents of the City and the design has incorporated a substantial amount of public comment.

Annexation Sites: Connections to the John Marsh Home site and the Community College site are proposed to allow for convenient pedestrian access from the proposed Vineyards project. No specific development plans are proposed for either of the Annexation Sites, therefore analysis of onsite pedestrian circulation would be speculative in this DEIR. The annexation of the John Marsh Home site and the Community College site would not result in any inconsistencies with Policy 1.3 of the Land Use Element.

Goal 2: Quality Residential

The Quality Residential goal of the General Plan seeks to accomplish a high-quality residential environment that enhances the small town atmosphere of Brentwood. The specific policies and action programs are described in the environmental setting of this section.

Policy 2.1

Policy 2.1 of the Land Use Element intends to promote compatibility between and within existing neighborhoods.

Vineyards Project: The proposed Vineyards project would be consistent with Policy 2.1 of the Land Use Element. The proposed project has been the subject of numerous well-attended public workshops where issues such as neighborhood compatibility were discussed. Input received was incorporated into the project's design to the extent feasible. Through the public workshops a series of themes were created to guide the project design. Among these themes

was the theme to “enhance neighborhood lifestyle and create a synergy between land uses” (refer to Section 2.3).

The proposed Vineyards project would be required to comply with all City standards pertaining to setbacks, landscaping, screening, and design. The City requires landscaping of residential and public spaces and requires screening of the boundaries of any new subdivisions and any residential projects of four or more dwellings (Brentwood Municipal Code, Chapter 17.630).

Large lot residential units are proposed adjacent to the large open space area that can be found to the west of the project site. The active adult units would be located closer to the commercial center. The density transition of the proposed project has been discussed among the project proponent, the City, and nearby residents during the public workshops that were held concerning the project. The proposed site plan is the result of input by the City, nearby residents, and the project proponent resulting in a project that largely meets the needs of the proponent, the interests of the residents, and the policies and regulations of the City (refer to Section 2.3).

The proposed project includes a number of residential amenities such as trails, pedestrian paths, and cart paths, which would connect residential areas to parks and open space, the commercial center, and the potential community college site.

Goal 3: Economic Vitality

Goal 3 of the Land Use Element intends to promote a diversified mix of retail, commercial, and manufacturing uses that will provide employment opportunities and contribute to the City’s economic well-being.

The action programs listed under Goal 3 of the Land Use Element do not pertain directly to the proposed Vineyards project or the Annexation Sites in that they are geared towards actions of the City such creation of design standards, historical resource inventories, and implementation of the Redevelopment Plan. While these specific policies do not pertain directly to the proposed Vineyards project or Annexation Sites, nor result in any potential inconsistencies, the projects do include many facets that further promote these goals.

Among the action programs listed include City development of streetscape, landscape, and design standards. The proposed Vineyards project includes streetscape improvements including a tree-planting program, will submit a landscaping plan, and be subject to design review. In many respects, the review of the streetscape, landscape and design has occurred during the public workshops that were held concerning the project. At these workshops, City Council members, Planning Commissioners, other affected agencies, and the public had an opportunity to voice their concerns and desire regarding the projects design, landscaping, and streetscape improvements. Also discussed was the project’s relationship with the John Marsh Home and opportunities to preserve and enhance the historically significant site. Furthermore, the proposed project is located along the future State SR4 Bypass, which is identified as the preferred location for new commercial developments to occur.

While the specific programs listed under Goal 3 of the Land Use Element are primarily actions required of the City and not individual developers, the proposed Vineyards project has been designed and sited in a manner that meets the intent of the goal and will ensure that no inconsistencies occur.

Goal 4: Employment Opportunities

The Employment Opportunities goal of the Land Use element seeks to provide a variety of employment opportunities to the City through a variety of sectors including industry, commercial, and office uses.

Policy 4.3

Policy 4.3 of the Land Use Element encourages the location of mixed-use developments and business parks where appropriate within the City. The action programs described to attain this includes ensuring development incorporates certain design standards and creating employment centers that will draw employers throughout the region.

Vineyards Project: The proposed Vineyards project would be consistent with Policy 4.3 of the Land Use Element. The proposed Vineyards project, while not an industrial park or traditional business park, is proposed as a mixed-use development consisting of a commercial center, winery, assisted care facility, and potential hotel, in addition to the residential land uses proposed. As previously described, the proposed project has been the subject of numerous well-attended community workshops where the design, landscaping, and similar topics were discussed among a broad spectrum of interested parties. The design of the individual project components would be required to be reviewed by the City's Planning Commission, to ensure that the high design standards that the City strives for are attained.

The proposed project would also generate employment. Long-term employment would be generated throughout the commercial center, as well as in the hotel, winery, and assisted care facilities.

Annexation Sites: The anticipated development, should any occur, on the Annexation Sites does not include any office parks, business parks, or industrial parks. However, both of the Annexation Sites are currently designated for Business Park use in the City of Brentwood General Plan. The General Plan designations of these sites would be amended from Business Park to Park for the John Marsh State Park and to Schools-Community College for the Community College site. The removal of the Business Park designation from these properties would be consistent with Policy 4.3 and the Brentwood General Plan as these sites were located outside of the ULL during the ULL modifications that occurred in the year 2000 (refer to Section 2.2). Placing the sites outside of the ULL prohibited the development of Business Park uses on the sites.

Special Planning Area J

The proposed Vineyards project and the Annexation Sites are identified as being located within SPA J in the City of Brentwood General Plan. Due to the size of the SPA a specific mix of land uses was not identified and design objectives were not suggested. The General Plan identified that the City was meeting with the property owner to identify the future planning of the area.

Vineyards Project: Some objectives were identified including attaining a jobs/housing balance as minimum of 2.0 jobs per household within SPA J and a citywide jobs/housing balance of 1.5 jobs per household. Because of the County's decision to place much of the land within SPA J outside the ULL, and the acquisition of that land by the State for park purposes, the City's anticipated use of the land for employment-generating uses is no longer likely. This objective, as it relates to SPA J, is requested to be deleted in the General Plan Amendment (refer to Appendix C).

A design objective of SPA J is to locate employment-generating uses adjacent to the planned State SR4 Bypass interchanges at Marsh Creek Road. The proposed commercial center would be located in this vicinity and would be consistent with this objective.

The SPA also includes an objective to permanently protect City designated open space areas. The proposed project site is not a designated open space area. The SPA extends farther to the south and southwest in the area of the John Marsh State Park. The area of the state park will be permanently protected as open space; therefore the proposed project is consistent with this objective.

The project would also coordinate development with the availability of public services and facilities. The availability of public services and facilities to serve the proposed project is discussed in the applicable EIR section. Refer to Section 3.13 for a discussion of the public utilities and services and please refer to Section 3.3 for a discussion of the roadway facilities to serve the proposed project.

The proposed project is consistent with the direction set forth for SPA J in the General Plan. The direction strongly encourages pedestrian and transit use and close proximity of housing to jobs. As previously discussed, the proposed project includes a variety of transportation options including trails, pedestrian paths, and cart paths as well as providing access to transit. The development occurs in a compact urban form.

Annexation Sites: While no specific development proposals are being considered for the Community College site at this time, it is anticipated that potential development of a Community College would serve 5,000 students. As such, it would increase the number of jobs within the City of Brentwood. Brentwood has grown substantially over the past decade. In a large part this growth is due to the comparatively reasonable housing prices in the City. Many residents take advantage of the lower housing prices in Brentwood and commute to jobs in the larger employment centers of the East Bay.

Development of the Community College would result in the provision of high-quality jobs within the City of Brentwood that would likely be able to be filled through the existing

population in the City. By providing high quality jobs within the City, fewer residents will need to commute outside of the City and will positively contribute to the City's jobs/housing balance.

The annexation of the two Annexation Sites being considered by the City of Brentwood meets the intent of SPA J.

Mitigation 3.1-C. Consistency with City of Brentwood Land Use Policies - Vineyards Project and Annexation Sites: No mitigation is required. (Less Than Significant Impact).

IMPACT 3.1-D. Consistency with LAFCO Policies - Vineyards Project and Annexation Sites: The proposed Vineyards project and Annexation Sites would be consistent with LAFCO policies. (Less Than Significant Impact).

The Contra Costa LAFCO has jurisdiction over changes of the organization of cities and districts, including annexations. The proposed Vineyards project site and the Annexation Sites are currently located within the unincorporated portion of Contra Costa County and are proposed to be annexed into the City of Brentwood. The proposed Vineyards project site and the Annexation Sites are all located within the City of Brentwood's SOI and the City of Brentwood's General Plan planning area.

During LAFCO's review of an annexation request LAFCO will review whether or not the land to be annexed is located within the service area of the applicable service districts and agencies and that it is within the adopted SOI of the annexing agency.

Annexation requests are required to follow the procedures described by State law, Government Code §56000, *et seq.* These procedures include the preparation of an application, review by the LAFCO Executive Officer, public notification, rezoning, and a public hearing by the LAFCO Commission.

As previously described, the proposed Vineyards project and the Annexation Sites are located within the City of Brentwood's SOI and the applicable agencies would service the sites. Connections to City of Brentwood infrastructure (e.g., water, wastewater) would be able to be made and the Vineyards project site and Annexation Sites are requesting rezoning. The proposed Vineyards project and the Annexation Sites would not result in any inconsistencies with LAFCO policies.

Mitigation 3.1-D. Consistency with LAFCO Policies - Vineyards Project and Annexation Sites: No mitigation is required. (Less Than Significant Impact).

IMPACT 3.1-E. Habitat Conservation Plans - Vineyards Project and Annexation Sites: No habitat conservation plan or natural community conservation plan currently exist for the Vineyards project site or the Annexation Sites. (Less Than Significant Impact).

There are no habitat conservation plans or natural community conservation plan in effect for the proposed Vineyards project site or Annexation Sites and, therefore, the proposed Vineyards project and Annexation Sites would not have the potential to result in any inconsistencies with such plans.

Mitigation 3.1-E. Habitat Conservation Plans - Vineyards Project and Annexation Sites: No habitat conservation plan is currently in place for the Vineyards project site or the Annexation Sites and, therefore, no mitigation is required. (Less Than Significant Impact).

3.2 AGRICULTURAL RESOURCES

3.2.1 ENVIRONMENTAL SETTING

Onsite and Surrounding Land Uses

The Vineyards project and the Annexation Sites are located in an agricultural (i.e., grazing) area that extends from the Diablo Range eastward into the San Joaquin Valley. The project location represents a transition in agricultural activity: land northwest, west, southwest, south, and southeast of the site is used primarily as grazing land for cattle, and land to the east is used for orchards, row crops, and field crops. The land to the north has been developed with urban uses. The site is generally characterized by open rolling, grass-covered hills with widely scattered oak trees. The project sites are primarily used for cattle grazing. Cattle grazing would be allowed to continue on the project sites up until such time as grading was to begin.

Farmland Designations

The following farmland designations are used by the California Resources Agency, Department of Conservation, Division of Land Resource Protection, in preparing the Important Farmland Maps and Farmland Conversion Reports pursuant to the Farmland Mapping and Monitoring Program (FMMP). The designations were developed by the United States Department of Agriculture, and have been modified for use in California. The most significant modification is that Prime Farmland and Farmland of Statewide Importance must be irrigated. The relevant designations are summarized below:

- ❖ **Prime Farmland** – Land which has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods. It must have been used for the production of irrigated crops at some time during the two prior update cycles prior to the mapping date. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use. Prime Farmland must meet specific criteria with respect to water, soil temperature range, acid-alkali balance, water table, soil sodium content, flooding, erodibility, permeability, rock fragment content, and rooting depth.
- ❖ **Farmland of Statewide Importance** – Land other than Prime Farmland that has a good combination of physical and chemical characteristics for the production of crops. It must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use. It must also meet specific criteria with respect to the particular factors enumerated above (e.g., soil temperature range, soil sodium content, etc.).
- ❖ **Unique Farmland** – Land that does not meet the criteria for Prime Farmland or Farmland of Statewide Importance that has been used for the production of specific high economic

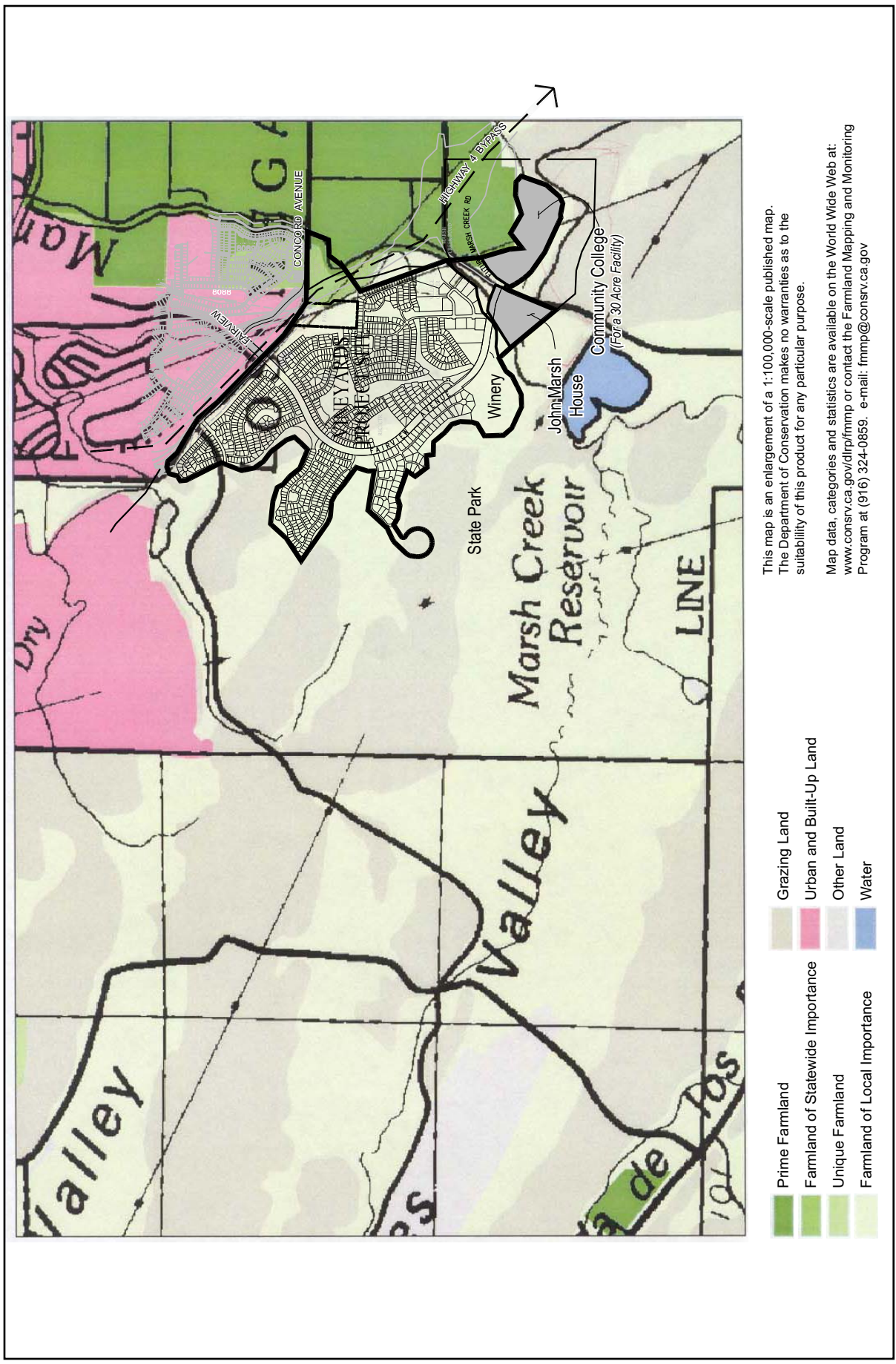
value crops at some time during the two update cycles prior to the mapping date. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality and/or high yields of a specific crop when treated and managed according to current farming methods. Examples of such crops may include oranges, olives, avocados, rice, grapes, and cut flowers. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use. It also does not include abandoned orchards or vineyards, dryland grains, and extremely low yielding crops, such as irrigated pasture.

- ❖ **Farmland of Local Importance** – Land that is either currently producing crops, has the capability of production, or is used for the production of confined livestock. Farmland of Local Importance is land other than Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. This land may be important to the local economy due to its productivity or value. It may also include soils that qualify for Prime Farmland or Farmland of Statewide Importance, but generally are not cultivated or irrigated. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.
- ❖ **Grazing Land** – This is land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock. It does not include land designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. It also does not include heavily brushed, timbered, excessively steep, or rocky lands which restrict the access and movement of livestock.

Vineyards Project

The Vineyards project site is used primarily for cattle grazing. Land northwest, west, southwest, south, and southeast of the site is also used primarily as grazing land for cattle. Land to the east is used for orchards, row crops, and field crops. The Vineyards project site is generally characterized by open rolling, grass-covered hills with widely scattered oak trees. As shown on Exhibit 3.2-1, which depicts the project boundaries in relation to the farmland designations in the project area as shown on the 2002 Contra Costa County Important Farmland Map prepared by the Department of Conservation, Division of Land Resource Protection, a small portion of land at the eastern edge of the Vineyards project site contains a small amount of farmland of statewide importance and an even smaller amount of prime farmland at the far eastern edge. This portion of the Vineyards project site, which is approximately 11.5 acres in size, is the area where the detention basin is proposed. The remainder of the Vineyards project site is designated as farmland of local importance or as grazing land.

As shown on Exhibit 3.2-1, both the John Marsh Home site and the Community College site are located on areas designated as farmland of local importance and as grazing land.



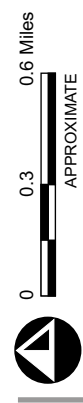
This map is an enlargement of a 1:100,000-scale published map. The Department of Conservation makes no warranties as to the suitability of this product for any particular purpose.

Map data, categories and statistics are available on the World Wide Web at: www.consrv.ca.gov/dlrp/fmmp or contact the Farmland Mapping and Monitoring Program at (916) 324-0859. e-mail: fmmp@consrv.ca.gov

Source: Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program (2003)

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR
2002 Contra Costa County Important Farmland Map

Exhibit 3.2-1



Relevant Goals, Objectives, and Policies

Relevant City of Brentwood General Plan Agricultural Resource Policies are present below:

Conservation and Open Space Element

The Conservation goal (Goal 1) of the Conservation and Open Space Element directs the City to, “preserve productive agriculture lands in Brentwood’s Planning area.” The specific policies and action programs to accomplish this goal that are applicable to the proposed project are listed below.

- ❖ Policy 1.2 – Minimize Conflicts: Minimize conflicts between agricultural and urban land uses.
- ❖ Policy 1.3 – Development Impacts: Minimize impacts of development on agricultural uses.

Community Design Element

The Community Design Element also specifies policies and action programs that are applicable with agricultural lands, as listed below:

- ❖ Policy 2.2 – Preserve agricultural lands that are adjacent to urban development, along the periphery of the community, and between development projects as feasible in order to preserve and enhance the views of dominant natural features such as Mount Diablo and local open space.

3.2.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Significant impacts related to agricultural resources were determined from criteria stated in *Appendix G of the State CEQA Guidelines*. A significant agricultural resource impact would result if the project would:

- ❖ Convert Prime Farmland, Farmland of Statewide Importance, or Unique Farmland, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- ❖ Conflict with existing zoning for agricultural use or a Williamson Act contract; or
- ❖ Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.

IMPACT 3.2-A. Conversion of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to Non-Agricultural Use - Vineyards Project: The Vineyards project could potentially result in the conversion of a very small amount (fewer than 10 acres) of prime farmland and/or farmland of statewide importance. The Vineyards project would also create on the project site approximately 60 new acres of farmland, to be used for vineyards and olive groves. This would more than offset the small amount of farmland that could be converted by the project to non-agricultural uses. (Less Than Significant Impact).

The Vineyards project site is primarily used for cattle grazing. As shown on Exhibit 3.2-1, a small portion of land at the eastern edge of the Vineyards project site contains a small amount of farmland of statewide importance and an even smaller amount of prime farmland at the far eastern edge. This portion of land is approximately 11.5 acres in size, and is the area where the detention basin is proposed. The detention basin would be approximately 7.5 acres in size; the remaining four acres would remain undeveloped. Therefore, any conversion of designated farmland that would result from the development of the Vineyards project would involve fewer than 10 acres.

Moreover, a major component of the Vineyards project would involve the planting of approximately 60 acres of vineyards and olive groves throughout the public and private open space areas. The Vineyards project would therefore create approximately 60 new acres of farmlands, which would more than offset any conversion of the small amount of farmland resulting from the project.

Additional Considerations – Agricultural Enterprise Program

The Vineyards project would be required to comply with the City of Brentwood’s Agricultural Enterprise Program. The City of Brentwood created this program to support General Plan policies to preserve productive agricultural lands in or adjacent to Brentwood’s Planning Area or its approved sphere of influence. This includes compensating for the loss of agricultural lands converted for urban uses within the City by permanently protecting agricultural lands planned for agricultural use, by working with farmers who voluntarily wish to place conservation easements on their land with fair compensation for such easements, and permitting a transfer of agricultural credits (TAC) from “agricultural donor parcels” within the TAC target area to “receiver parcels.”

Section 17.730.030 of the City’s zoning ordinance defines the agricultural land requirements, which are described as follows:

“In order to mitigate and offset the loss of valuable farmland resources, the City shall require agricultural land mitigation by any applicant for a subdivision or any other discretionary land use entitlement which will permanently change agricultural land over one acre in size within the City’s jurisdiction to any nonagricultural use.

Agricultural land mitigation shall be satisfied by one of the following mechanisms:

- 1) Granting a farmland conservation easement, a farmland deed restriction or other farmland conservation mechanism (including fee title purchase by the City or qualifying entity) to or for the benefit of the City and/or a qualifying entity approved by the City on lands deemed acceptable by the City. The mitigation shall be required for agricultural land that is permanently converted to an urban use, including any portion of the land used for park and recreation purposes, on a one-to-one land area ratio, or
- 2) By payment of an in-lieu fee as established by City Council resolution, which shall be reviewed and adjusted periodically to ensure that the fee is adequate to offset the cost of purchasing farmland conservation easements on a one-to-one ratio. The fee shall be fixed for a twelve-month period after enactment of this ordinance. Thereafter, the fee may be adjusted when deemed appropriate,

but may not be increased by more than 10 percent during any twelve-month period. For non-residential projects that the City Council determines are important for economic development purposes, some or all of the mitigation requirements of this chapter shall be waived.

The proposed Vineyards project site would meet the City of Brentwood's definition of agricultural land, as defined in Municipal Code §17.730.020. This section defines agricultural land as land specifically designated as agricultural core (AC) or agricultural lands (AL) as defined in the Contra Costa 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 at the time of adoption of this ordinance that contain Class I, II, III or IV soils as defined by the United States Department of Agriculture Natural Resource Conservation Service. The City of Brentwood's definition does not require that "agricultural land" falling under the City's Agricultural Enterprise Program be Prime Farmland, Farmland of Statewide Importance, or Unique Farmland, as defined by the Department of Conservation, Division of Land Resource Protection.

Therefore, the Vineyards project would be required to compensate for the loss of agricultural land as defined by the City of Brentwood through preservation by granting a conservation easement or payment of an in lieu fee. As explained above, the Vineyards project would create approximately 60 acres of vineyards and olive groves throughout the public and private open spaces. These agricultural uses would be placed in permanent conservation easements and would remain agricultural amenities for the City.

Mitigation 3.2-A. Conversion of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to Non-Agricultural Use -Vineyards Project: No significant impact is anticipated, therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.2-B. Conversion of Prime Farmland, Farmland of Statewide Importance , or Unique Farmland to Non-Agricultural Use - Annexation Sites: The Annexation Sites do not contain lands designated as prime farmlands, farmland of statewide importance, or unique farmland. Therefore, the potential future development of the Annexation Sites would not result in the conversion of any such farmland to non-agricultural uses. (Less Than Significant Impact).

As shown on Exhibit 3.2-1, the Annexation Sites do not contain any prime farmlands, farmland of statewide importance, or unique farmland, as designated on the 2002 Contra Costa County Important Farmland Map prepared by the Department of Conservation, Division of Land Resource Protection. Therefore, potential future development of the Annexation Sites would not result in the conversion of any such farmlands to non-agricultural uses. As a result, the impacts to agricultural resources are less than significant.

Mitigation 3.2-B. Conversion of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to Non-Agricultural Use -Annexation Sites: No significant impact is anticipated, therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.2-C. Conflict with Existing Zoning or Williamson Act Contract - Vineyards Project:
The Vineyards project does not conflict with existing zoning or a Williamson Act contract and, a less than significant impact would result. (Less Than Significant Impact).

The proposed Vineyards project site is located within SPA J of the City of Brentwood General Plan, which is designated for future urban use.

The project site is not included in the City's Agricultural Conservation Zoning District or any other agricultural zoning district, nor is there Williamson Act contracts associated with the Vineyards project site.

Currently, the Vineyards project area is located within Contra Costa County and carries a General Plan designation of Agricultural Land (AL) with a corresponding zoning district. However, the Contra Costa County General Plan recognizes that the Vineyards project site is located within the City of Brentwood Sphere of Influence (SOI), is inside the ULL, and anticipated that it would be annexed and developed within the City of Brentwood. As proposed, the Vineyards project site would be annexed into the City of Brentwood and zoned as Planned Development (PD) zoning district and, therefore, would not conflict with the County zoning designations.

Mitigation 3.2-C. Conflict with Existing Zoning or Williamson Act Contract - Vineyards Project: The Vineyards project site would be annexed into the City of Brentwood, would be zoned with a PD zoning district, and has no Williamson Act contracts associated with it and, therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.2-D. Conflict with Existing Zoning or Williamson Act Contract – Annexation Sites:
The Annexation Sites would not conflict with existing zoning or a Williamson Act contract and, therefore, a less than significant impact would result. (Less Than Significant Impact).

The City of Brentwood General Plan designates the Annexation Sites as Business Park for the John Marsh Home and Business Park for the Community College site. Although these sites are not currently within the City of Brentwood municipal boundaries they are within the City's Sphere of Influence. The Annexation Sites are not included within an Agricultural Conservation Zoning District or any other agricultural zoning district, nor are there Williamson Act contracts associated with the Annexation Sites.

The sites currently have a Contra Costa County General Plan designation of Agricultural Land (AL) with a corresponding zoning district. The AL land use designation includes most of the privately owned rural lands in Contra Costa County, excluding the private lands containing prime soils or lands in or near the Delta. Most of the AL designated lands are currently used for grazing livestock and dry grain farming. The John Marsh Home site and the Community College site would be annexed into the City and would be zoned with a PD. Upon annexation, the agricultural land use designations would no longer apply to the Annexation Sites. Therefore, no mitigation measures are required.

Mitigation 3.2-D. Conflict with Existing Zoning or Williamson Act Contract – Annexation Sites: The Annexation Sites would be annexed into the City of Brentwood, would be zoned with a PD zoning district, and do not have any

Williamson Act contracts associated with then and, therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.2-E. Other Changes in the Existing Environment Which Could Result in Conversion of Farmland to Non-Agricultural Use - Vineyards Project: The Vineyards project would not include changes to the existing environment that would have the potential to result in the conversion of Farmland, beyond the Vineyards project area as discussed in Impact 3.2-A. (Less Than Significant Impact).

The proposed Vineyards project site is currently used for cattle grazing. Farmland is defined as land that is used for agricultural production such as row crops, orchards, as well as grazing activities. While the proposed Vineyards project site is currently used for grazing, it is done so under agreement between the property owner and the cattle rancher with the rancher's understanding that grazing would cease upon approval of the Vineyards project, and commencement of grading. Grazing of the Vineyards project site is not a permanent use of the site. No other agricultural uses occur on the property.

The City of Brentwood does require the loss of agricultural land, as defined in the City's Municipal Code, to be offset through either conservation easements or payment of an in-lieu fee (refer to discussion under Impact 3.2-A). In addition, approximately 60 acres of vineyards and olive groves will be planted and permanently protected within conservation easements onsite. The Vineyards project would not include any changes that would convert Farmland to non-agricultural uses beyond those described in Impact 3.2-A.

In addition, the proposed Vineyards project does not include any requests that would result in the conversion of farmland beyond the project boundary. The planned SR 4 Bypass is located on the northern side of the Vineyards project site and the Urban Limit Line (ULL) borders all other sides. Lands outside the ULL cannot be developed with urban uses and, therefore, development of the Vineyards project would not result in further conversion of Farmland to non-agricultural uses.

Mitigation 3.2-E. Other Changes in the Existing Environment Which Could Result in Conversion of Farmland to Non-Agricultural Use: The Vineyards project would not result in any other changes to the existing environment that could result in conversion of Farmland beyond the loss of farmland soils as discussed in Impact 3.2 – A; therefore no mitigation is required. (Less Than Significant Impact).

IMPACT 3.2-F. Other Changes in the Existing Environment Which Could Result in Conversion of Farmland to Non-Agricultural Use - Annexation Projects: The John Marsh Home site would not include any other changes to the existing environment that would have the potential to result in the conversion of Farmland. Approximately 30-acres of the Community College site is currently being grazed. However, grazing is conducted under agreement with the State Parks and is not a permanent use of the site. (Less Than Significant Impact).

The Community College site is currently used for grazing. Grazing on this site is done under an agreement with the State Parks and is not a permanent use of the site. Grazing would cease upon initiation of any development on the property, should any occur.

In addition, the proposed Annexation Sites do not include any requests that would result in the conversion of farmland beyond the Annexation Sites boundaries. The conversion of Farmland on the Annexation Sites has been discussed in Impact 3.2-B. The Annexation Sites are bound by the planned SR 4 Bypass on the northern side and the Urban Limit Line (ULL) on all other sides. Lands outside the ULL cannot be developed with urban uses and, therefore, potential development of a community college would not result in the conversion of Farmland beyond the boundaries of the Community College site to non-agricultural uses.

Mitigation 3.2-F Other Changes in the Existing Environment Which Could Result in Conversion of Farmland to Non-Agricultural Use - Annexation Projects: The Annexation Sites would not result in changes to the existing environment that could result in conversion of Farmland beyond the Annexation Sites boundaries, therefore no mitigation is required. (Less Than Significant Impact).

IMPACT 3.2-G. Cumulative Impacts – Conversion of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to Non-Agricultural Use: The Vineyards project and the potential future development of the Annexation Sites would not contribute to potential significant cumulative impacts on agricultural resources. (Less Than Significant Cumulative Impact).

The Vineyards project could result in the conversion of a very small amount (a total of fewer than 10 acres) of prime farmland and/or farmland of statewide importance. The Vineyards project would create on the project site approximately 60 acres of new farmland, to be used for vineyards and olive groves. This would more than compensate for any conversion of farmland resulting from the project. As a result, the Vineyards project would not contribute to any potential significant impacts to agricultural resources that could result from cumulative development throughout Brentwood. Moreover, since the Annexation Sites do not contain any lands that are designated as prime farmland, farmland of statewide significance, or unique farmland, the potential future development of these sites also would not contribute to any significant cumulative impacts to agricultural resources.

Mitigation 3.2-G. Cumulative Impacts – Conversion of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to Non-Agricultural Use: The projects would not contribute to any potential significant cumulative impacts on agricultural resources, therefore, no mitigation is required. (Less Than Significant Cumulative Impact).

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3.3 POPULATION AND HOUSING

The Population and Housing section provides a summary of the City of Brentwood's existing population and housing composition, and provides a qualitative discussion - based on empirical data - of the proposed Vineyard project's potential impacts on the population and employment within the City. Additionally, this section discusses the jobs to housing balance that would result from the Vineyards project and the possible jobs to housing ratio that could result from potential development of Annexation Sites (particularly the community college) should plans be developed for these sites.

3.3.1 ENVIRONMENTAL SETTING

Population

Incorporated in 1948, the City of Brentwood has historically focused on maintaining its rural heritage and protecting the agricultural resources within and surrounding Brentwood. However, in the late 1960's, the community began to experience population growth. This population growth continued through the 1970's, and escalated during the 1980's and 1990's. Between 1980 and 1990, Brentwood's population grew from 4,434 to 7,563 persons. Much of this population growth occurred as a result of growth pressures from western Contra Costa County and the greater San Francisco Bay region. Between 1990 and 2000, the population grew by 15,739 persons to reach a total of approximately 23,300 (2000 U.S. Census). According to the California Department of Finance, the current population (July 2003) is estimated at approximately 33,000 persons. According to the ABAG population projections, the City of Brentwood is estimated to have a population of 54,400 by the year 2025.

Employment

The City of Brentwood (including its sphere of influence) was estimated to have approximately 11,080 employed residents in year 2000, while the number of jobs available in the City was estimated to be approximately 5,260 (ABAG, 2002). The ratio of local jobs to local population is below that of most surrounding cities (i.e., there are fewer jobs per resident in Brentwood than other local cities) and the County at large. By 2010, the City is projected to have 18,000 employed residents, while the number of local jobs is estimated to reach 6,890 (ABAG). At least 49 percent (49 %) of employed Brentwood residents are currently commuting to work available outside the City¹.

The major employers in eastern Contra Costa County are predominantly service-based. The major employers within the City of Brentwood continue to be the municipal government, local school districts, and large retail operations. These employment trends are anticipated to persist into the near future. Given the City's existing and forecast imbalance between jobs and employed residents, Brentwood is likely to remain linked to, and dependent on, the wider Bay Area as a place of employment for its residents. However, locally, job growth in the City of Brentwood is anticipated to occur at a more rapid rate than in surrounding Contra Costa County. Likewise, the 2001 General Plan

¹ City of Brentwood General Plan EIR, *Population, Employment and Housing*, June 2001.

update (City of Brentwood, 2001a) plans for employment growth to be much greater than residential development. These two trends suggest that the City is planning for job formation to exceed household formation in Brentwood in upcoming years.

Existing Employment in Vineyards Project Area and Annexation Sites

The year 2000 census identifies seven jobs in the Vineyards project area and in land that is the new state park². The properties are periodically used for cattle grazing during certain times of the year. Cattle grazing requires approximately six year-round permanent employees and an estimated 20 employees during peak operations, which occur during about two months each year. Converting the seasonal workers to full-time equivalent workers, the cattle grazing operations provide approximately 12 full-time equivalent jobs. If state park regulations allow, grazing operations could continue at about this level on the state park (outside the Vineyards project area).

Housing

According to the Department of Finance, the City of Brentwood currently contains an estimated 10,933 housing units, of which 9,907 are single-family residences, and 1,026 are multi-family and other units. The current vacancy rate is about 3.13 percent, indicating that the upward pressure on housing demand eased slightly since the tremendous growth period between 1996 and 2000.

The April 1, 2003 *Summary of Residential, Commercial, and Industrial Activity Within the City of Brentwood* report indicates that a total of 6,138 housing units are currently under construction in the City of Brentwood. An additional 2,359 housing units have been approved, but are not yet under construction. The City is also reviewing development applications for an additional 1,541 housing units. This does not include the proposed Vineyards project analyzed in this EIR, which would construct up to 1,600 additional housing units.

Existing Housing in Vineyards Project Area and Annexation Sites

The Vineyards project site is currently unoccupied. The John Marsh Home exists on one of the two Annexation Sites. No other housing exists on the Vineyards project site or Annexation Sites.

Jobs/Housing Balance

The jobs to housing balance, expressed as a ratio, is an indication of the “match” between local employment opportunities and the availability of housing in a particular area. Generally, the most accepted method of calculating the ratio is to compare the number of jobs in the City to the number of housing units. Table 3.3-1 shows the estimated existing Jobs/housing ratio for both Brentwood and Contra Costa County:

² Hausrath Economics Group Memorandum from Sally Nielson to Lisa Keidel at Carlson, Barbee & Gibson. September 12, 2003.

**TABLE 3.3-1
EXISTING JOBS/HOUSING BALANCE**

	City of Brentwood	Contra Costa County
Jobs	5,260	361,110
Housing Units	10,933	366,397
Jobs/Housing Ratio	0.48	0.99
Sources: (Jobs Data) ABAG, Projections 2002: Forecasts for the San Francisco Bay Area to the Year 2025, December 2001; (Housing Data) California Department of Finance, City and County Population and Housing Estimates, as of January 1, 2003 (official State Estimates).		

As shown in Table 3.3-1, the jobs/housing ratio Contra Costa County is approximately 0.99 and the ratio for the City of Brentwood (0.48) is approximately half the County ratio. This means that Contra Costa County provides approximately one job for each housing unit in the County, and the City of Brentwood provides approximately one job for every two housing units in the City. In an attempt to provide a better balance of jobs to housing in the City of Brentwood, the City established policies in its recent General Plan update (City of Brentwood, 2001a) to accomplish a higher proportion of jobs to housing units in the Planning Area.

Relevant Goals, Objectives, and Policies

The Brentwood General Plan states that development within the Special Planning Area (SPA) J shall comply with the applicable design goals and policies of the General Plan with Specific emphasis on the following:

- ❖ Attain a Jobs/housing balance at a minimum of 2.0 jobs per household within this SPA and attain a 1.5 Jobs/housing balance citywide.
- ❖ Locate employment-generating uses adjacent to the Highway 4 bypass planned interchanges at Marsh Creek Road and Walnut Boulevard.

SPA J is a planning area of approximately 5,500 acres designated in the City of Brentwood General Plan 2001-2021. SPA J provides a range of land use options in the City's General Plan and, therefore, does not establish precise objectives for SPA J (Hausrath Economic Group, 2003.) The Vineyards project area is designated primarily for residential uses, with some business park uses. Outside of the Vineyards project area, approximately 327 acres of SPA J are designated for general or regional commercial, mixed-use business park, and industrial uses. There are also just over 450 acres designated for a range of residential development. Much of the remaining area is designated as Urban Reserve. Using Brentwood General Plan planning factors, and ignoring the new State park ownership and its location outside the ULL, SPA J outside the Vineyards project area could support about 6,570 jobs and 1,380 dwelling units (not attributing any jobs or homes to the 1,500 acres of Urban Reserve). Adding the estimated 791 Vineyards project jobs and 1,600 residential units, results in 7,360 jobs and 2,980 residences within SPA J resulting in a jobs/housing ratio of 2.5 to 1.0.

However, two key factors exist that now prohibit the City of Brentwood's ability to achieve a 2.0 jobs per household average in SPA J. First, Contra Costa County placed most of SPA J outside of the Urban Limit Line. Properties outside the ULL are not to be developed in urban uses. 90% of the

Commercial/Industrial and Business Park acreage (357 of 398 total acres) in SPA J are now outside of the ULL. There are only 41 acres remaining as Business Park within the Vineyards project site. The Vineyards project is requesting a General Plan Amendment to: (1) reconfigure the Business Park designation on 62.5 acres, and (2) designate the Community College on the 60 acres Annexation Site, outside the Vineyards project boundary. Secondly, the State of California recently acquired nearly 4,000 acres in SPA J for state park uses. Given these constraints, a 2.0 jobs to housing ratio is not proposed in the Vineyards project area and the Vineyards project applicant is proposing a General Plan amendment to this policy for the project.

Due to the County's decision to place most of SPA J outside the ULL and the State's subsequent acquisition of that property, a 2:1 jobs/housing ratio in SPA J is not proposed and the Vineyards project includes amendment of this Land Use design objective and Economic Policy.

3.3.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Significant impacts related to population and housing were determined from criteria stated in *Appendix G of the State CEQA Guidelines* and City guidance. For the purposes of this project, a population and housing impact is considered significant if the project would:

- ❖ 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) where such growth exceeds that planned for and projected.
- ❖ Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.
- ❖ Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

POPULATION GROWTH

IMPACT 3.3-A. Population Growth – Vineyards Project: The proposed project would directly result in population growth through the construction of new homes. The amount of population growth generated by the project would be substantially less than the amount of growth planned for in the SPA J area by the Brentwood General Plan. The population growth generated by the project would be within the range of growth projected for the City of Brentwood by the Association of Bay Area Governments. Therefore, impacts related to population growth would be less than significant. (Less Than Significant Impact).

The proposed project would increase the population of the City through the construction of new housing units. The proposed project would result in the construction of up to 1,600 new residential units and a 200,000 square foot congregate care facility. Approximately 1,100 of the units would be for active adults and 150 would be apartments for seniors. It is assumed that the average household size for these units would be approximately 1.89 persons per unit (City of Brentwood, 2001a). The remaining 350 units would include 150 executive lots and 200 multi-family units. It is assumed that the average household size for these units would be approximately 2.89 persons per unit (City of Brentwood, 2001a). It is also assumed that the congregate care facility would house up to 1 person per

1,000 square feet (City of Brentwood, 2001a). Based on these assumptions, the proposed Vineyards project would generate a population of approximately 3,575 persons (Table 3.3-2).

The proposed Vineyards project site is located in an area identified as “Special Planning Area J” (SPA J) on the Brentwood General Plan. According to the General Plan Housing Element, the land use mix for Special Planning Area J would include 1,750 single-family units and 3,476 multi-family units throughout the SPA J. However, since adoption of the General Plan, most of SPA J has become a state park so the development – oriented land uses in this planning area will not be realized.

Land Use	Persons per Unit	Total Population
1,100 active adult units	x 1.89 persons/unit	= 2,079
150 senior apartment units	x 1.89 persons/unit	= 248
150 Executive Units	x 2.89 persons/unit	= 434
200 apartment units	x 2.89 persons/unit	= 578
200,000 sf congregate care	x 1 person/1,000 sf	= 200
Total		3,575
Source: RBF Consulting, 2003.		

According to the Association of Bay Area Governments’ (ABAG) Projections 2002, the City of Brentwood is projected to grow by approximately 30,015 persons between the years of 2000 and 2025. The proposed project would represent approximately 11.9 percent of the growth that would occur between 2000 and 2025. Therefore, the Vineyards project would result in population within the range of growth projected for the City by ABAG.

Based on the above findings, the proposed project would not result in a substantial increase in population beyond previously planned and projected conditions. Therefore, impacts related to population growth would be considered less than significant.

Mitigation 3.3-A. Population Growth – Vineyards Project: The proposed Vineyards project would result in a less than significant population growth impact and, therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.3-B. Population Growth – Annexation Sites: The proposed Annexation Sites would not substantially increase the population of the City of Brentwood. These properties would not include residential units and would not induce substantial population growth. (Less Than Significant Impact).

The City of Brentwood’s proposed annexation, potential future development plans for the Contra Costa Community College District site and the John Marsh Home site would not substantially increase the population of the City. The proposed General Plan amendments would change the land use designations for both Annexation Sites. The land use designation for the community college site

would change from *Business Park* to *School, Community College*. The land use designation for the John Marsh Home site would change from *Business Park* to *Park*. Future development that is consistent with these proposed land use designations would not involve the construction of new residential units. Further, due to the large number of residents compared to jobs in the City of Brentwood, employment created at these sites would not be expected to result in substantial population growth. Therefore, the annexation, general plan amendments, and potential future development of these properties would not directly increase the City's population. Impacts would be considered less than significant.

Mitigation 3.3-B. Population Growth – Annexation Sites: The proposed Annexation Sites would not result in a substantial increase in population and, therefore, no mitigation is required. (Less Than Significant Impact).

DISPLACEMENT OF HOUSING OR PEOPLE

IMPACT 3.3-C. Displacement of Housing or People – Vineyards Project: The proposed Vineyards project would not displace housing units or people, and would not require the construction of replacement housing. (No Impact).

The proposed project site is currently undeveloped and does not include any housing units. People do not currently live on the project site. Therefore, the proposed project would not result in the displacement of housing units or people, and would not require the construction of replacement housing elsewhere. No displacement impacts would occur as a result of the proposed project.

Mitigation 3.3-C. Displacement of Housing or People – Vineyards Project: The proposed project would not displace housing or people and, therefore, no mitigation is required. (No Impact).

IMPACT 3.3-D. Displacement of Housing or People – Annexation Sites: The proposed annexation, general plan amendments, and potential future development of Contra Costa Community College District site and John Marsh Home site would not displace housing units or people, and would not require the construction of replacement housing. (No Impact).

The only existing housing on the Annexation Sites is the John Marsh Home. No people currently live on these properties. Annexation of the John Marsh and amendments to the General Plan would retain the Home at its current location. Therefore, the proposed project would not result in the displacement of housing units or people, and would not require the construction of replacement housing elsewhere. No impacts would occur as a result of the proposed project.

Mitigation 3.3-D. Displacement of Housing/People – Annexation Sites: The proposed annexation, general plan amendments, and future potential development of the community college site and John Marsh Home would not displace housing or people and no mitigation is required. (No Impact).

DISCUSSION OF FUTURE EMPLOYMENT AND JOBS/HOUSING BALANCE

As mentioned earlier in this section of the EIR, a 2:1 jobs/housing ratio in SPA J is not proposed and the Vineyards project includes an amendment to this General Plan policy. The project proposes an amendment to the General Plan regarding jobs to housing in SPA J primarily because most of SPA J is now a state park and no longer affords the opportunity to provide the volume of employment originally contemplated by the City of Brentwood for that planning area. In addition, the majority of the employment generating uses are designated on property outside the ULL. Since CEQA does not require an impact analysis of jobs to housing, and because jobs/housing balance is not achieved on a project by project basis and is achieved, instead, on a citywide or regional basis, the following employment and jobs/housing discussion is for information purposes only.

Potential Future Employment

Permanent Employment

Vineyards Project

The proposed Vineyards project would generate approximately 610 new jobs (Table 3.3-3) at full project buildout. The Village Center uses would generate approximately 396 (65%) future permanent jobs. The proposed winery would produce approximately 500,000 cases of wine annually and staffing for a tasting room and delicatessen. The winery would generate approximately 200 (33%) of future permanent jobs. Finally, the management and maintenance of multi-family housing would generate approximately 14 (2%) of the future permanent employment.

Based on focused surveys conducted in the Summerset Active Adult community in year 2000 by Gruen + Gruen Associates, an estimate was prepared of retail jobs in Brentwood that would be supported by the retail spending of future Vineyards project residents. Based on these surveys (with updated income estimates provided by Hausrath Economic Group in 2003), retail spending by Vineyards residents would support about 60 retail jobs in the City of Brentwood. Some of these jobs would be located in the Village Center (and are counted in the Village Center employment estimates shown in Table 3.3-3) and others would be elsewhere in the City of Brentwood or outlying areas.

TABLE 3.3-3 ESTIMATED FUTURE DIRECT PERMANENT EMPLOYMENT, VINEYARDS PROJECT		
Employment Source	Jobs Generated	Notes
VILLAGE CENTER USES		
Retail	124	Based on 500 ft per employee from Brentwood General Plan Land Use Calculations, Table 2. Also assumed 5% average long-term vacancy factor.
Office	104	Based on 275 sf per employee from Brentwood General Plan Land Use Calculations, Table 2. Also assumes 5% average long-term vacancy factor.
Civic	13	Based on 777 sf per employee density factor from HEG in-house research.

Employment Source	Jobs Generated	Notes
Institutional (congregate care)	120	Based on 0.6 employees per bed, per HEG research on congregate care facilities.
Hotel	35	Estimate from Tom Callahan PKF Consultants,
OTHER		
Winery	200	M. Beinke, Esq., Blackhawk Properties.
Management/Maintenance for high density residential	14	Based on two employees for every 50 units, per HEG research.
Total Employment	610	
Source: Hausrath Economics Group (HEG), 2003		

Annexation Sites

Of the two Annexation Sites, the community college site offers the greatest potential for future employment – should the Contra Costa Community College District pursue development of a college at that location. The John Marsh Home is anticipated to make improvements to the Home and perhaps offer limited public park uses, such as an interpretation center. However, extensive permanent employment opportunities at the John Marsh Home are not anticipated.

Table 3.3-4 indicates the potential permanent employment that would be generated at the Annexation Sites if development plans are created and approved by the Contra Costa Community College District for the college site, and improvement plans are made by the State for park improvements at the John Marsh Home. A total of 182 potential future jobs could be created at the Annexation Sites, 170 of which (93%) would be due to the community college. The college employment estimates are based on enrollment by 5,000 full-time equivalent students, representing up to about 7,000 full-time and part-time students. The state park jobs represent a high-end estimate for managing the 3,800-acre park and the 40-acre John Marsh Home site. The estimate is indicative of the employment associated with a park of this scale and interpretative center possibilities. The estimated 12 employment opportunities account for seven permanent positions and six seasonal (nine-month annually) positions. According to the Hausrath Economics Group report, the John Marsh Historic Trust does not anticipate providing any staffing in addition to the state park employment estimates.³

³ Hausrath Economics Group (HEG) report prepared for the Vineyards at Marsh Creek project and Annexation Sites, September 2003. HEG report indicates source as Kathy Leighton, Board President, John Marsh Historic Trust, phone conversation of July 14, 2003.

TABLE 3.3-4 ESTIMATED FUTURE DIRECT PERMANENT EMPLOYMENT, ANNEXATION SITES		
Employment Source	Jobs Generated	Notes
Contra Costa Community College	170	Estimate is based on information provided by the Office of the President, Los Medanos College
John Marsh Home	12	Estimate is based on conversation with State Park staff.
Total Potential Future Employment	182	
Source: Hausrath Economics Group (HEG), 2003		

Construction-Related Employment

Vineyards Project

In addition to the approximately 610 future permanent jobs, the Vineyards project would generate approximately 4,400 person-years of construction employment, including direct construction jobs, indirect employment and induced employment (Table 3.3-5).

TABLE 3.3-5 FUTURE CONSTRUCTION-RELATED EMPLOYMENT, VINEYARDS RESIDENTIAL		
Employment Type	Annual Jobs	Person-years of Employment
Direct Employment	380	1,730
Indirect Employment	280	1,260
Induced Employment	300	1,390
Total Construction-related Employment	960	4,380
Source: Hausrath Economics Group (HEG), 2003.		

Residential development would generate approximately 1,000 jobs annually, assuming construction of approximately 350 units per year. Approximately 40% of these would be direct jobs filled by construction workers hired to develop the Vineyards project. Another 60% of construction-related jobs would be due to firms providing and transporting materials to the job site and providing goods and services related to housing construction (indirect employment). Jobs would also be generated in the retail, entertainment, housing, health care, finance, and other sectors supported by the consumption expenditures of construction workers and related construction employees (i.e., induced employment).

Construction of the Village Center Uses, including the winery and institutional uses, would likely generate nearly the same volume of direct, indirect and induced construction-related opportunities, as would construction of the residential component.

It is anticipated that construction workers would come from the available large East Bay area labor pool. Not all workers would live in nearby communities or even in Contra Costa County. The indirect

jobs associated with building materials suppliers, other construction supplies, and related services would be more widely dispersed, and the induced employment associated with personal consumption spending of these workers represent jobs located near the places of residence of the workers.

Annexation Sites

No plans have been developed for a future community college. Similarly, improvement plans have not been developed for the John Marsh Home. Consequently, it would be highly speculative to determine the number of construction-related jobs that could be generated by potential uses at these sites.

However, it is likely that the construction jobs would be filled by employees throughout the East Bay area, much like with the Vineyards project. Permanent jobs would be developed for construction of the college and any improvements at the John Marsh Home. The construction jobs would be anticipated to require supplies from local and Bay Area sources, which would contribute to indirect jobs support and possibly growth throughout the region.

Secondary Employment

Vineyards Project

The introduction of new residents into the Vineyards at Marsh Creek project would support employment in the Brentwood area in addition to the Vineyards project area itself. Vineyards residents would shop for retail goods, personal services, household operations and maintenance, entertainment, transportation, and medical services in Brentwood and in nearby communities. Some of that spending would support economic activity and jobs in the proposed Village Center and some would support economic activity in downtown Brentwood and other retail and business locations.

Visitors to the winery, hotel, and congregate care facility would generate spending that would support retail activity and employment in the Vineyards Village Center and elsewhere in Brentwood. Employees and business owners in the winery, hotel, congregate care facility, civic and office uses would shop in the Village Center and would also support businesses, thereby supporting some of the local employment as well as employment in areas outside of the immediate project area and City of Brentwood.

Annexation Sites

Potential development at the Annexation Sites, particularly the community college, would be anticipated to also generate secondary employment. Students at the community college would likely shop for retail goods, personal services, student supplies and clothing, entertainment, transportation, and medical services in Brentwood and in nearby communities. Some of that spending would support economic activity and jobs in the proposed Village Center, some in downtown Brentwood as well as other retail and business locations. These expenditures would support economic activity in the Vineyards project, Brentwood and in outlying areas.

Jobs/Housing Balance

Vineyards Project

This jobs/housing balance discussion is presented for information purposes. The State CEQA Guidelines do not identify jobs/housing balance as an environmental issue. Generally, a jobs/housing balance is achieved on a citywide or regional basis, not on a project by project basis. However, the City of Brentwood's General Plan encourages a stronger jobs to housing balance within the City's Planning Area and, therefore, it is discussed herein.

The City of Brentwood General Plan was adopted with a policy to attain a jobs/housing balance at a minimum of 2.0 jobs per household within SPA J and to attain a 1.5 jobs/housing balance citywide. SPA J is a planning area of approximately 5,500 acres designated in the City of Brentwood General Plan 2001-2021. SPA J provides a range of land use options in the City's General Plan and, therefore, does not establish precise objectives for SPA J (Hausrath Economic Group, 2003.) The Vineyards project area is designated primarily for residential uses, with some business park uses. Outside of the Vineyards project area, approximately 327 acres of SPA J are designated for general or regional commercial, mixed-use business park, and industrial uses. There are also just over 450 acres designated for a range of residential development. Much of the remaining area is designated as Urban Reserve. Using Brentwood General Plan planning factors, and ignoring the new State park ownership and its location outside the ULL SPA J outside the Vineyards project area could support about 6,570 jobs and 1,380 dwelling units (not attributing any jobs or homes to the 1,500 acres of Urban Reserve). Adding the estimated 791 Vineyards project jobs and 1,600 residential units, results in 7,360 jobs and 2,980 residences within SPA J resulting in a jobs/housing ratio of 2.5 to 1.0.

However, two key factors exist that now prohibit the City of Brentwood's ability to achieve a 2.0 jobs per household average in SPA J. First, Contra Costa County placed most of SPA J outside of the Urban Limit Line. Properties outside the ULL are not to be developed in urban uses. 90% of the Commercial/Industrial and Business Park acreage (357 of 398 total acres) in SPA J are now outside of the ULL. There are only 41 acres remaining as Business Park within the Vineyards project site. The Vineyards project is requesting a General Plan Amendment to: (1) reconfigure the Business Park designation on 62.5 acres, and (2) designate the Community College on the 60 acres Annexation Site, outside the Vineyards project boundary. Secondly, the State of California recently acquired nearly 4,000 acres in SPA J for state park uses. Given these constraints, a 2.0 jobs to housing ratio is not proposed in the Vineyards project area and the Vineyards project applicant is proposing a General Plan amendment to this policy for the project. Onsite, the proposed project would develop approximately 1,600 housing units (including 200,000 sf of congregate care). The Vineyards project would generate approximately 610 permanent jobs and 960 construction jobs. Therefore, at buildout, the 610 jobs to the 1600 residential units would achieve a jobs/housing balance of approximately 0.4:1 onsite (and 0.6 if construction jobs are included), maintaining the existing City ratio.

In addition it bears noting that the City's jobs/housing policies are intended to reduce regional commute trips. Provision of active adult housing units, senior apartments and congregate care facilities typically would generate fewer regional commute trips than other types of housing. If one were to exclude all or a portion of the active adult units, senior apartments, or congregate care facilities from the jobs/housing equation, then the ratio of jobs to housing provided by the project would be substantially higher.

Annexation Sites

No new housing would be developed at the Annexation Sites since the potential future uses are a community college and park improvements at the John Marsh Home. Therefore, these uses would directly add employment only uses. The Annexation Sites are estimated to potentially add 182 permanent jobs to the region and may add an unquantified number of construction and secondary jobs.

3.4 TRANSPORTATION / CIRCULATION

This section of the EIR is based on a traffic report prepared by Fehr & Peers (Appendix D) for the Vineyards project and Annexation Sites. The traffic report was subsequently reviewed by the City of Brentwood before its use in this EIR.

As considered elsewhere in this EIR, the transportation and circulation impacts are evaluated at a project-specific level of detail for the Vineyards project for as much specificity as is available for that project. The analysis evaluates construction traffic, project access and circulation, emergency vehicle access, and potential project conflicts with adopted alternative plans and programs.

For the potential future community college and John Marsh Home Site (i.e., the Annexation Sites), the traffic report considers these potential uses would be developed (i.e., the community college) or implemented (i.e., John Marsh Home park use) sometime between the Near-Term and Long-Term, as defined in this traffic section. The “entitlements” to be considered by the City of Brentwood at these sites are annexation to the City of Brentwood and General Plan amendments to allow for potential development in the future as a prospective community college and “park” use, respectively, of these sites. However, there are no development plans for either annexation property. Consequently, the transportation and circulation analysis is conducted at a much more general level (i.e., “programmatic”) level than for the proposed Vineyards project.

3.4.1 ENVIRONMENTAL SETTING

Description of Study Area

Vineyards Project

The City of Brentwood is located in the eastern portion of Contra Costa County and is neighbored by the Cities of Oakley and Antioch to the north and northwest, respectively. The proposed Vineyards project is located along Concord Avenue at the southern border of the City of Brentwood. Land uses surrounding the Vineyards site are predominantly in agricultural and residential uses. A PG&E station exists east of, and adjacent to, the Vineyards project. The Vineyards study area is bounded by Balfour Road on the north, Deer Valley Road on the west, Sellers Avenue on the east, and Marsh Creek Road on the south. This study area was chosen based on discussions with City staff as the area most likely to experience traffic impacts, if any, of the proposed project.

Annexation Sites

The Annexation Sites are located south and west of the Vineyards project. The potential community college would be developed across Marsh Creek at the terminus of the southern extension of Fairview Avenue in the alignment proposed with the Vineyards project. The John Marsh Home exists to the southwest of the Vineyards project. The roadways to be studied with the Vineyards project are the same for the Annexation Sites. Land uses surrounding the Annexation Sites are currently grazing and open space.

Existing Roadway Network

The City of Brentwood reviewed the roadways and intersections that exist and are planned in the vicinity of the Vineyards project and Annexation Sites and have determined the study area for traffic analysis. The existing roadway network in the vicinity of the projects is indicated on Exhibit 3.4-1.

SR4 Bypass is a developing north-south roadway that connects SR4 in Antioch to Vasco Road south of Brentwood. This roadway is planned for construction in three segments, with Segment 2 currently operating between Lone Tree Way and Balfour Road as a two-lane expressway, with an at-grade intersection at Sand Creek Road. The speed limit on this facility is currently 55 miles per hour (MPH). The SR4 Bypass is a designated Route of Regional Significance, as defined by the Contra Costa County Transportation Authority (CCTA).



Segment 1 of the Bypass, located between SR4/SR 160 and Lone Tree Way, will have grade-separated interchanges at Lone Tree Way and Laurel Road, and is currently in the design phase with construction expected to be completed by 2007.

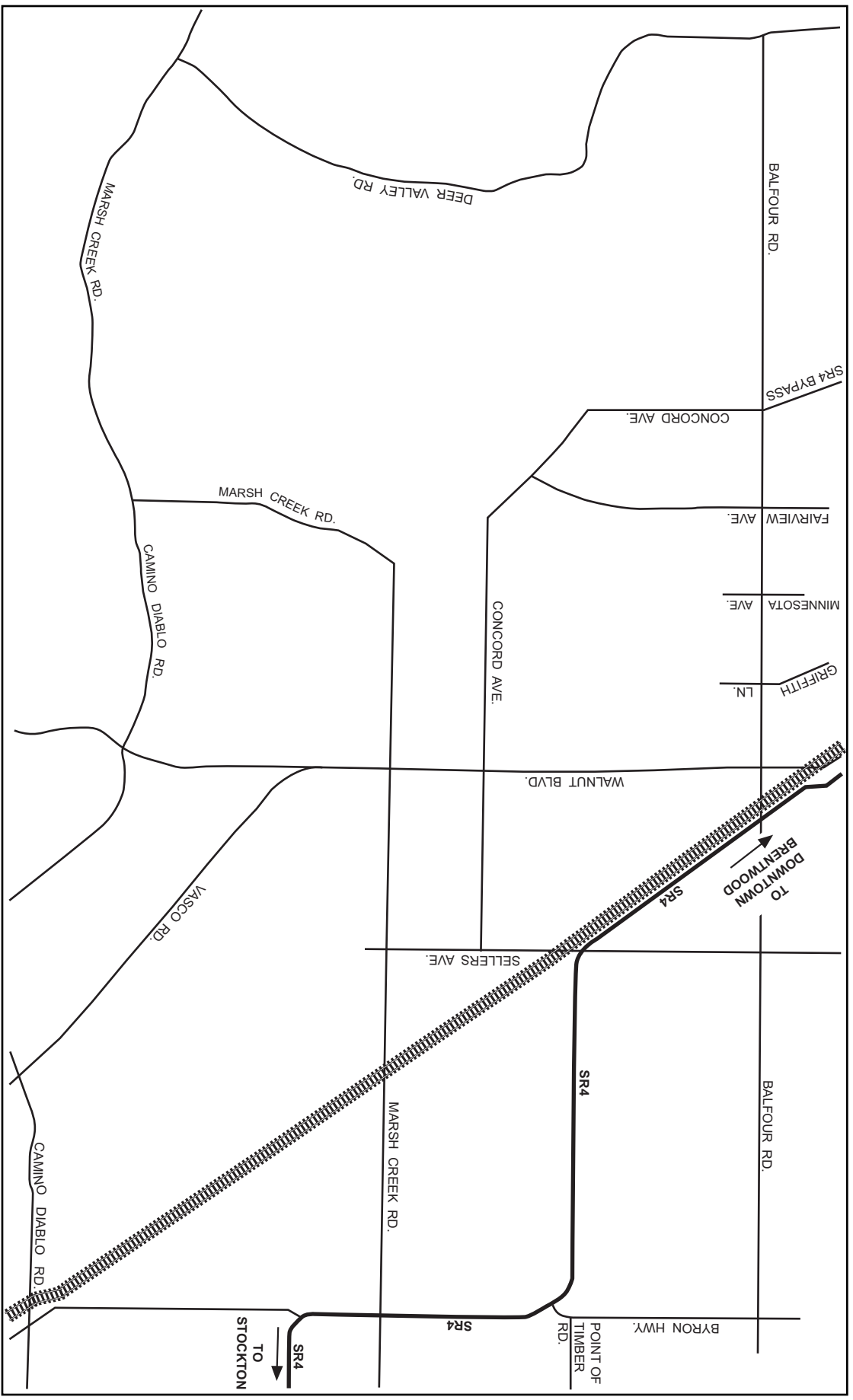
Segment 3 (i.e., 3a and 3b) of the Bypass will be constructed between Balfour Road and Vasco Road with at-grade access proposed at Walnut Boulevard and Marsh Creek Road and an interchange at Balfour Road.

Balfour Road is an east-west roadway that connects Bixler Road in the east to Deer Valley Road in the west. Two lanes in each direction are provided from Brentwood Boulevard to west of West Country Club Drive. In the study area, Balfour Road is unimproved from west of West Country Club Drive to Deer Valley Road, outside the city limits of Brentwood. Class II bike lanes (signed and striped lanes) are provided on the improved sections of Balfour Road. The speed limit on Balfour Road in the study area is 45 MPH. Balfour Road is a designated Route of Regional Significance.



Fairview Avenue is a north-south roadway in the City of Brentwood and is located parallel to and east of the SR4 Bypass. This roadway connects Lone Tree Way in the north to Concord Avenue (future John Muir Parkway) in the south. One to two travel lanes are provided in each direction with a speed limit of 45 MPH in the study area. Class II bicycle lanes are provided on improved sections of Fairview Avenue. Fairview Avenue is considered a designated Route of Regional Significance.

Concord Avenue is a curving north-south/east-west oriented rural roadway that connects Balfour Road to Marsh Creek Road. This roadway provides one lane per direction with a speed limit of 45 MPH. The portion of this roadway south of Balfour Road and west of Fairview Avenue occupies



Source: FEHR & PEERS Transportation Consultants (2003)



Not to scale

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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR
Existing Roadway Network

Exhibit 3.4-1

the SR4 Bypass right-of-way. With construction of Segment 3 of the SR4 Bypass, Concord Avenue will be replaced by John Muir Parkway, which will generally parallel its route.

Marsh Creek Road is mostly an east-west oriented rural roadway that connects SR4 with Camino Diablo. For much of its length, Marsh Creek parallels Balfour Road. The roadway currently provides one lane per direction. Marsh Creek Road eventually connects to the Clayton/Concord area and serves as a secondary access route from the Brentwood area to the Central Contra Costa County area. Marsh Creek Road is a designated Route of Regional Significance.

Vasco Road is a two-lane rural roadway that connects the East County area to Livermore and other elements of the regional freeway system. The posted speed limit on Vasco Road is 55 MPH.

Sellers Avenue is a two-lane rural roadway that functions as one of the major north-south roadways in Brentwood. Sellers Avenue parallels SR4 and serves as the approximate eastern boundary for the City of Brentwood and the project study area.

Deer Valley Road is a two-lane rural roadway that serves as the western limit of the project study area. Deer Valley Road connects to Hillcrest Avenue and SR4 in the city of Antioch. The posted speed limit on this road is 45 MPH with warning signs for lower speed limits in sections with significant horizontal and vertical curvature. Deer Valley Road is a designated Route of Regional Significance.

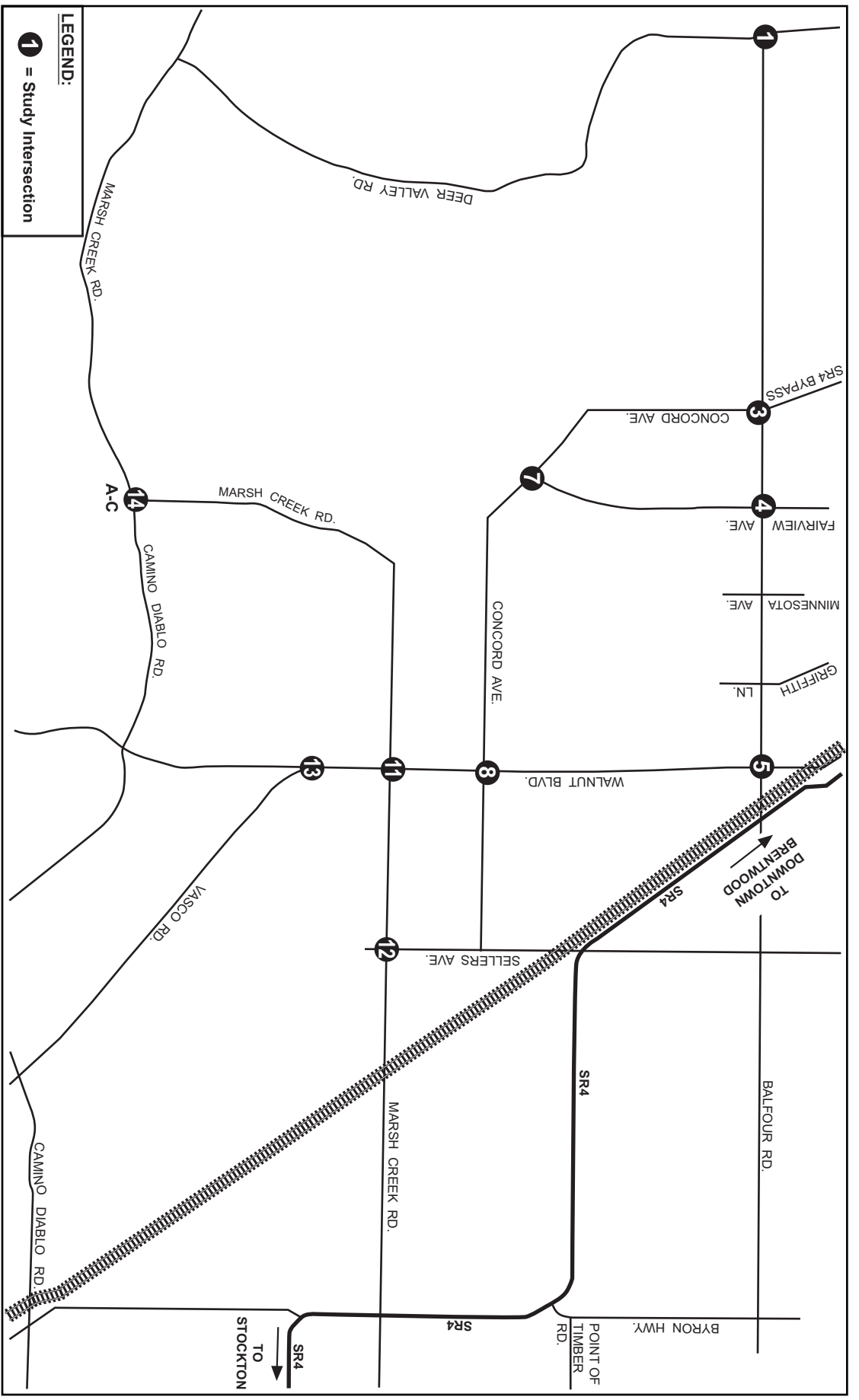
Camino Diablo is a two-lane rural roadway that represents the southern limit of the project study area. Camino Diablo's significance is the connections it provides to other regional roadways such as Marsh Creek, Vasco Road, and Byron Highway. For reference, the intersection of Camino Diablo and Marsh Creek Road has an unusual configuration and will be represented in this report as three separate stop-sign controlled intersections. For operational assessments, the worst level of service for each of the separate intersections will be reported.



John Muir Parkway is a new two-lane roadway that will be built on portions of existing segments of Concord Avenue. This roadway will provide a continuous connection from Fairview Avenue to Balfour Road. An intersection currently exists on Balfour Road, however, the traffic signal is currently inactive. This roadway will be completed concurrently with the construction of Segment 3 of the SR4 Bypass.

Intersections Considered in this Traffic Analysis

The 17 intersections (Exhibits 3.4-2, 3.4-3 and 3.4-4) listed below are also included in the evaluation of transportation and circulation impacts for the Vineyards project and Annexation Sites. The intersections were selected because the project traffic is anticipated to constitute more than five percent (5%) to the future volumes at each location.



Source: FEHR & PEERS Transportation Consultants (2003)

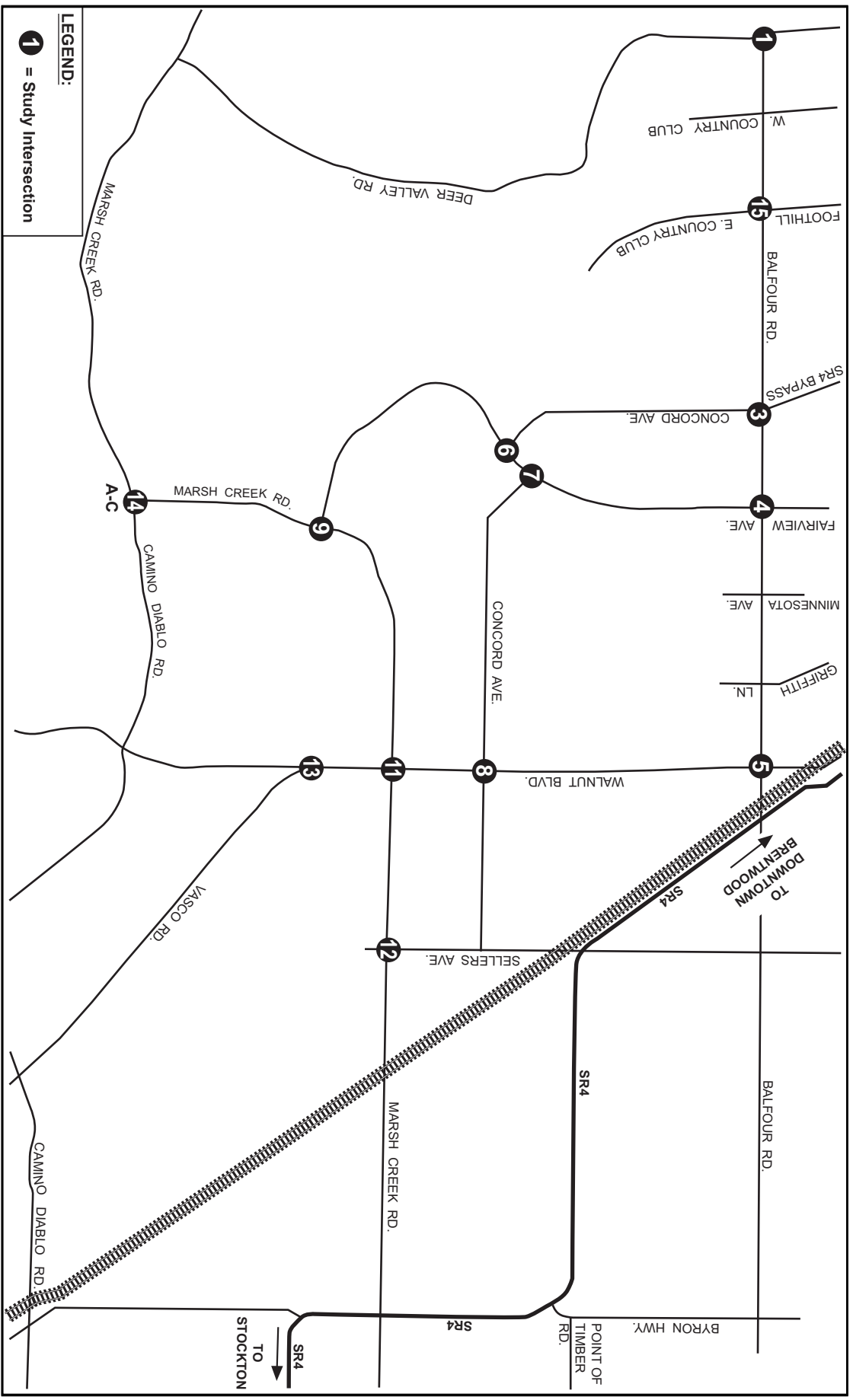


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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR
Existing Intersection Locations

Exhibit 3.4-2



Source: FEHR & PEERS Transportation Consultants (2003)



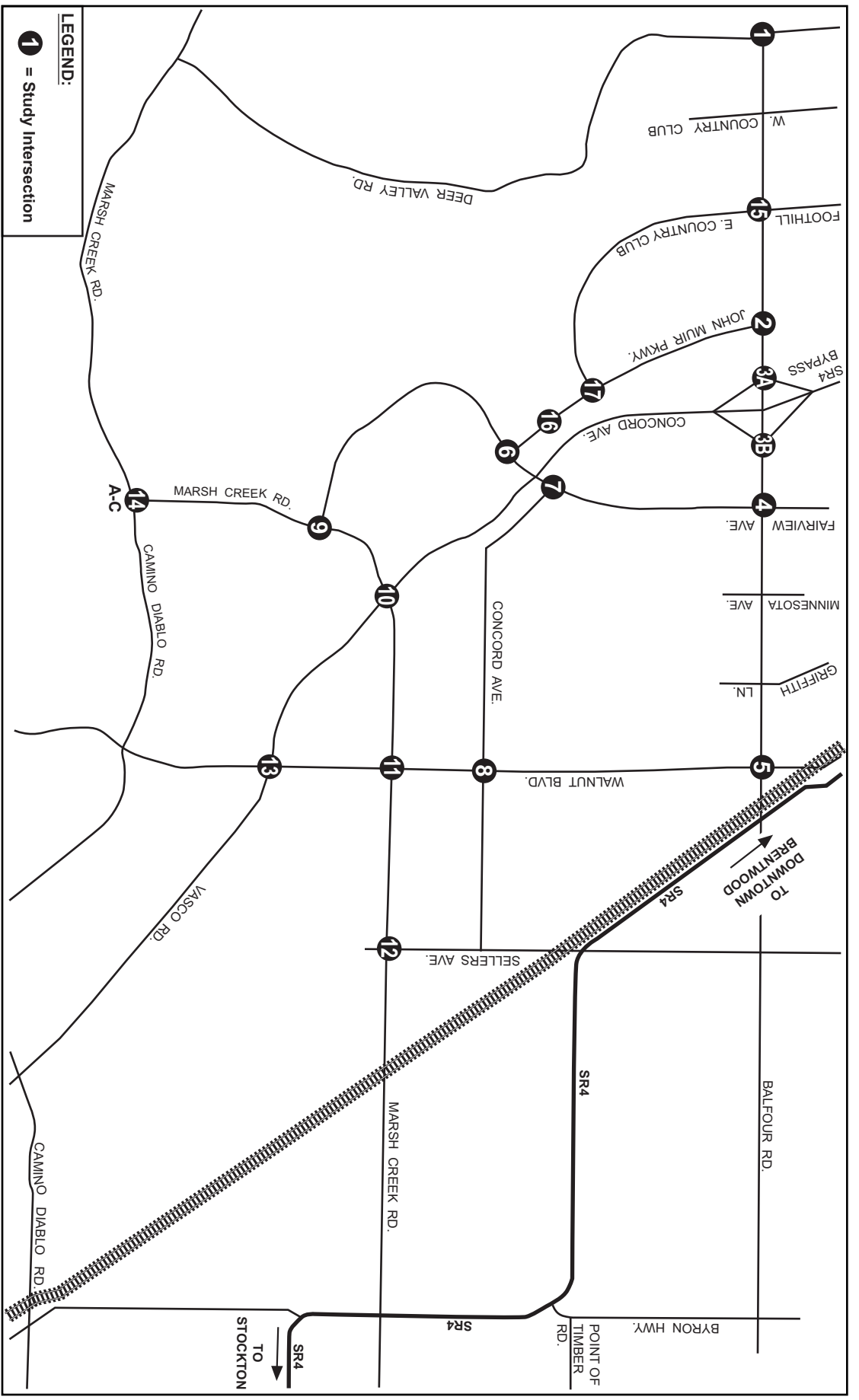
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Existing Plus Approved Intersection Locations

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Exhibit 3.4-3



Source: FEHR & PEERS Transportation Consultants (2003)

LEGEND:

1 = Study Intersection



Not to scale

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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR
Long-Term Intersection Locations

Exhibit 3.4-4

The intersection of Camino Diablo Road and Marsh Creek Road has an unusual configuration. Therefore, this intersection is represented at three separate stop-controlled intersections.

1. Balfour Road/Deer Valley Road - unsignalized (existing)
2. John Muir Parkway/Balfour Road -signalized (future intersection)
3. State Route 4 (SR4) Bypass/Balfour Road - signalized (existing as SR4 Bypass/ Concord Avenue/Balfour Road)
4. Fairview Avenue/Balfour Road - signalized (existing)
5. Walnut Boulevard/Balfour Road - signalized (existing)
6. John Muir Parkway/Fairview Avenue - signalized (future intersection)
7. Fairview Avenue/Concord Avenue - currently unsignalized
8. Walnut Boulevard/Concord Avenue- currently unsignalized
9. Fairview Avenue/Marsh Creek Road - signalized (future intersection)
10. SR4 Bypass/Marsh Creek Road - signalized (future intersection)
11. Marsh Creek/Walnut Boulevard - signalized (existing)
12. Sellers Avenue/Marsh Creek Road - unsignalized (existing)
13. Walnut Boulevard/Vasco Road - unsignalized (existing)
14. Marsh Creek Road/Camino Diablo Road - unsignalized (existing)
15. East Country Club Drive/Foothill Drive/Balfour Road - unsignalized (existing)
16. John Muir Parkway/Project Driveway - unsignalized (future intersection)
17. Foothill Drive/John Muir Parkway - signalized (future intersection)

Intersection Operations - Methodology

The analysis methodology outlined in Contra Costa Transportation Authority's (CCTA) Technical Procedures (CCTA, 1997) was utilized in the preparation of this traffic study. As part of this analysis procedure, intersection operations were evaluated using the methodologies described below.

Signalized Intersections

At signalized intersections, traffic conditions are evaluated using the LOS methodology developed by the CCTA. To measure and describe the operational status of the local roadway network, transportation engineers and planners commonly use a grading system called level of service (LOS). Level of service is a description of an intersection's operation, ranging from LOS A (indicating free-flow traffic conditions with little or no delay) to LOS F (representing over-saturated conditions where traffic flows exceed design capacity, resulting in long queues and delays).

The operation analysis uses various intersection characteristics, such as traffic volumes, lane geometry, and signal phasing, to estimate the volume-to-capacity (V/C) ratio of an intersection. Table 3.4-1 summarizes the relationship between the V/C ratio and Level of Service (LOS) for signalized intersections.

**TABLE 3.4-1
SIGNALIZED INTERSECTION LOS CRITERIA**

LOS	Sum of Critical Volume-to-Capacity Ratio (V/C)	Description
A	< 0.60	This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	0.61 - 0.70	This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of average delay.
C	0.71 - 0.80	These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.
D	0.81 - 0.90	At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	0.91 - 1.00	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. The individual cycle failures are frequent occurrences.
F	> 1.00	This level, considered to be unacceptable with over-saturation, that is, when arrival flow rates exceed the capacity of the intersection. It may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.

Source: Fehr & Peers July 2003; *Technical Procedures*, Contra Costa Transportation Authority, 1997.

Unsignalized Intersections

For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, the *Highway Capacity Manual* (Transportation Research Board, 2000) methodology for unsignalized intersections has been applied. With this methodology, operations are defined by the average control delay per vehicle (measured in seconds) for each stop-controlled movement.

This methodology incorporates delay associated with deceleration, acceleration, stopping, and moving up in a traffic queue. For side-street stop-controlled intersections, the delay is typically represented for each movement from the minor approaches only. Table 3.4-2 summarizes the relationship between delay and LOS for unsignalized intersections.

**TABLE 3.4-2
UNSIGNALIZED INTERSECTION LOS CRITERIA**

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)¹
A	Little or no delays.	< 10.0
B	Short traffic delays.	> 10.0 to 15.0
C	Average traffic delays.	> 15.0 to 25.0
D	Long traffic delays.	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded.	> 50.0

Source: Fehr & Peers, July 2003; *Highway Capacity Manual*, Transportation Research Board, 2000.

Existing Traffic Counts

Weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak period intersection turning movement counts were conducted at the 11 existing study intersections (refer to Exhibit 3.4-2) in November 2002 on a typical day with schools in normal session. The existing peak period traffic counts are provided in Appendix D.1. For each intersection count period, the single hour with the highest traffic volumes was identified and is represented on Exhibit 3.4-5. This peak hour data is used as the basis for traffic analysis. The existing lane configurations are shown on Exhibit 3.4-6. (Please note that these configurations represent the intersection conditions at the time of the traffic counts in November 2002. For example, improvements have recently been made to the intersection of Walnut Boulevard and Concord Avenue.)

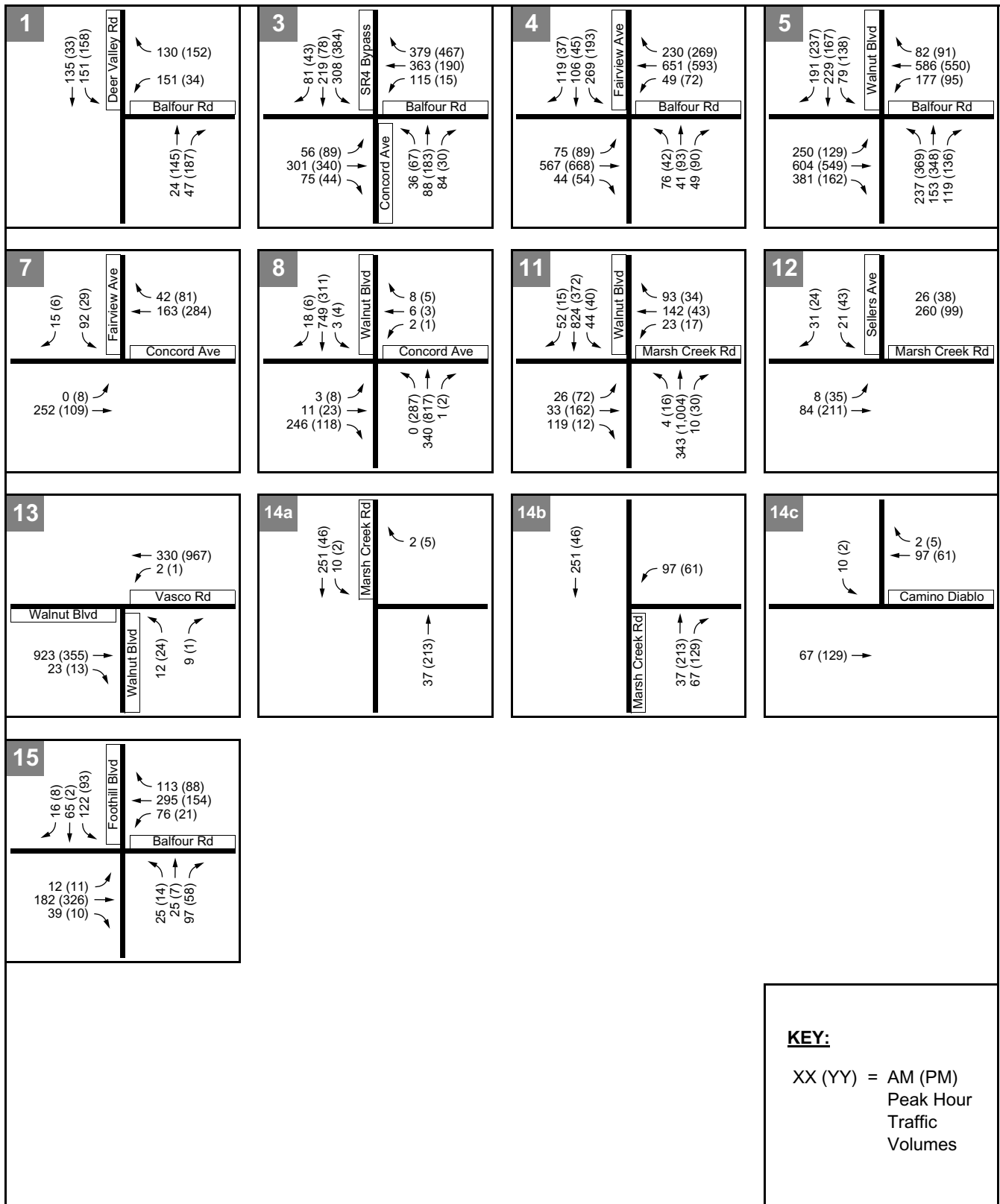
Existing Intersection Operating Conditions

Existing intersection conditions were evaluated for the weekday AM and PM peak hours at the study intersections for the Vineyards project and Annexation Sites. Table 3.4-3 summarizes the existing intersection analysis results; detailed intersection LOS calculation worksheets are provided in Appendix D.2.

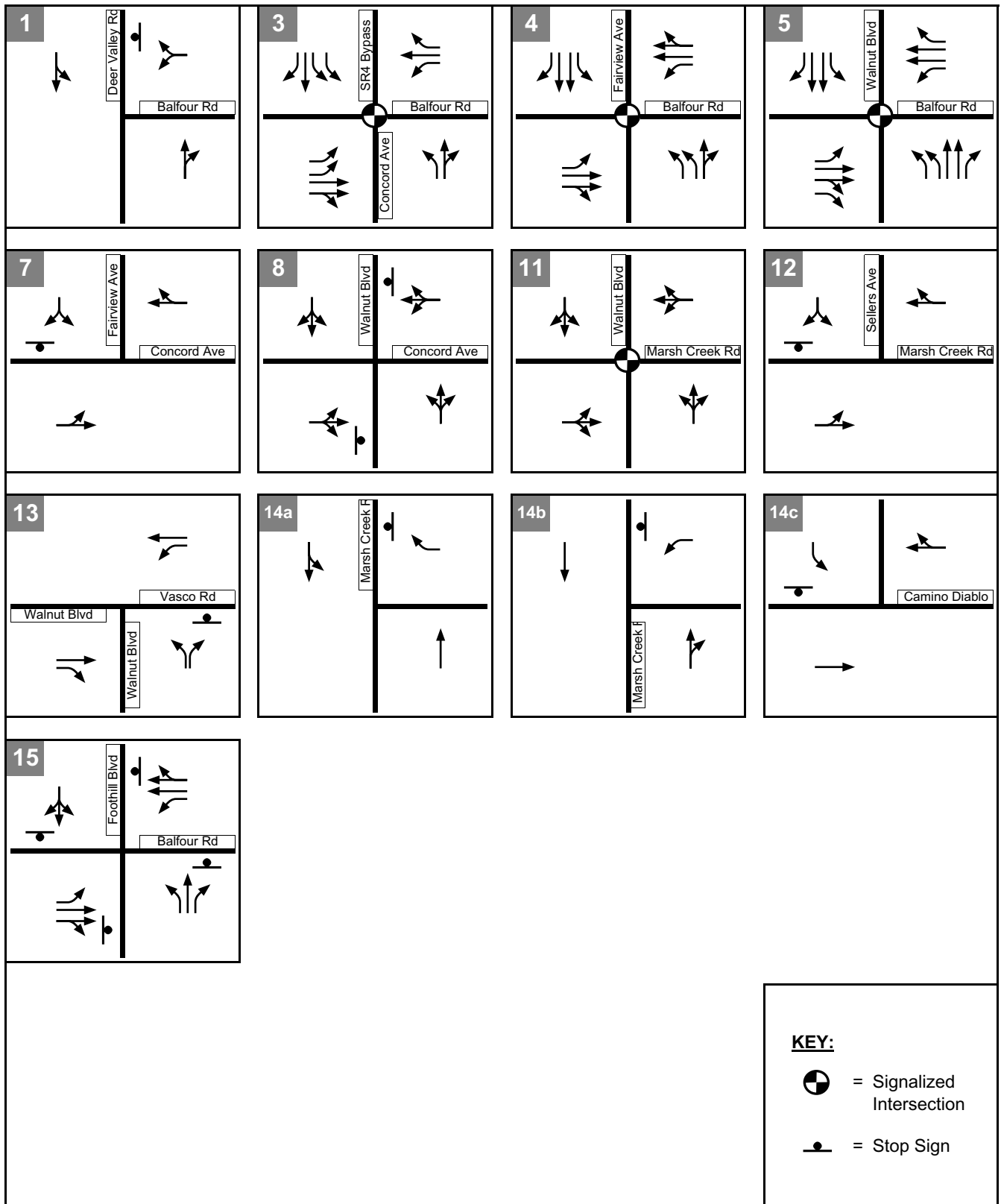
Existing Bicycle, Pedestrian and Transit Access

Class II bicycle facilities (i.e., signed and striped bicycle lanes) are provided on improved sections of Balfour Road, East Country Club Drive, West Country Club Drive, and improved segments of Fairview Avenue in the study area. Sidewalks are provided in the study area adjacent to recently developed parcels. The City of Brentwood is expected to continue requiring that Class II bike lanes and sidewalks be constructed on all improved collector and arterial roads.

There is currently no regular transit service in the project area. Brentwood *Dimes-a-Ride*, a local shuttle service, operates along Balfour Road to the north of the project. However, this service does not have designated stop locations or a defined schedule in the project area.



Source: FEHR & PEERS Transportation Consultants (2003)



Source: FEHR & PEERS Transportation Consultants (2003)

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Existing Intersections Lane Configurations and Traffic Control

**TABLE 3.4-3
EXISTING (2002) PEAK HOUR LEVEL OF SERVICE**

Location	Control	Peak Hour	V/C Ratio ² or Delay ³	LOS
Balfour Road/Deer Valley Road	SSS	AM PM	14.5 sec 12.1 sec	B B
Balfour Road/SR4 Bypass (Concord Ave)	Signal	AM PM	0.45 0.40	A A
Balfour Road/Fairview Avenue	Signal	AM PM	0.53 0.54	A A
Balfour Road/Walnut Boulevard	Signal	AM PM	0.48 0.43	A A
Concord Avenue/Fairview Avenue	SSS	AM PM	12.2 sec 11.5 sec	B B
Concord Avenue/Walnut Boulevard	SSS	AM PM	31.0 sec 43.5 sec	D E
Marsh Creek Road/Walnut Boulevard	Signal	AM PM	0.79 0.83	C D
Marsh Creek Road/Sellers Avenue	SSS	AM PM	10.5 sec 10.8 sec	B B
Vasco Road/Walnut Boulevard	SSS	AM PM	21.3 sec 28.3 sec	C D
Camino Diablo Road/Marsh Creek Road	SSS	AM PM	11.2 sec 10.9 sec	B A
Balfour Road/Foothill Drive	Signal	AM PM	0.22 0.19	A A
Signal = Signalized Intersection SSS = Side-street stop-controlled intersection AWS = All way stop-controlled intersection V/C Ratio determined for all signalized intersections using the CCTA LOS methodology. For side-street stop-controlled intersections, delay for worst movement calculated using the 2000 Highway Capacity Manual methodology. For all way stop-controlled intersections, average delay for all movements calculated using the 2000 Highway Capacity Manual methodology.				
Source: Fehr & Peers, 2003				

3.2.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

In preparation for evaluating potential transportation/circulation effects from the Vineyards project and Annexation sites, this impact section initially describes thresholds of significance, the considerations for use in the assessment, and the analysis methodology.

The impact assessments are generally organized into two key timeframes: Near-Term (i.e., before construction of Segment 3 of the SR4 Bypass), and Long-Term (after completion of Segment 3, and coincidental with City of Brentwood General Plan buildout).

Thresholds of Significance

The following significance criteria for signalized intersections were taken from the City of Brentwood General Plan and may be stricter than other criteria developed by agencies such as Contra Costa County. For instance, the *East County Action Plan* designates a LOS E threshold for Marsh Creek Road. The use of a more stringent standard ensures this analysis fully discloses any traffic impacts associated with the project.

According to the *City of Brentwood* and the *CCTA*, a significant traffic-related impact would occur if the addition of project-related traffic would:

- ❖ Cause a signalized intersection to deteriorate from an acceptable level (LOS D or better with a V/C ratio equal to or less than 0.85) to an unacceptable level (LOS D or worse with a V/C ratio greater than 0.85).
- ❖ Cause the V/C ratio at a signalized intersection operating at an unacceptable level (greater than 0.85 V/C ratio) to increase by more than 0.01.
- ❖ Cause the level of service at unsignalized intersection to degrade to worse than LOS E and causes an unsignalized intersection to meet traffic signal warrants based on Warrant 11 (peak hour volume warrant for urban areas) as listed in the Manual of Uniform Traffic Control Devices (MUTCD).
- ❖ Create significant traffic impacts not identified during the analysis of the project traffic due to the incremental traffic from construction of the project.
- ❖ Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersection) or the introduction of incompatible uses (e.g., farm equipment).
- ❖ Result in inadequate emergency access.
- ❖ Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle routes).

Considerations for Traffic/Circulation Analysis

Highway 4 Bypass

The State Route 4 Bypass Authority has designed and approved a northern 9.3-mile segment of the 30-mile transportation East County Corridor known as the State Route 4 (SR4) Bypass. The Bypass is planned to extend from SR4 / SR 160 in eastern Antioch, south approximately 9.3 miles to connect with Vasco Road at Walnut Boulevard in the City of Brentwood vicinity. “Segment 3” (i.e., Segments 3a and 3b) of the SR4 Bypass will include improvements to Marsh Creek Road to provide an east/west connector between the Bypass and State Route 4. Marsh Creek Road is planned as a two-lane State Standard highway and will require minor realignment to straighten a sharp curve in the roadway. A bridge will also be built to allow for the Bypass crossing of Marsh Creek. Segment 3 will also include new interchanges at Marsh Creek Road (at-grade signalized interchange), Balfour Road (initially, at grade signalized) and Vasco Road.

Time Horizons Evaluated

This traffic analysis includes assessment of the effects of the Vineyards project and Annexation Sites during two key time horizons. The *Near-Term* time horizon represents the traffic and roadway conditions that are assumed to be in place before construction of Segment 3 of the SR4 Bypass. For the Near-Term horizon, it is assumed that the Vineyards project will develop with all of the proposed residential and approximately 12,000 s.f. of the commercial uses. It is assumed that the community college is not built and that no improvements are made to the John Marsh Home.

The *Long-Term* horizon assumes build-out of the City of Brentwood General Plan, full construction of the Vineyards project and the Annexation Sites, and the opening of Segment 3 of the SR4 Bypass. Assumptions for the Long-Term horizon include that all other proposed uses of the Vineyards project are developed and occupied. On the Annexation Sites, the community college is assumed to be built, and occupied by approximately 5,000 students. Limited John Marsh Home improvements are assumed including, perhaps, restoration of the historic John Marsh Home, addition of a small parking area, and development of an interpretative center.

While the Long-term scenario assumes General Plan buildout, it assumes development of the Vineyards project instead of the existing planned land uses at the Vineyards project site. Consequently, the Long-term scenario differs from the scenario analyzed in the General Plan EIR because the Vineyards project would replace other planned land uses in SPA J at the Vineyards project location.

The Long-term scenario is both the project buildout scenario and the cumulative scenario.

Analysis Methodology

Forecast Scenarios Evaluated

For this study, the following scenarios were evaluated:

- ❖ Existing – Existing (2002) conditions from recent traffic counts;
- ❖ Existing Plus Approved (hereinafter “Near-term Without Project”) Development– Near-Term (2007) future conditions with existing traffic plus additional traffic from approved developments in the City of Brentwood;
- ❖ Existing Plus Approved Development Plus Project (hereinafter “Near-term Plus Project”)– Near-Term (2007) future condition with existing traffic, additional traffic from approved developments, and project traffic.
- ❖ Long-Term Minus Project – Future (2025) forecasted conditions that consider build-out of the City of Brentwood General Plan and planned roadway improvements; and
- ❖ Long-Term– Future (2025) forecasted conditions with project related traffic and other remaining General Plan buildout and planned roadway improvements.

Vehicle Trip Generation Methodology

The project trip generation is based on data from the Institute of Transportation Engineers (ITE’s) *Trip Generation Manual* (6th Edition), as well as previous studies performed by Fehr & Peers for unique uses. These uses include the active adult housing, assisted living, and the winery. For the active adult housing, trip generation is based on a study prepared by Fehr & Peers entitled *The City of Brentwood Active Adult Housing Traffic Fee Review*. The assisted living trip generation was established through a study of assisted living facilities operated by the Sunrise Assisted Living Company. The winery trip generation was established through recent driveway counts at the Wente Winery in Livermore, California. These trip generation studies are included in Appendix D.3. Trip rates for each of the uses are shown in Table 3.4-4.

TABLE 3.4-4 TRIP GENERATION RATES FOR PROPOSED DEVELOPMENT			
Proposed Land Use	ITE Code ¹	AM Peak Hour ²	PM Peak Hour ²
Vineyards Project			
Active Adult Living ³	N/A	0.33	0.44
Market Rate Single-Family	210	$T = 0.7(X) + 9.477$	$\text{Ln}(T) = 0.901 \text{Ln}(X) + 0.527$
Market Rate Multi-Family	220	$T = 0.497(X) + 3.238$	$T = 0.541(X) + 18.743$
Senior Rental Housing ³	N/A	0.33	0.44
Congregate Care	620	0.4	0.36
Assisted Living ⁴	N/A	0.11	0.34
Office	710	1.56	1.49
Retail ⁵	820	1.03	$\text{Ln}(T) = 0.660 \text{Ln}(X) + 3.403$
Hotel with Convention Center	310	$\text{Ln}(T) = 1.240 \text{Ln}(X) - 1.998$	$\text{Ln}(T) = 1.212 \text{Ln}(X) - 1.763$
Winery ⁶	N/A	0.72	2.22
Annexation Sites			
Community College	540	0.14	0.17
John Marsh Home (Park) ⁷	412	0.01	0.06
1 ITE Code not shown for uses where ITE trip rates not utilized. These uses include Active Adult Living, Assisted Living, and Winery. 2 T= Number of trips, DU= Dwelling units, LN= Natural Logarithm, X=1,000 square feet of development 3 Taken from <i>Brentwood Active Adult Housing Traffic Fee Review</i> (Fehr & Peers, December 1998). Rate per dwelling unit. 4 Taken from Sunrise Assisted Living Trip Generation Study. 5 Fitted curve equation does not satisfy requirements for use as stated in ITE <i>Trip Generation Handbook</i> (4 th Edition). 6 Based on trip generation study for Wente Winery in Livermore, California. 7 Assumed to operate as a regional park; trip generation based on number of acres.			
Source: Fehr & Peers, 2003.			

As shown in Table 3.4-4, the fitted curve equations are employed along with the average trip rates. Fitted curve equations are applied when the equation criteria, as set forth in ITE’s *Trip Generation Handbook* (4th Edition), are met. The criteria address the number of trip generation studies, and the

ability of the fitted curve equation to match the data points as indicated by the R^2 value of the trip generation equation. When the equations are unavailable or do not meet the criteria, the average trip rates are applied. AM peak hour trip generation equations are not used for the commercial development as the equation does not meet the requirements set forth by the *Trip Generation Handbook* (low R^2 value).

Description of Project by Forecast Scenario

The *Vineyards project* will consist of a combination of housing and commercial property on a 481-acre parcel. Land uses assumed to be developed within the Vineyards project in the Near-Term and Long-Term include:

Near-term Vineyards Project Development

- ❖ 1,100 of single-family active adult housing
- ❖ 150 units of market rate single-family housing
- ❖ 3,000 square feet of office (various types)
- ❖ 7,000 square feet of retail uses (various types)

Long-term Vineyards Project Additional Development

- ❖ 150 units of senior rental housing (multi-family)
- ❖ 200 units of market rate multi-family housing
- ❖ 50,000 square feet of congregate care facilities (nursing homes)
- ❖ 150,000 square feet of assisted living facilities (150 units)
- ❖ 27,000 square feet of office (various types)
- ❖ 63,000 square feet of retail uses (various types)
- ❖ 150 unit Hotel with a Convention Center
- ❖ Winery with production and tasting facilities

The *Annexation Sites* would consist of annexation of a 40-acre site to the City of Brentwood and amendment to the Brentwood General Plan that would allow for the potential opening of the John Marsh Home to public visitation. The Annexation Sites also includes the annexation to the City of Brentwood of a 60-acre site and Brentwood General Plan amendment that could allow for the potential future development of a community college. The former property owner offered this second site to the Contra Costa County Community College District for their exclusive use. This analysis assumes that, if constructed, 5,000 students would attend this college facility. Please note there are no current development plans or formal proposals to construct either of the Annexation Sites facilities. For purposes of this analysis, the Annexation Sites are *assumed* to be constructed some time after the 2007 Near-Term Scenario.

Given the lack of detailed information regarding several portions of the Vineyards project and Annexation Sites, several assumptions are made for this traffic analysis:

- ❖ The Vineyards project commercial space is assumed to be general commercial rather than assigned to specific uses (e.g., restaurants, grocery store).
- ❖ The Vineyards project hotel is assumed to operate as a hotel with a convention center and is assumed to have 150 rooms.
- ❖ The community college is estimated to serve about 5,000 students based on the latest available information.

NEAR-TERM VINEYARDS PROJECT IMPACTS

Since potential development of the Annexation Sites is assumed to occur after completion of Segment 3 of the Bypass, impact assessment from the Annexation Sites is excluded from the Near-term analysis. Instead, the Near-term analysis includes only Near-term development with the Vineyards Project.

Near-Term Roadway Improvements, Lane Geometry and Traffic Controls

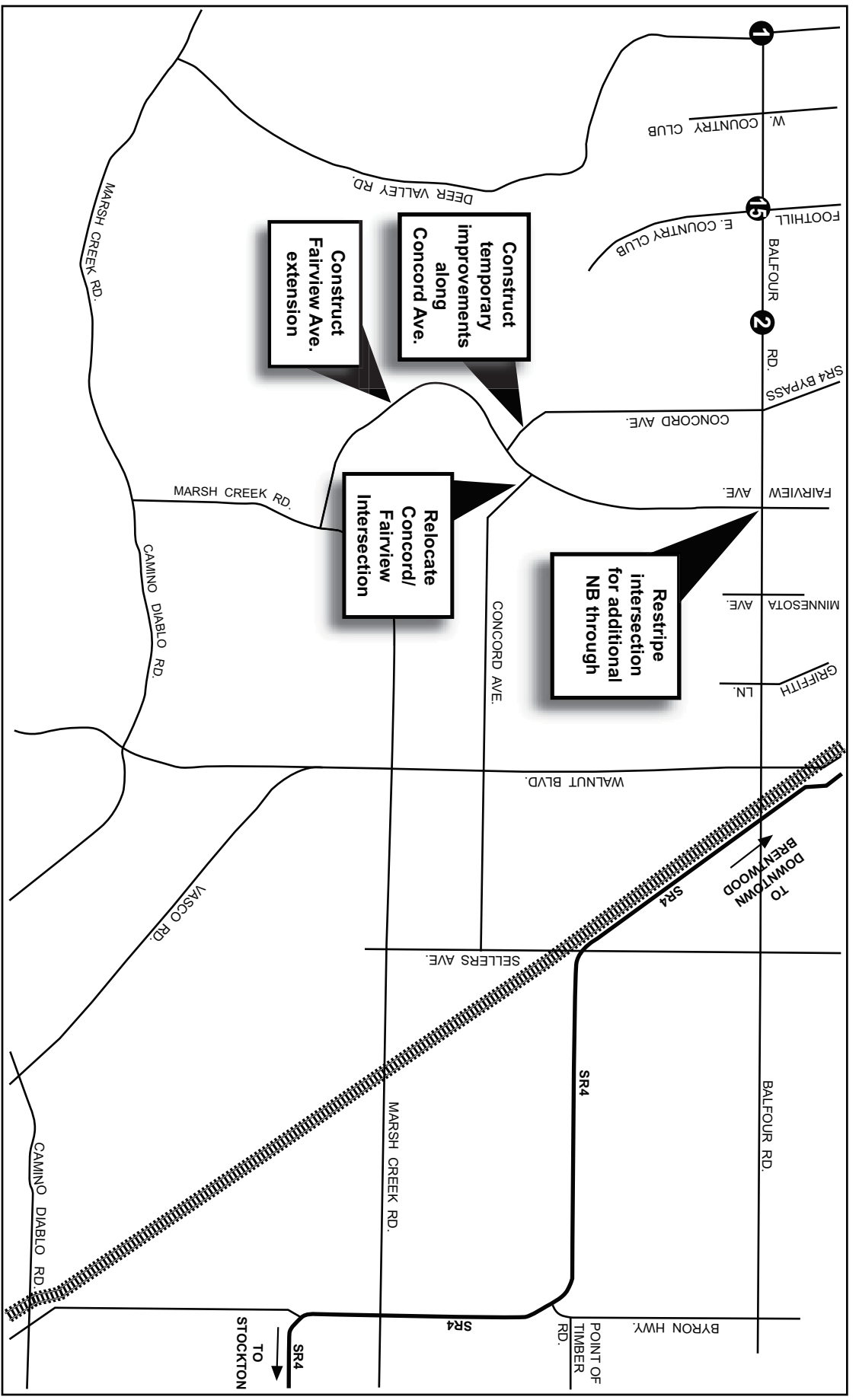
During the construction of the Near-Term Vineyards project, several roadways will be constructed or improved. Moreover, a number of traffic controls will be modified. The major *Near-Term* roadway improvements, lane geometries and traffic controls assumed to be completed include the following (Exhibit 3.4-7):

Roadway Improvements

Several roadway modifications are assumed as part of the Near-Term scenario. These improvements include:

- ❖ Extension of Fairview Avenue from Concord Avenue to Marsh Creek Road by the project.
- ❖ Installation of a traffic signal at Balfour Road/Deer Valley Road. This signal is included in the *2002/2003 City of Brentwood Traffic Fee Program*.
- ❖ Re-stripping of the Balfour Road/Fairview Avenue intersection for northbound and eastbound approach. Currently, Fairview Avenue is two lanes in the southbound direction with only one lane in the northbound direction. With the completion of a proposed residential development in the northeastern quadrant of this intersection, the road will be widened to four lanes, allowing for dual east-bound left-turn lanes and two north-bound through lanes with appropriate re-stripping of this intersection.

This analysis assumes that Concord Avenue will remain open during the Near-Term period and that the SR4 Bypass will not be open prior to 2007 (the year corresponding to the Near-Term scenario). Given the difficulty in constructing John Muir Parkway without completing the grading for the SR4 Bypass, this analysis also assumes that John Muir Parkway will not be completed prior to 2007. The existing segments of John Muir Parkway would be open for use by adjacent developments. Prior to construction of the SR4 Bypass and John Muir Parkway, the project will utilize Concord Avenue and Fairview Avenue to gain access to the Regional Roadway System.



Source: FEHR & PEERS Transportation Consultants (2003)



Not to scale

Near-Term Vineyards Project Roadway Improvements

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

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Exhibit 3.4-7

By assuming that Segment 3 of the SR4 Bypass will not be open prior to 2007 (i.e., the anticipated completion for the residential segment of the project), the Near-Term analysis may overstate project impacts. For instance, if the Bypass were to be completed early or the residential portion of the project would lag, actual traffic impacts would be significantly less than those presented in this document. However, this analysis leans on the side of caution and assumes that the Bypass will not be completed with build-out of the residential component.

The location of the proposed Near-term roadway and intersection improvements are shown on Exhibit 3.4-7. These improvements include roadways that the project will construct directly, and other improvements that will be funded by the project through payment of fees to various agencies such as the Bypass Authority, Contra Costa County, and the City of Brentwood.

Vineyards Project Near-Term Trip Generation

The trip generation rates shown in Table 3.4-4 were applied to the Near-Term Vineyards project development totals to estimate the total project trip generation. The Near-Term (2007) project trip generation is presented in Table 3.4-5. During the Near-Term scenario, the Vineyards project would generate a total of 460 AM peak hour trips (165 entering, 295 exiting) and 783 PM peak hour trips (444 entering and 339 exiting).

Trip Distribution and Assignment (Near-Term)

Trip distribution for the Near-term Vineyards project is based on a weighted distribution of existing and future traffic volumes. Future volumes were taken from the *East County Travel Demand Model*. For each scenario, approximately 60 percent of project trips were distributed to the north with an additional 20 percent distributed to the south and east, and the remaining 20 percent distributed to the west of the project. The difference between the Near-term and Long-term scenarios include the extent to which the distribution would change with the opening of the SR4 Bypass. The Near-term Vineyards project trip distribution percentages are graphically shown on Exhibit 3.4-8.

Trips generated by the proposed projects were assigned to the roadway system based on the approach and departure directions as described above. The Vineyards project AM and PM peak hour project trip assignments are shown on Exhibit 3.4-9 for the Near-Term scenario.

Near-Term Without Project Traffic

The Near-Term scenario traffic includes existing traffic counts and traffic from approved developments. Therefore, the Near-Term condition represents the likely traffic levels with the opening of first phase of the Vineyards at Marsh Creek Project within the next several years. This scenario also assumes that the Annexation Sites are not complete within the Near-Term Scenario.

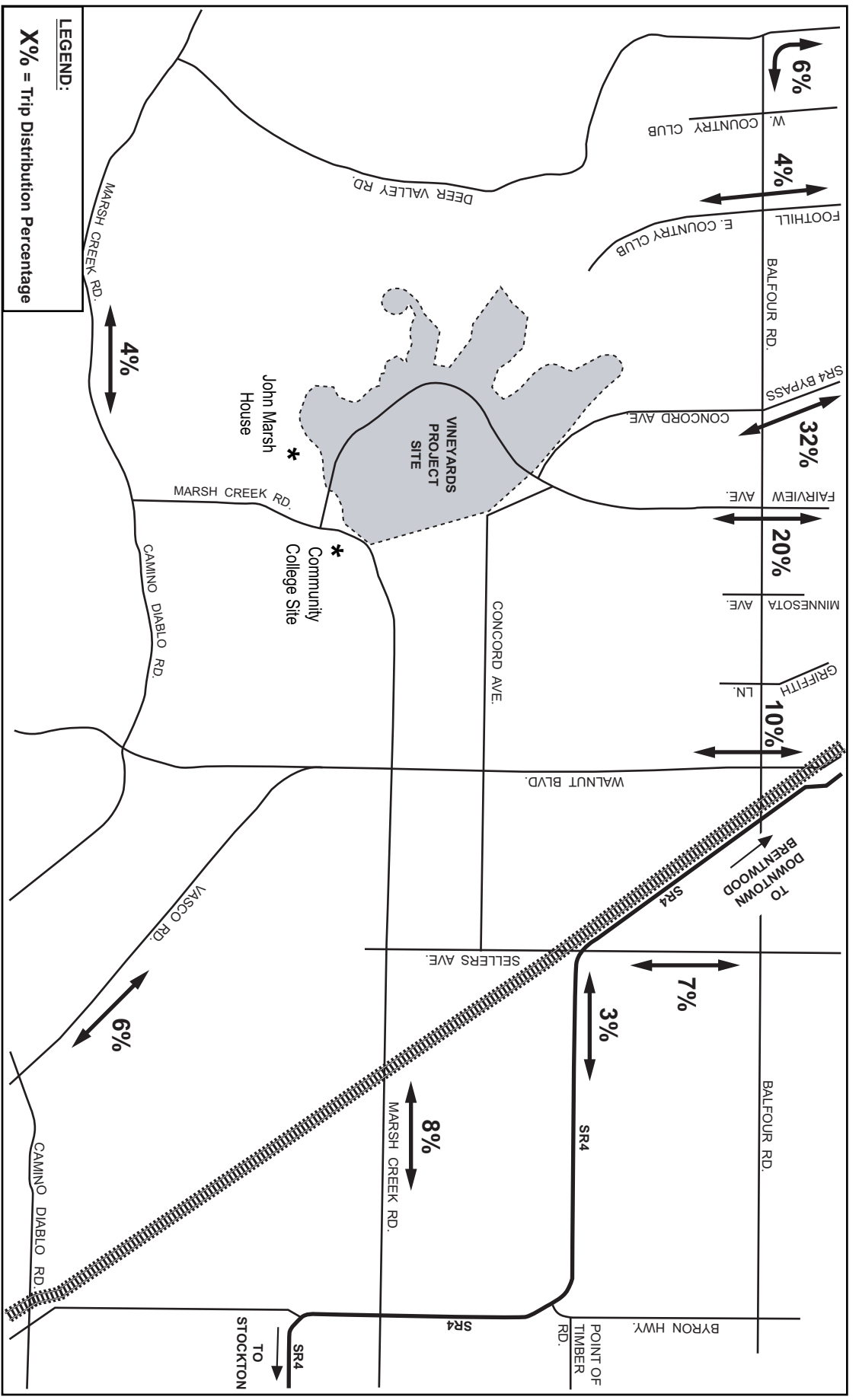
The latest City of Brentwood Project Status Report (October 2002) provides a list of approved developments. Trip generation is estimated for these developments based on generation rates and equations from ITE's Trip Generation Manual (6th Edition). Commercial developments are listed in Table 3.4-6 and residential developments are shown in Table 3.4-7. A map indicating the location of these developments, as well as detailed trip generation calculations are included in Appendix D.4

**TABLE 3.4-5
NEAR-TERM (2007) TRIP GENERATION**

	Amount	Units	ITE Code	AM			PM				
				Rate ¹	In	Out	Total	Rate ²	In	Out	Total
<i>Vineyards Project</i>											
Active Adult Living ^{1,2}	1,100	Dwelling units	N/A	0.37	131	232	363	0.44	310	174	484
Market Rate Single Family	150	Dwelling units	210	$T = 0.7(X) + 9.477$	20	59	79	$\text{Ln}(T) = 0.901 \text{Ln}(X) + 0.527$	68	39	107
Market Rate Multi-Family	--	Dwelling units	220	$T = 0.497(X) + 3.238$	0	0	0	$T = 0.541(X) + 18.743$	0	0	0
Senior Rental Housing (Active Adult Living) ³	--	Dwelling units	N/A	0.33	0	0	0	0.44	0	0	0
Institutional (Nursing Home)	--	Square feet	620	0.4	0	0	0	0.36	0	0	0
Institutional (Asst. Living) ⁴	--	Dwelling units	253	0.11	0	0	0	0.34	0	0	0
Office	3,000	Square feet	710	1.56	10	1	11	1.49	14	69	83
Retail	7,000	Square feet	820	1.03	4	3	7	$\text{Ln}(T) = 0.660 \text{Ln}(X) = 3.403$	52	57	109
Hotel w/ Convention Center	--	Rooms	310	$\text{Ln}(T) = 1.240 \text{Ln}(X) - 1.998$	0	0	0	$\text{Ln}(T) = 1.212 \text{Ln}(X) - 1.763$	0	0	0
Winery ⁵	--	Acres	N/A	N/A	0	0	0	Acres	0	0	0
<i>Annexation Sites</i>											
Community College	--	Students	540	0.14	0	0	0	0.17	0	0	0
John Marsh House (Park)	20	Rooms	412	0.01	0	0	0	0.06	0	0	0
Total Vineyards Trip Generation					165	295	460		444	339	783
Total Annexation Trip Generation					0	0	0		0	0	0
Total Trip Generation (Vineyards + Annexation)					165	295	460		444	339	783

Notes:

- 1 AM trip rate for Active Adult Living category assumed to be 43% of regular residential. Figure taken from Brentwood Active Adult Housing Traffic Fee Review (Fehr & Peers, December 1998).
- 2 PM trip rate for Active Adult Living category taken directly from Brentwood Active Adult Housing Traffic Fee Review (Fehr & Peers, December 1998).
- 3 Assumes same rate as active Adult Living Units.
- 4 Taken from study completed for Sunrise Assisted Living facilities in the Bay Area.
- 5 Based on June 15, 2003 memo from Fehr & Peers regarding trip generation for Wente Winery in Livermore, California.

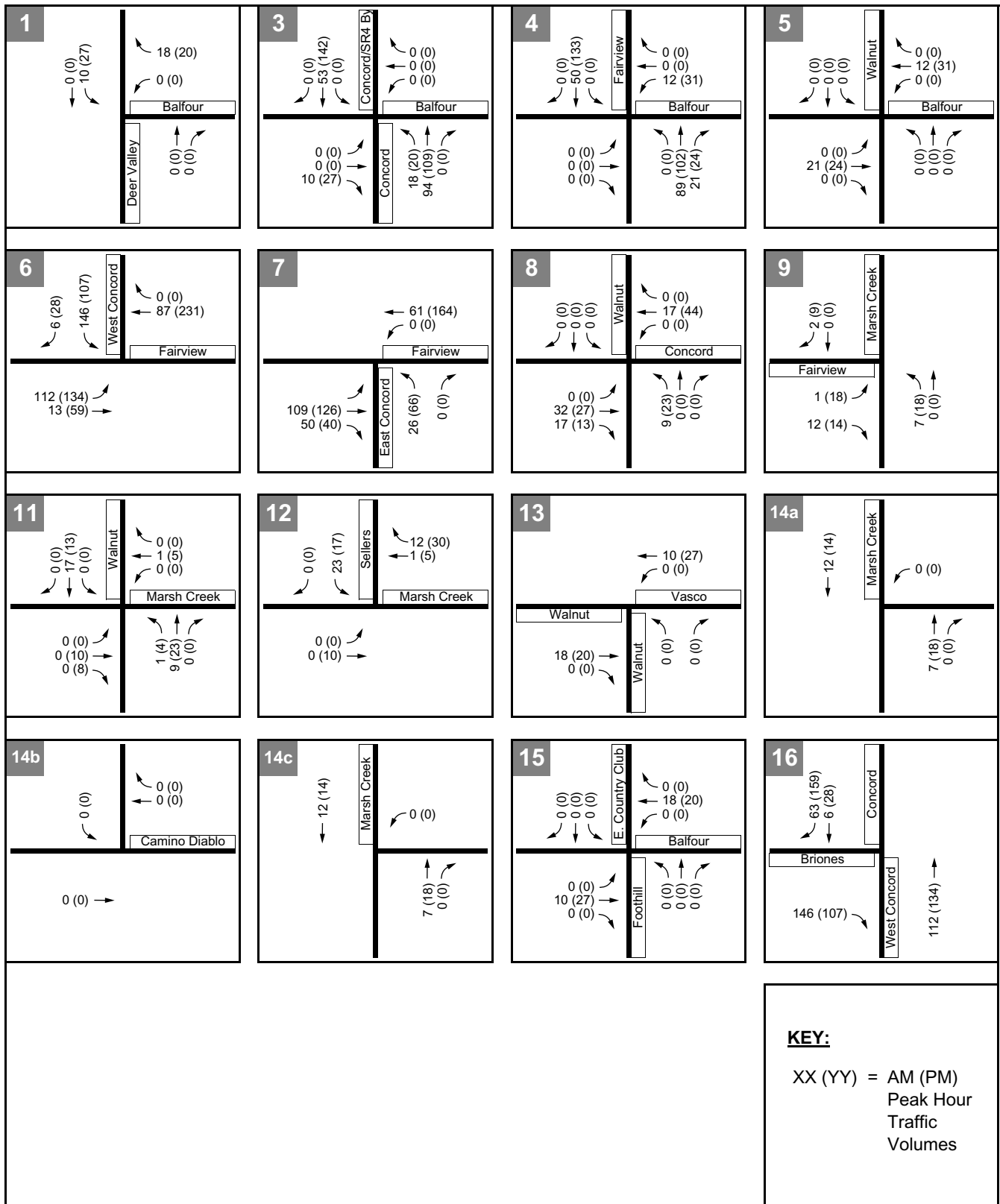


Not to scale

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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR
Near-Term Trip Distribution

Exhibit 3.4-8



Source: FEHR & PEERS Transportation Consultants (2003)

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Existing Plus Approved Project Conditions Project Trips



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Exhibit 3.4-9

**TABLE 3.4-6
NEAR-TERM COMMERCIAL DEVELOPMENT DESCRIPTIONS**

Map No.	Project Description	Location	Status
1.	102 ksf Supermarket (DR 01-34)	Southeast corner of Balfour Rd. and Fairview Ave.	Approved – No Construction
2.	109 ksf Hospital/Medical Offices (DR 03-01)	Southwest corner of Balfour Road and SR4 Bypass	Approved – No Construction
3.	12 ksf Business Park	Northwest corner of Balfour Road and SR4 Bypass	Proposed
4.	37 skf Police Station (DR 02-08)	Southeast corner of Central Blvd. and Walnut Blvd.	Approved – No Construction
5.	14 ksf Church (CUP 01-08)	Northeast corner of Fairview Ave. and Central Blvd.	Under Construction
6.	13 ksf Golf Course (CUP 00-02)	Balfour Rd. between W. Country Club Dr. and E. Country Club Dr.	Approved – No Construction
7.	50 ksf Commercial Development (DR 01-04)	Guthrie Ln. south of Balfour Rd.	Approved – No Construction
8.	3.5 ksf Brentwood Carwash (CUP 02-02)	Southeast corner of Balfour Rd. and Brentwood Blvd.	Approved – No Construction
9.	57 ksf General Office Building (DR 99-37)	Brentwood Blvd. south of Balfour Rd.	Approved – No Construction
10.	42 ksf Balfour Square Walgreens (DR 01-27)	Southeast corner of Balfour Rd. and Walnut Blvd.§	Under Construction
11.	13 ksf Commercial Development (CUP 01-17)	Walnut Blvd. south of Balfour Rd.	Under Construction
12.	9 ksf Golf Course (CUP 00-04)	Foothill Dr. south of Balfour Rd.	Under Construction
13.	20 ksf Commercial Development (DR 00-36)	Walnut Blvd. south of Balfour Rd.	Under Construction

Source: Fehr & Peers; *City of Brentwood Project Status Report*, October 2002, January 2003, and April 2003.

**TABLE 3.4-7
NEAR-TERM RESIDENTIAL DEVELOPMENT DESCRIPTIONS**

Map No.	Project Description	Location	Status
14.	244 Active Adult Residences (TSM 8089 A)	Concord Ave. east of Fairview Ave.	Approved – No Construction
15.	80 Active Adult Residences (CUP 01-26)	North of Oak Street, west of Garin Parkway	Approved – No Construction
16.	47 Single Family Homes (TSM 8661)	East of Fairview Ave., north of Central Blvd.	Approved – No Construction
17.	252 Single Family Homes (TSM 8424)	Garin Pkwy. north of Chestnut St.	Approved – No Construction
18.	113 Single Family Homes (TSM 8413)	Garin Pkwy. north of Oak St.	Approved – No Construction

**TABLE 3.4-7
NEAR-TERM RESIDENTIAL DEVELOPMENT DESCRIPTIONS**

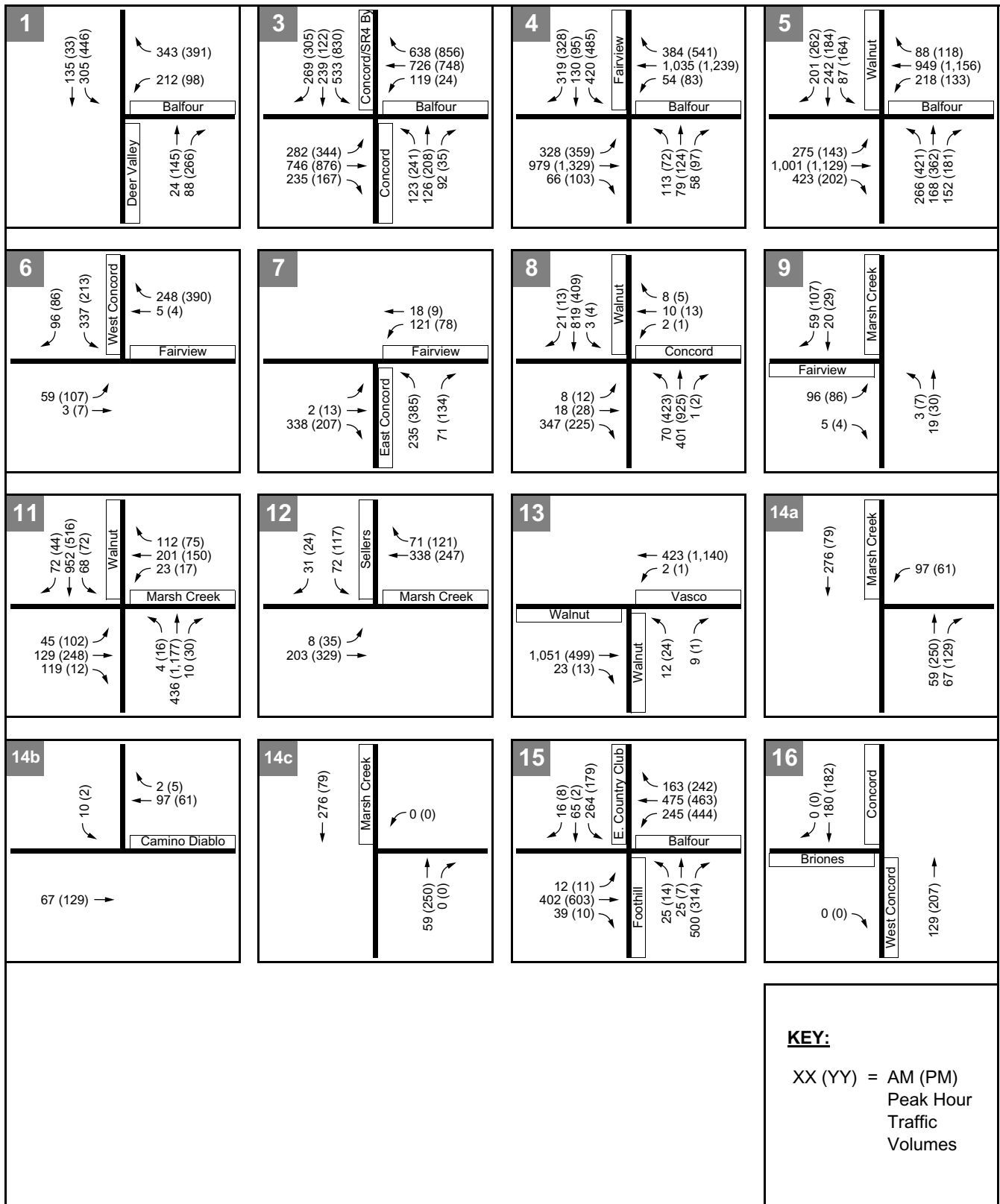
Map No.	Project Description	Location	Status
19.	15 Single Family Homes (TSM 7904)	North of Balfour between Fairview Ave. and Minnesota Ave.	Approval Expired
20.	14 Single Family Homes (TSM 8180)	Guthrie Ln. south of Balfour Rd.	Approved – No Construction
21.	60 Single Family Homes (TSM 8352)	South of Balfour Rd. between Concord Ave. and John Muir Pkwy.	Approved – No Construction
22.	57 Single Family Homes (TSM 8200)	Walnut Blvd. South of Balfour Rd.	Under Construction
23.	43 Single Family Homes (TSM 7736)	South of Balfour Rd., east of Walnut Blvd.	Under Construction
24.	156 Single Family Homes (TSM 8199)	Continente Rd. at Griffith Lane	Under Construction
25.	20 Single Family Homes (TSM 6492)	South of Balfour Rd, east of Fairview Ave.	Under Construction
26.	1,027 Single Family Homes (TSM 7690)	South of Balfour Rd., west of East Foothill Blvd.	Under Construction
27.	20 Single Family Homes (TSM 6848 A)	Central Blvd. west of Fairview Ave.	Under Construction
28.	11 Single Family Homes (TSM 8066)	South of Balfour Rd. between Griffith Ln. and Minnesota Ave.	Under Construction
29.	115 Single Family Homes (TSM 8221)	North of Balfour Rd. near Chestnut St.	Under Construction
30.	225 Single Family Homes (TSM 7882)	Southwest of San Jose Ave.	Under Construction
31.	144 Active Adult Residences (TSM 7939)	Southeast corner of Balfour Rd. and Concord Ave.	Under Construction
32.	407 Active Adult Residences (TSM 7940)	Fairview Ave. between Balfour Rd. and Concord Ave.	Under Construction
33.	607 Single Family Homes (TSM 7705)	Country Club Dr. north of Balfour Rd.	Under Construction
34.	3 Single Family Homes (TSM 8371)	South of Balfour Rd. between Griffith Ln. and Minnesota Ave.	Under Construction

Source: Fehr & Peers; *City of Brentwood Project Status Report*, October 2002, January 2003, and April 2003.

Near-Term With Project Traffic

The Near-Term peak hour Vineyards project volumes, as determined previously and shown on Exhibit 3.4-10, were added to the Near-Term Without Project background traffic volumes to determine future traffic volumes with the proposed project. These peak hour traffic volumes are shown on Exhibit 3.4-11. The lane configurations for this Near-Term Without Project scenario are shown on Exhibit 3.4-12. The intersection of Concord Avenue and Fairview Avenue is assumed to operate as a T-intersection due to the low incidence of access for this intersection; access would, however, be provided to the PG&E facility to the south.

As shown in Table 3.4-8, there are three intersections impacted by the project. Appendix D.5 provides the LOS calculation worksheets for the Without Project condition; Appendix D.6 contains the LOS calculation worksheets for the With Project condition.



Source: FEHR & PEERS Transportation Consultants (2003)

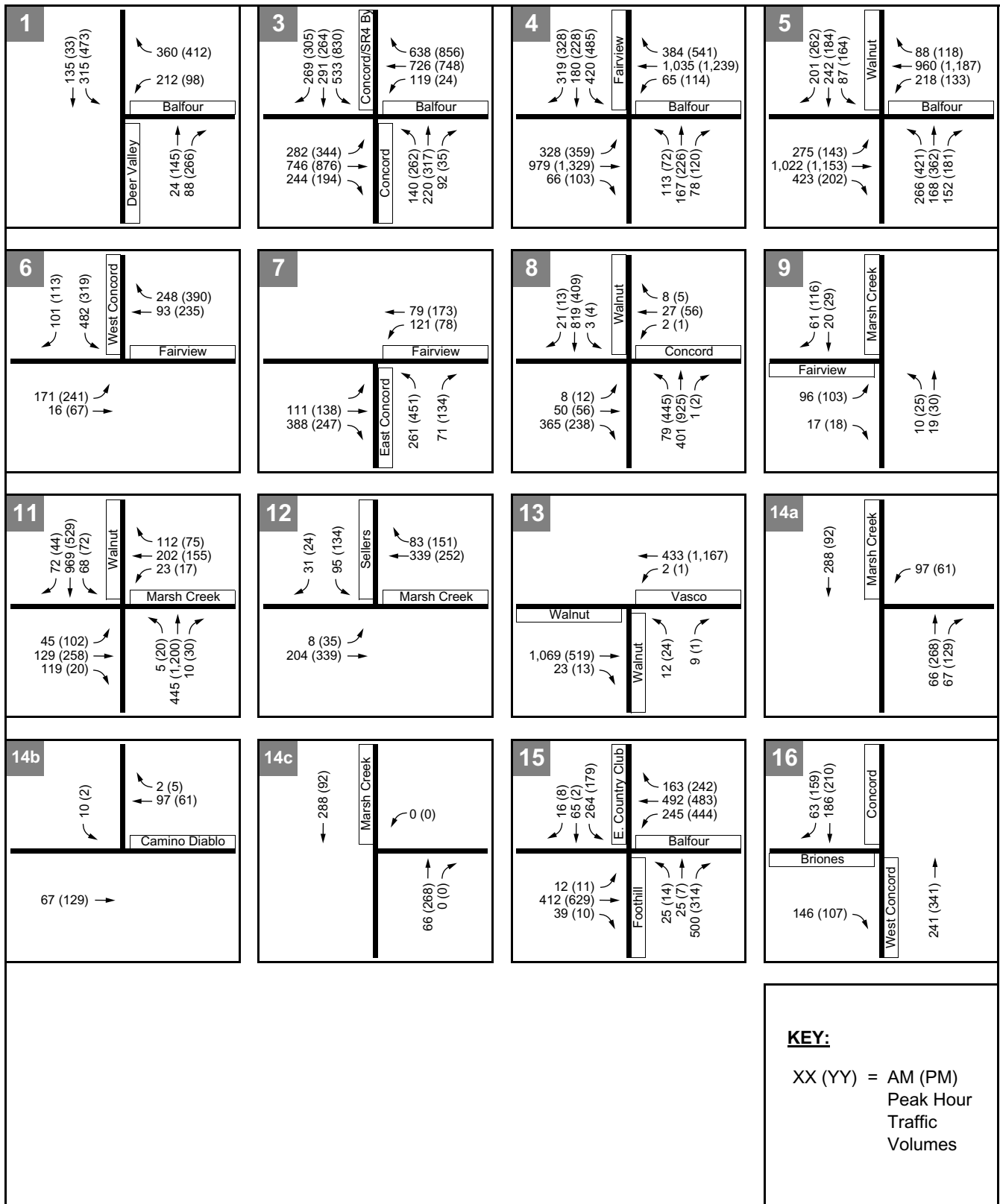
THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Existing Plus Approved Conditions Traffic Volumes



10/20/03 JN 35-100230

Exhibit 3.4-10



Source: FEHR & PEERS Transportation Consultants (2003)

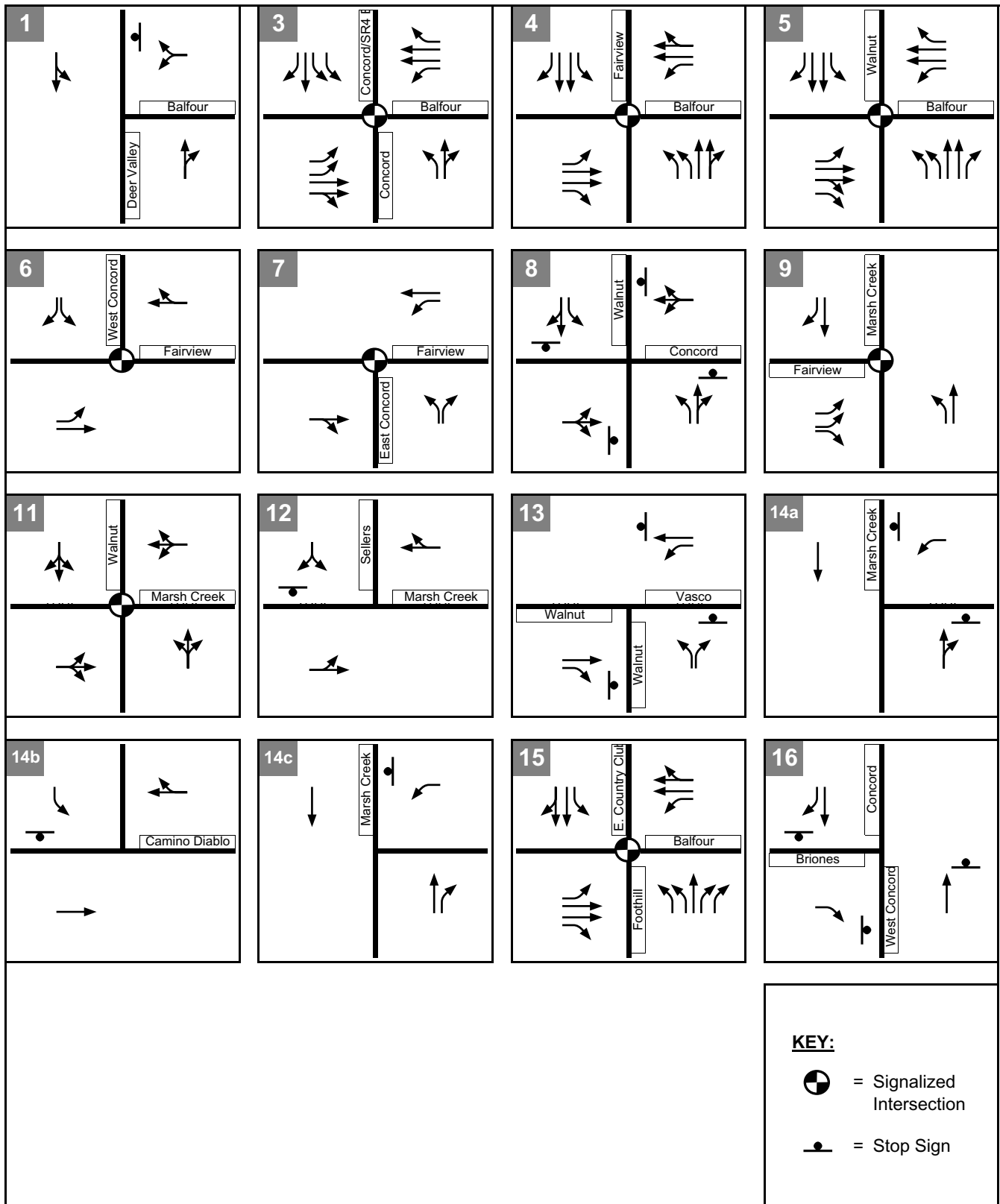
THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Existing Plus Approved Project Conditions Traffic Volumes



10/20/03 JN 35-100230

Exhibit 3.4-11



Source: FEHR & PEERS Transportation Consultants (2003)

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Existing Plus Approved Conditions Lane Configurations and Traffic Volumes



10/20/03 JN 35-100230

Exhibit 3.4-12

**TABLE 3.4-8
NEAR-TERM WITHOUT AND WITH PROJECT
PEAK HOUR INTERSECTION LEVEL OF SERVICE**

Intersection	Control	Peak Hour	Without Project		With Project	
			V/C Ratio ² or Delay ³	LOS	V/C Ratio ² or Delay ³	LOS
Balfour Road/Deer Valley Road	Signal	AM	0.37	A	0.37	A
		PM	0.56	A	0.57	A
Balfour Road/John Muir Parkway	Signal	AM	0.41	A	0.41	A
		PM	0.47	A	0.48	A
Balfour Road/SR4 Bypass (Concord Ave)	Signal	AM	0.84	D	0.90	E
		PM	0.99	E	1.06	F
Balfour Road/Fairview Avenue	Signal	AM	0.84	D	0.87	D
		PM	1.02	F	1.06	F
Balfour Road/Walnut Boulevard	Signal	AM	0.62	B	0.62	A
		PM	0.65	B	0.66	B
West Concord Avenue/Fairview Avenue	Signal	AM	0.38	A	0.58	A
		PM	0.42	A	0.69	B
Concord Avenue/Fairview Avenue	Signal	AM	0.40	A	0.51	A
		PM	0.40	A	0.53	A
Walnut Boulevard/Concord Avenue	SSS	AM	>50	F	>50	F
		PM	>50	F	>50	F
Fairview Avenue/Marsh Creek Road	Signal	AM	0.04	A	0.05	A
		PM	0.07	A	0.08	A
Marsh Creek Road/Walnut Boulevard	Signal	AM	1.00	E	1.01	F
		PM	1.10	F	1.13	F
Marsh Creek Road/Sellers Avenue	SSS	AM	13.7	B	14.5	B
		PM	17.4	C	19.2	C
Vasco Road/Walnut Boulevard	SSS	AM	26.8	D	27.7	D
		PM	44.7	E	48.1	E
Camino Diablo Road/Marsh Creek Road	SSS	AM	11.7	B	11.9	B
		PM	11.5	B	11.8	B
Concord Avenue/Project Driveway	SSS	AM	N/A	N/A	10.3	B
		PM	N/A	N/A	10.3	B
Balfour Road/Foothill	Signal	AM	0.57	A	0.58	A
		PM	0.53	A	0.53	A

Intersections operating at deficient LOS based on significance criteria are shown in **bold and italics**.

¹ Signal = Signalized Intersection, SSS = Side-street stop-controlled intersection

² Volume-to capacity ratio determined for all signalized intersections using the CCTA LOS methodology.

³ For side-street stop-controlled intersections, delay for worst movement (in seconds per vehicle) calculated using the 2000 *Highway Capacity Manual* methodology.

Source: Fehr & Peers, 2002.

In many cases, the intersections operate at a deficient service level (i.e., LOS E or LOS F) prior to the addition of project traffic. These impacts are discussed in further detail below. Mitigation measures for Impacts 3.4-A, 3.4-B, and 3.4-C are illustrated on Exhibit 3.4-13.

IMPACT 3.4-A. Balfour Road/SR4 Bypass/Concord Avenue Near-Term – Vineyards Project: The Balfour Road/SR4 Bypass/Concord Avenue intersection will operate at LOS E (V/C ratio of 0.90) during the morning (AM) peak hour and LOS F (V/C ratio of 1.06) during the evening (PM) peak hour. Prior to the introduction of project traffic, the intersection would operate at LOS D (V/C ratio of 0.84) during the AM period and LOS E (V/C ratio of 0.99) during the PM period. Given that the project causes the intersection to degrade from LOS D to LOS E during the AM and LOS E to LOS F during the PM, the addition of project traffic generates a significant impact. (Significant Impact).

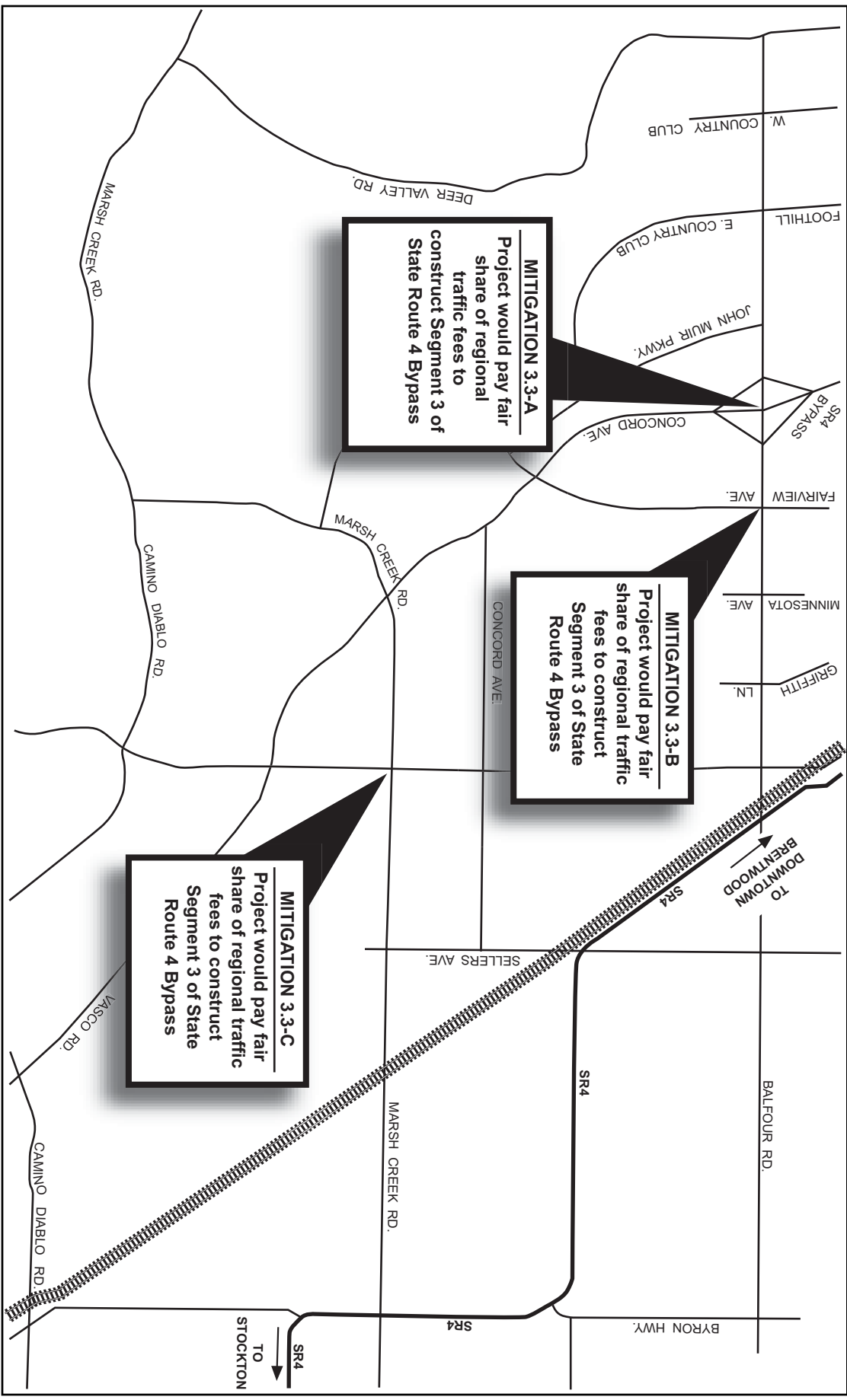
This intersection operates at a deficient level for several reasons including: (1) the intersection has only one north-south lane, and (2) heavy traffic volumes on Balfour Road cannot be accommodated with the existing roadway geometry. This intersection will be widened with the construction of Segment 3 of the SR4 Bypass.

The analysis for mitigation measure 3.4-A assumes there is no redistribution of traffic following the completion of SR4 Bypass, Segment 3. The recommended roadway geometries reflect the proposed intersection configuration listed in a technical memorandum entitled Year 2025 and Year 2015 Traffic Forecasts and Operations State Route 4 Bypass Segment 3 (Fehr & Peers, January 9, 2003). With this improvement, the following lanes would be added:

- ❖ Southbound through lane
- ❖ Eastbound right turn lane
- ❖ Northbound through lane
- ❖ Northbound right turn lane

With the additional lanes identified here, the Balfour Road/SR4 Bypass/Concord Avenue Near-Term intersection would operate at LOS A (V/C ratio of 0.56) during the AM period and LOS C (V/C ratio of 0.73) during the PM period. This mitigation will be constructed by the SR4 Bypass authority, which is currently designing Segment 3 of the SR4 Bypass. This mitigation should occur with build-out of the residential component and prior to occupancy of the College and Village Center.

Mitigation 3.4-A. Balfour Road/SR4 Bypass/Concord Avenue Near-Term – Vineyards Project: The primary mitigation would be the construction of the SR4 Bypass, which would relieve several of the major movements contributing to the poor level of service. The project would satisfy its fair share traffic fee obligation collected by the East Contra Costa County Regional Fee and Financing Authority (ECCRFFA) and the East County Transportation Improvement Authority (ECTIA) for construction of Segment 3 of the SR4 Bypass. With construction of the additional lanes near the Balfour Road/SR4 Bypass/Concord Avenue intersection by the financing authority, the impact would be less than significant. (Less Than Significant).



Source: FEHR & PEERS Transportation Consultants (2003)



Not to scale

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THE VINEYARDS AT MARSH CREEK AND ANNEXXATION SITES EIR
Near-Term Project Mitigations

Exhibit 3.4-13

IMPACT 3.4-B. Balfour Road/Fairview Avenue Near-Term – Vineyards Project: The Balfour Road/Fairview Avenue intersection operates at LOS D (V/C ratio of 0.87) during the AM period and LOS F (V/C ratio of 1.06) during the PM period. Prior to the introduction of project traffic, this intersection operates at LOS D (V/C ratio of 0.84) during the AM period and LOS F (V/C ratio of 1.02) during the PM period. Therefore, this intersection operates at LOS F during the PM period even without project traffic. Contribution of project traffic to this intersection is a significant impact. (Significant Impact).

The main movements contributing to this degraded operation include:

- ❖ Southbound left-turn volumes of 420 during the AM period and 485 during the PM period
- ❖ Northbound left-turn volume is 328 during the AM period and 359 during the PM period
- ❖ Westbound right-turn volume is 384 during the AM period and 541 during the PM period

This intersection will operate at a deficient level in the PM period prior to the addition of any project traffic. The mitigation measure that would alleviate the deficient LOS in the PM period would be the construction of the SR4 Bypass. For instance, many of the vehicles turning south from Fairview Avenue onto Balfour Road (southbound left-turn) would relocate onto the SR4 Bypass. Additionally, many of the vehicles turning from Balfour Road to Fairview Avenue (eastbound left-turn) would relocate to the SR4 Bypass.

Although not required by the traffic study, adding an eastbound right-turn lane on Balfour Road onto Fairview Avenue would provide additional mitigation. The project would pay for the cost of this improvement through development fees.

Mitigation 3.4-B. Balfour Road/Fairview Avenue Near Term – Vineyards Project: The primary mitigation would be the construction of the SR4 Bypass, which would relieve several of the major movements contributing to the poor level of service. The project would satisfy its fair share traffic fee obligation collected by the East Contra Costa County Regional Fee and Financing Authority (ECCRFFA) and the East County Transportation Improvement Authority (ECTIA) for construction of Segment 3 of the SR4 Bypass. With construction of the SR4 Bypass, the impact to the Balfour Road/Fairview Avenue intersection would be less than significant.

Adding an eastbound right-turn lane would provide additional mitigation. The project would pay for the cost of this improvement through the fulfillment of the project's development fee obligations.

These mitigations would be constructed by the SR4 Bypass Authority and the City of Brentwood (Fairview Avenue Intersection) and would occur with build-out of the residential component and prior to occupancy of the community college and Village Center.

(Less Than Significant Impact).

IMPACT 3.4-C. Marsh Creek Road/Walnut Boulevard Near-Term – Vineyards Project: During the AM peak hour, the intersection of Marsh Creek Road/Walnut Boulevard operates at LOS E (V/C ratio of 1.00) prior to the introduction of project traffic and LOS F (V/C ratio of 1.01) after the introduction of project traffic. During the PM peak hour, this intersection operates at LOS F before (V/C ratio of 1.10) and after (V/C ratio of 1.13) the introduction of project traffic. (Significant Impact).

The main factor contributing to poor operations of this intersection is heavy north-south traffic. As recorded in the existing counts, approximately 1,000 vehicles travel northbound through this intersection during the PM peak hour. With the additional approved projects, this volume is projected to increase to 1,200 during the PM peak hour. For the AM peak period, traffic counts, 800 vehicles were counted traveling southbound through this intersection. These traffic volumes represent East County residents traveling to employment areas in the Tri-Valley region through roadways such as Vasco Road and Byron Highway.

The SR4 Bypass Authority will be adding a paved shoulder to Marsh Creek Road on both sides of the roadway. This improvement is funded and will be constructed concurrently with Segment 3 of the SR4 Bypass. However, this improvement only includes partial funding for intersection improvements to Walnut Boulevard/Marsh Creek Road. If this intersection improvement is combined with the Marsh Creek Road improvement, significant cost savings will likely accrue.

Mitigation 3.4-C: Marsh Creek Road/Walnut Boulevard Near-Term – Vineyards Project: The mitigation of the project impact will require construction of Segment 3 of the SR4 Bypass and intersection-specific improvements. The primary mitigation would be the construction of the SR4 Bypass (Segment 3). The project would contribute its fair share of the cost of SR4 Bypass through the satisfaction of its regional traffic fee obligation collected by the ECCRFFA and ECTIA.

The intersection level improvements would include the addition of exclusive left- and right-turn lanes on all approaches. The project would contribute the cost of these improvements to the City of Brentwood.

The SR4 Bypass would be constructed by the SR4 Bypass Authority, which is currently designing Segment 3 of the SR4 Bypass. The intersection improvements at Marsh Creek Road/Walnut Boulevard will be built by the City of Brentwood. These mitigations should occur with build-out of the residential component and prior to occupancy of the community college and Village Center. With construction of the SR4 Bypass and the intersection improvements, the impact to the Marsh Creek Road/Walnut Boulevard intersection would be less than significant.

(Less Than Significant Impact).

IMPACT 3.4-D. Walnut Boulevard/Concord Avenue Near-Term – Vineyards Project: For the AM and PM peak hours, the unsignalized intersection of Walnut Boulevard/ Concord Avenue will operate at LOS F prior to the introduction of project traffic. With additional traffic from the project, this intersection will continue to operate at LOS F. Without a traffic signal, the intersection will operate at a deficient level. The project also meets peak hour volume traffic signal warrants as specified in the Manual of Uniform Traffic Control Devices (MUTCD). (Significant Impact).

Intersection improvements (northbound and southbound left-turn lanes) were installed at this intersection recently by Contra Costa County. However, a traffic signal was not installed and there are no plans to install a signal according to information received from the City of Brentwood Traffic Engineer.

Mitigation 3.4-D. Walnut Boulevard/Concord Avenue Near Term – Vineyards Project: Mitigation for this impact would be the installation of a traffic signal at this intersection. The project would contribute their fair share of this traffic signal through the fulfillment of the project’s development fee obligation. The City of Brentwood would install this traffic signal. With the installation of the traffic signal the impact to the Walnut Boulevard/Concord Avenue intersection would be less than significant. (Less than Significant Impact).

LONG-TERM (YEAR 2025) TRAFFIC IMPACTS

This section presents and evaluates future (Year 2025) traffic conditions, both without and with the project. The analysis of future traffic conditions considers build-out of the City of Brentwood General Plan and expected development within the surrounding jurisdictions.

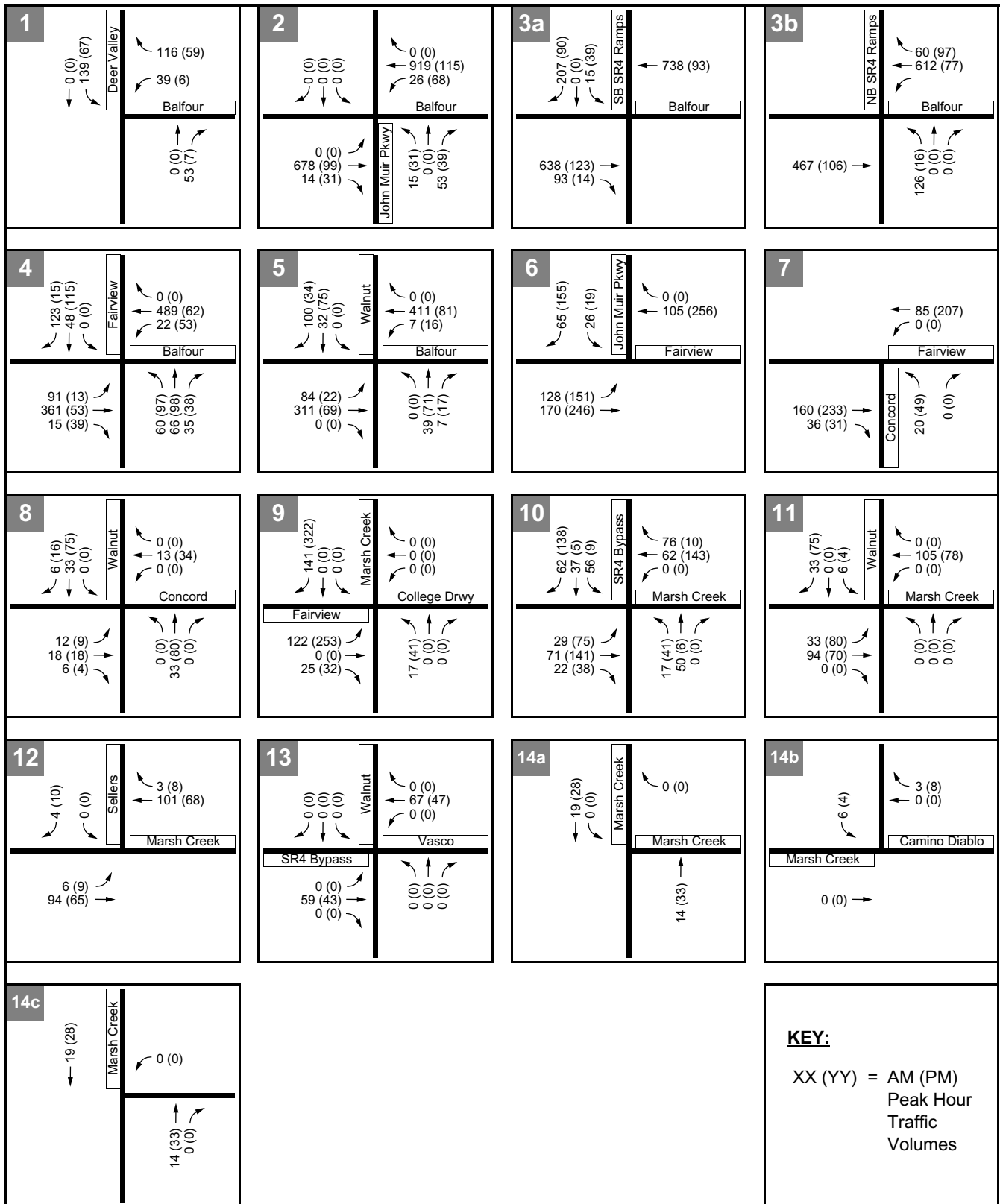
Trip Generation for Vineyards Project and Annexation Sites

The trip generation rates shown in Table 3.4-4 were applied to the development totals to estimate the total project trip generation. The Long-term (2025) project trip generation is presented in Table 3.4-6.

During the Long-Term Scenario, the Vineyards project would generate 850 AM peak hour trips and 1,599 PM peak hour trips. The Annexation Sites would generate 700 AM peak hour trips and 851 PM peak hour trips, as shown on Exhibits 3.4-14A, Exhibits 3.4-14B, Exhibits 3.4-15A and 3.4-15B.

Long-Term Trip Distribution and Assignment

Trip distribution for the Near-term Vineyards project is based on a weighted distribution of existing and future traffic volumes. Future volumes were taken from the *East County Travel Demand Model*. For each scenario, approximately 60 percent of project trips were distributed to the north with an additional 20 percent distributed to the south and east, and the remaining 20 percent distributed to the west of the project. The difference between the Near-term and Long-term scenarios include the extent to which the distribution would change with the opening of the SR4 Bypass. The Near-term Vineyards project trip distribution percentages are graphically shown on Exhibit 3.4-16.



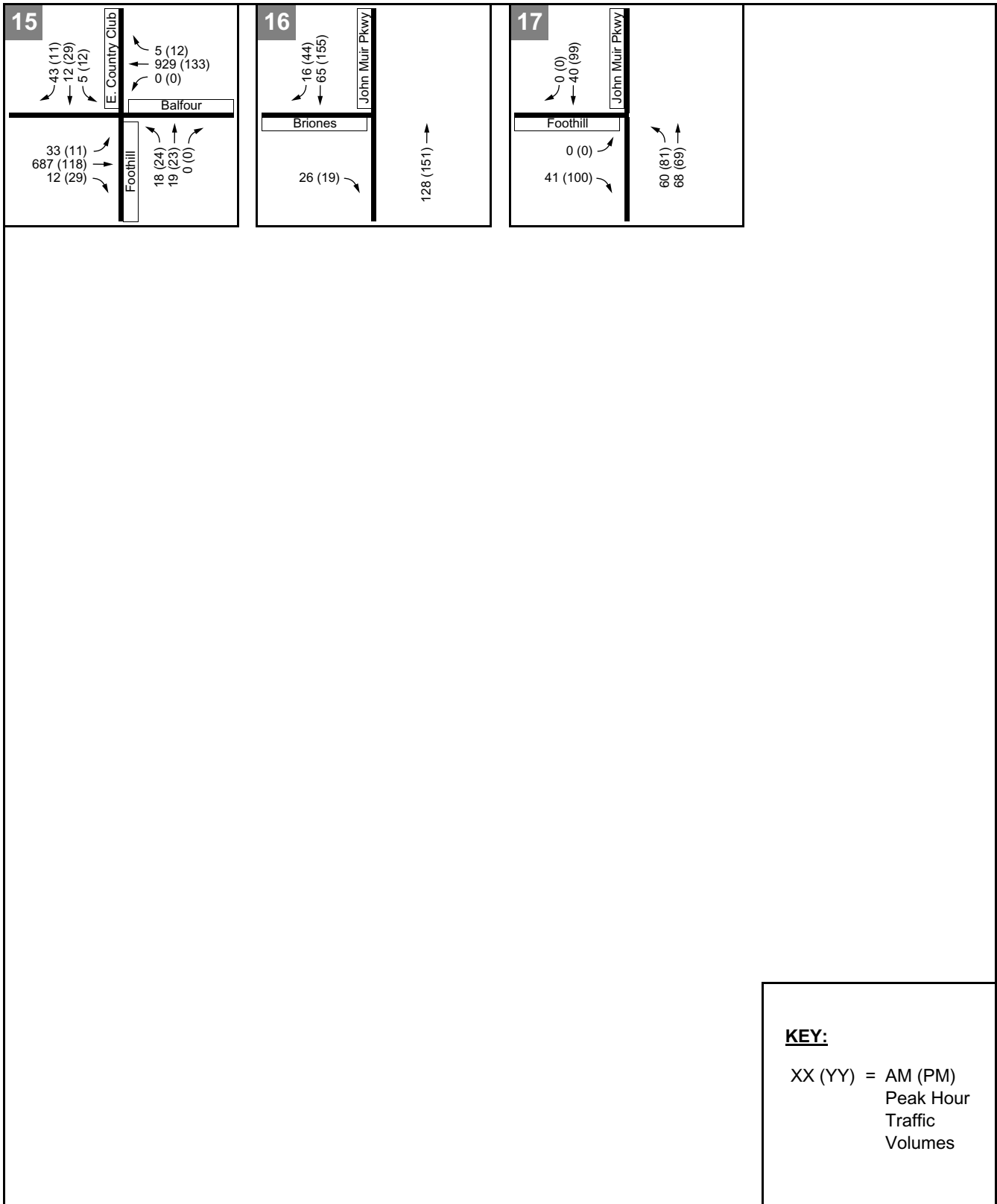
Source: FEHR & PEERS Transportation Consultants (2003)



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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR
Vineyards (2025 Long-Term) Project Trips

Exhibit 3.4-14A



KEY:
 XX (YY) = AM (PM)
 Peak Hour
 Traffic
 Volumes

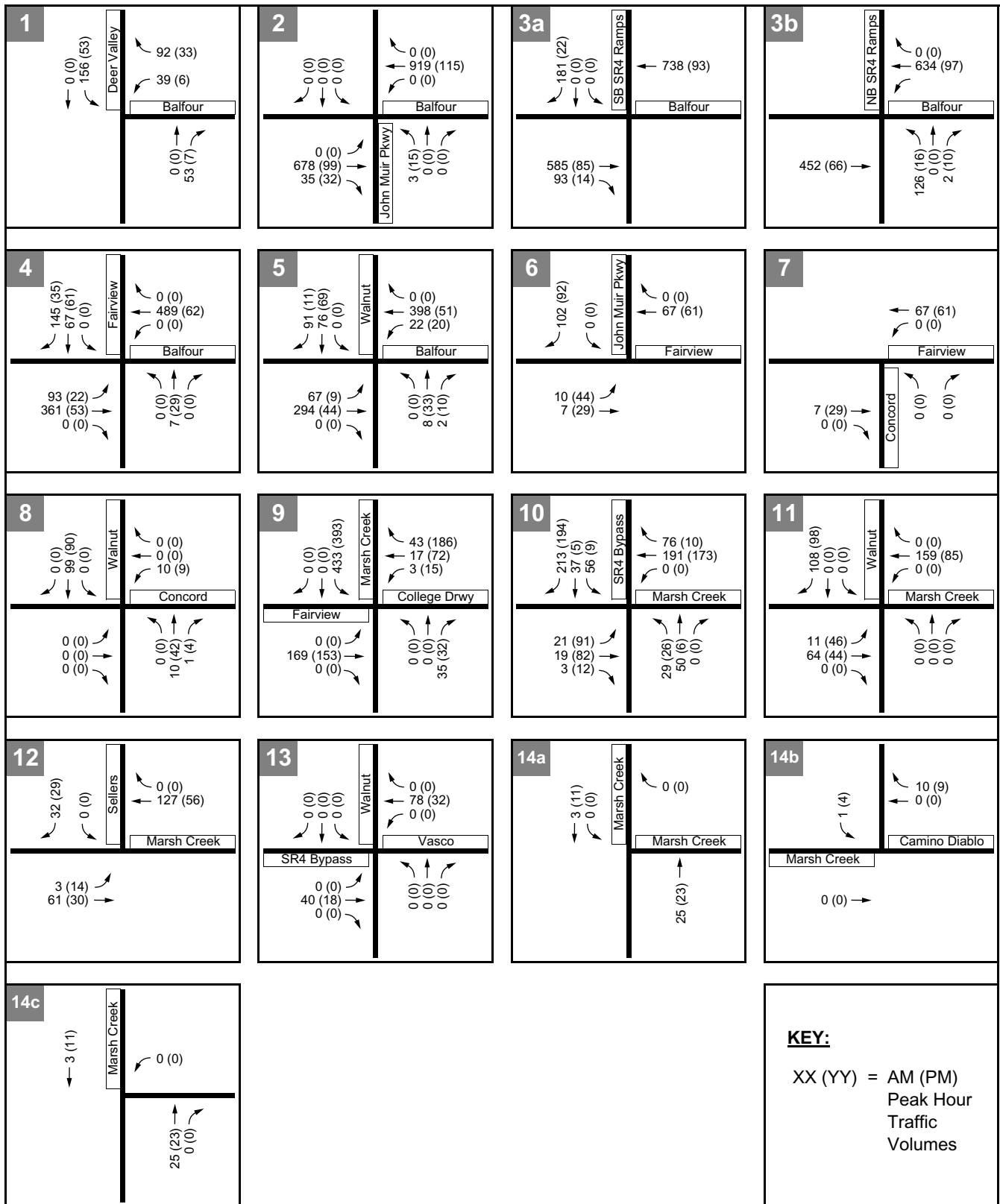
Source: FEHR & PEERS Transportation Consultants (2003)



10/20/03 JN 35-100230

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR
Vineyards (2025 Long-Term) Project Trips

Exhibit 3.4-14B



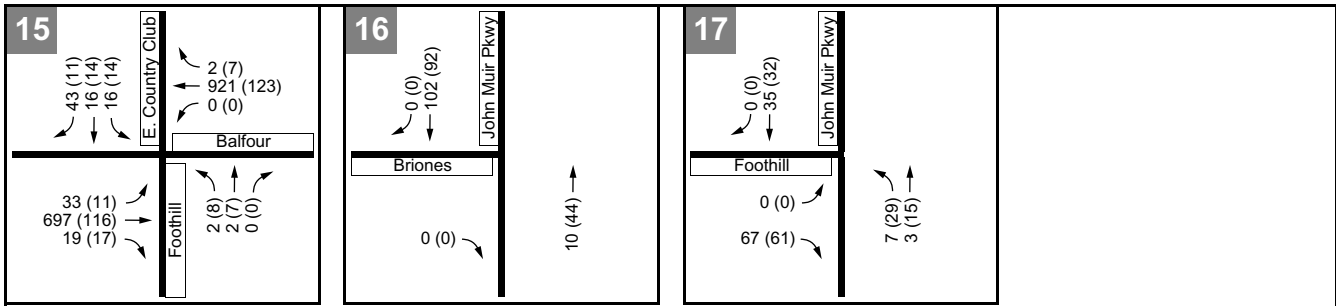
Source: FEHR & PEERS Transportation Consultants (2003)



THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR
Annexation Sites (2025 Long-Term) Project Trips

10/20/03 JN 35-100230

Exhibit 3.4-15A



KEY:

XX (YY) = AM (PM)
Peak Hour
Traffic
Volumes

Source: FEHR & PEERS Transportation Consultants (2003)

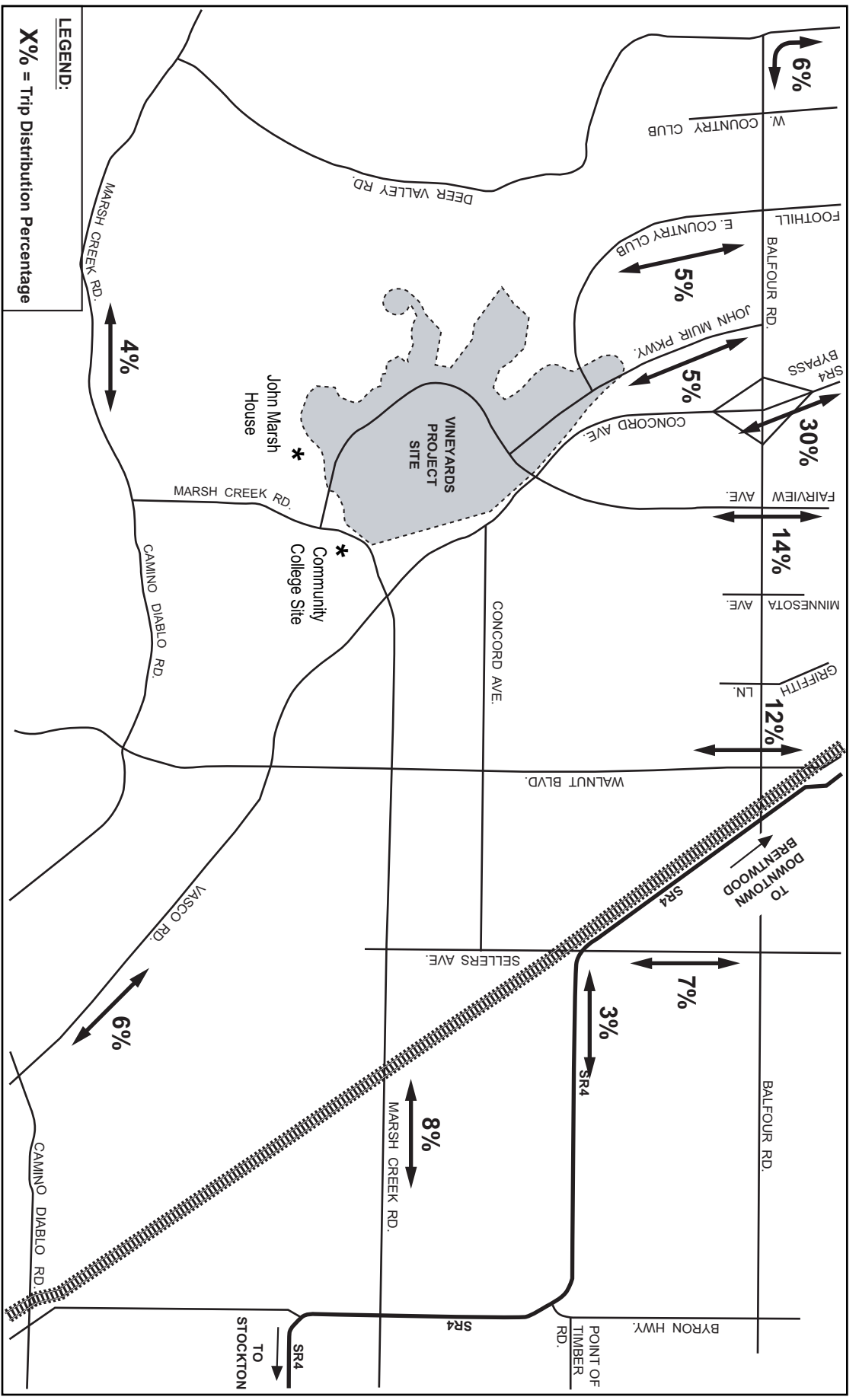


THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Annexation Sites (2025 Long-Term) Project Trips

10/20/03 JN 35-100230

Exhibit 3.4-15B



Source: FEHR & PEERS Transportation Consultants (2003)



Not to scale

10/20/03 JN 35-100230

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR
Long-Term Trip Distribution

Exhibit 3.4-16

Trips generated by the proposed projects were assigned to the roadway system based on the approach and departure directions as described above.

Based on the mixed-use of the Vineyards project site, an internalization factor of five percent (5%) was applied to the number of trips generated by the Project. This internalization factor represents trips that could occur from the residences to the Town Center for shopping or trips to the Winery. This internalization factor was applied only to the Long-Term 2025 (Long-Term) scenario since the Near-Term scenario has limited commercial and office development.

No reduction in trip generation, however, was taken for pass-by trips relating to the commercial component. A pass-by reduction was not taken as the precise breakdown of the commercial component could change over time and will likely not include uses with a high pass-by factor.

Long-Term Development Assumed for Vineyards and Annexation Sites

Following completion of the first phase, the other major elements of the Vineyards project and Annexation sites are assumed - for traffic analysis purposes - to be completed (although there are no development plans for the Annexation Sites (Table 3.4-9). This analysis assumes these developments are not open until final completion of Segment 3 of the SR4 Bypass.

The additional Long-Term development assumed for Vineyards and Annexation Sites include:

Vineyards Project

- ❖ Active Adult Multi-Family Housing (150 units)
- ❖ Market Rate Multi-Family Housing (200 units)
- ❖ Congregate care facility (nursing home) (50,000 square feet)
- ❖ Assisted living facility (150 units or 150,000 square feet)
- ❖ 27,000 square feet of additional office space
- ❖ 68,000 square feet of additional retail space
- ❖ Hotel with Convention Center
- ❖ Winery

Annexation Sites

- ❖ Community College (5,000 student enrollment)
- ❖ John Marsh Home Site

**TABLE 3.4-9
LONG-TERM (2025) TRIP GENERATION**

Amount	Units	ITE Code	AM			PM				
			Rate ¹	In	Out	Total	Rate ²	In	Out	Total
<i>Vineyards at Marsh Creek Project</i>										
Active Adult Living ^{1,2}	1,100	Dwelling units	N/A	131	232	363	0.44	310	174	484
Market Rate Single Family	150	Dwelling units	210	20	59	79	$\text{Ln}(T) = 0.901 \text{Ln}(X) + 0.527$	68	39	107
Market Rate Multi-Family	200	Dwelling units	220	16	87	103	$T = 0.541(X) + 18.743$	85	42	127
Senior Rental Housing (Active Adult Living) ³	150	Dwelling units	N/A	18	32	50	0.44	42	24	66
Institutional (Nursing Home)	50,000	Square feet	620	13	7	20	0.36	20	11	31
Institutional (Asst. Living) ⁴	150	Dwelling units	253	9	7	17	0.34	25	25	50
Office	30,000	Square feet	710	62	9	71	1.49	19	94	113
Retail	75,000	Square feet	820	47	30	77	$\text{Ln}(T) = 0.660 \text{Ln}(X) + 3.403$	249	279	519
Hotel w/ Convention Center	150	Rooms	310	41	27	68	$\text{Ln}(T) = 1.212 \text{Ln}(X) - 1.763$	39	35	74
Winery ⁵	19	Acres	N/A	4	5	9	Acres	4	24	28
<i>Annexation Project</i>										
Community College	5,000	Students	540	637	63	700	0.17	578	272	850
John Marsh House (Park)	20	Acres	412	0	0	0	0.06	0	1	1
Total Vineyards Trip Generation				361	495	857		861	738	1,599
Reduction for Internalized Trips in Vineyards (5%)				343	471	814		818	701	1,519
Total Annexation Sites Trip Generation				637	63	700		578	273	851
Total Trip Generation (Vineyards + Annexation)				980	534	1,514		1,397	974	2,370

Notes:
 1 AM trip rate for Active Adult Living category assumed to be 43% of regular residential. Figure taken from Brentwood Active Adult Housing Traffic Fee Review (Fehr & Peers, December 1998).
 2 PM trip rate for Active Adult Living category taken directly from Brentwood Active Adult Housing Traffic Fee Review (Fehr & Peers, December 1998).
 3 Assumes same rate as active Adult Living Units.
 4 Taken from study completed for Sunrise Assisted Living facilities in the Bay Area.
 5 Based on June 15, 2003 memo from Fehr & Peers regarding trip generation for Wente Winery in Livermore, California.

Roadway Improvements

Some major improvements in the study area exist or are planned to be completed, including:

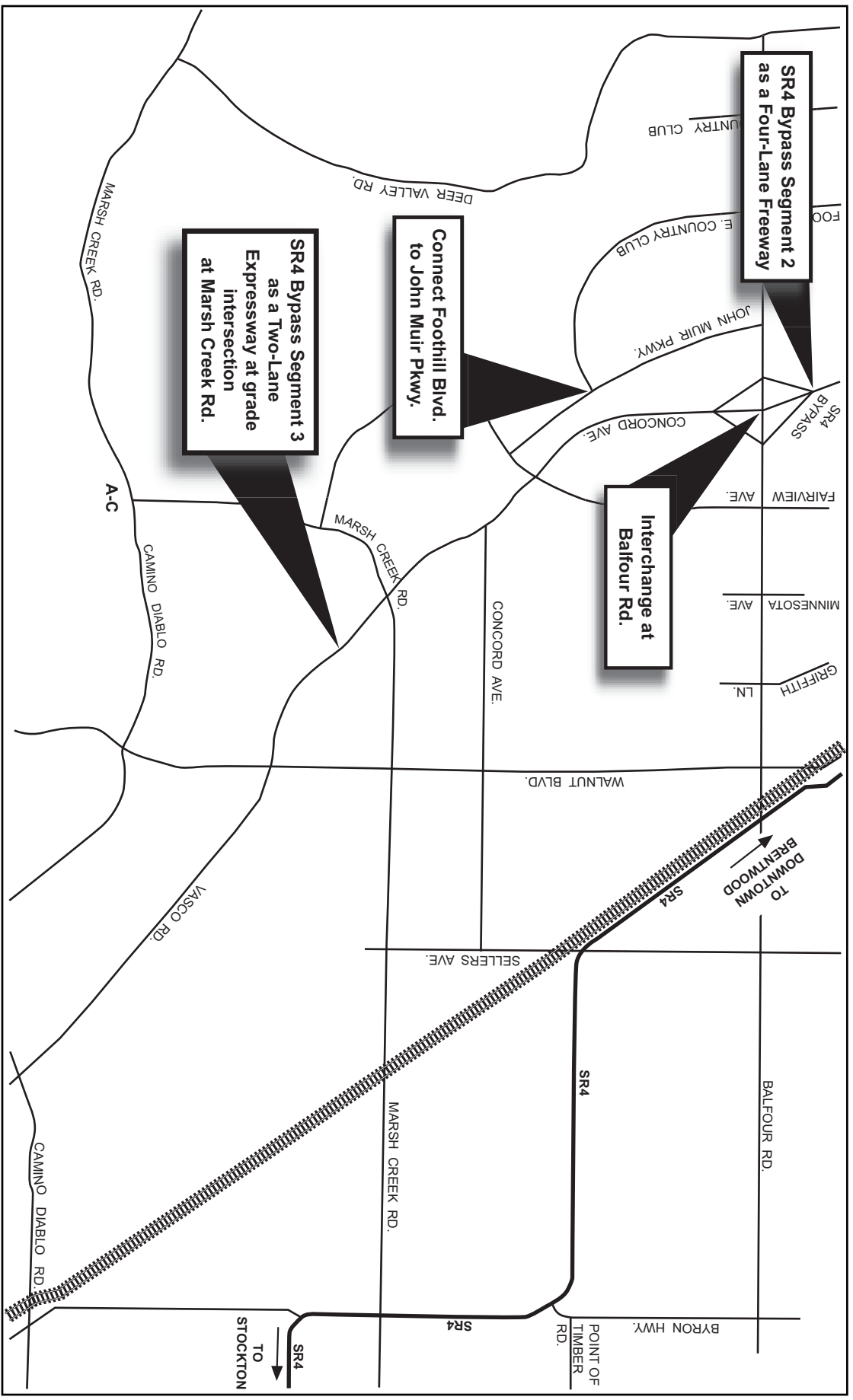
- ❖ Segment 1 of the SR4 Bypass (SR 160 to Lone Tree Way) would operate as a four-lane freeway with interchanges at Laurel Road and Lone Tree Way.
- ❖ Segment 2 of the SR4 Bypass (Lone Tree Way to Balfour Road) would operate as a four-lane freeway with interchanges at Sand Creek Road and Balfour Road.
- ❖ Segment 3 of the SR4 Bypass (Balfour Road to Vasco Road) would operate as a two-lane expressway.
- ❖ John Muir Parkway would be completed and open from Balfour Road to Fairview Avenue.
- ❖ Foothill Boulevard would be extended south to intersect with John Muir Parkway. A traffic signal is assumed at the intersection of Foothill Boulevard and John Muir Parkway.
- ❖ Marsh Creek Road would be improved by adding shoulders to the roadway and installing traffic signals in the east of Segment 3 of the SR4 Bypass.

In general, these improvements are fully funded or can be funded through existing funding mechanisms. For instance, the East County Transportation Improvement Authority 2002 Strategic Plan outlines the funding status of each improvement and funding mechanisms to fund the regional roadway improvements such as the construction of the State Route 4 Bypass and Marsh Creek Road. The location of each study area roadway improvement is shown on Exhibit 3.4-17.

Long-Term Roadway Phasing

Concurrent with construction of Near-term portions of the Vineyards project, several roadways will be constructed or improved. The following roadway improvements are assumed to be in place with the Near-Term project.

- ❖ Extension of Fairview Avenue from its current terminus at Concord Avenue to Marsh Creek Road. The construction of Fairview Avenue would be in two phases. The first phase would include complete roadway improvements to the Recreation Center and grading and utility installation within the remaining length of the improvement. The second phase will include full roadway improvements from the Recreation Center to Marsh Creek Road.
- ❖ Addition of 1 southbound lane on existing Fairview Avenue between Baldwin and Concord Avenue. (This project was formerly approved with the Summerset development).
- ❖ Reconstruction of Concord Avenue north of the Fairview Avenue to a transition west of Briones Valley Road and south to become an access road to the existing PG&E facility. This improvement becomes a portion of John Muir Parkway.
- ❖ Relocation of Concord Avenue east of its current location to form a new intersection for Concord Avenue and Fairview Avenue. (This project was formerly approved with the Summerset development).



Source: FEHR & PEERS Transportation Consultants (2003)



Not to scale

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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR
Long-Term Roadway Improvements

Exhibit 3.4-17

In addition, the following three improvements will be made during the Long-term scenario:

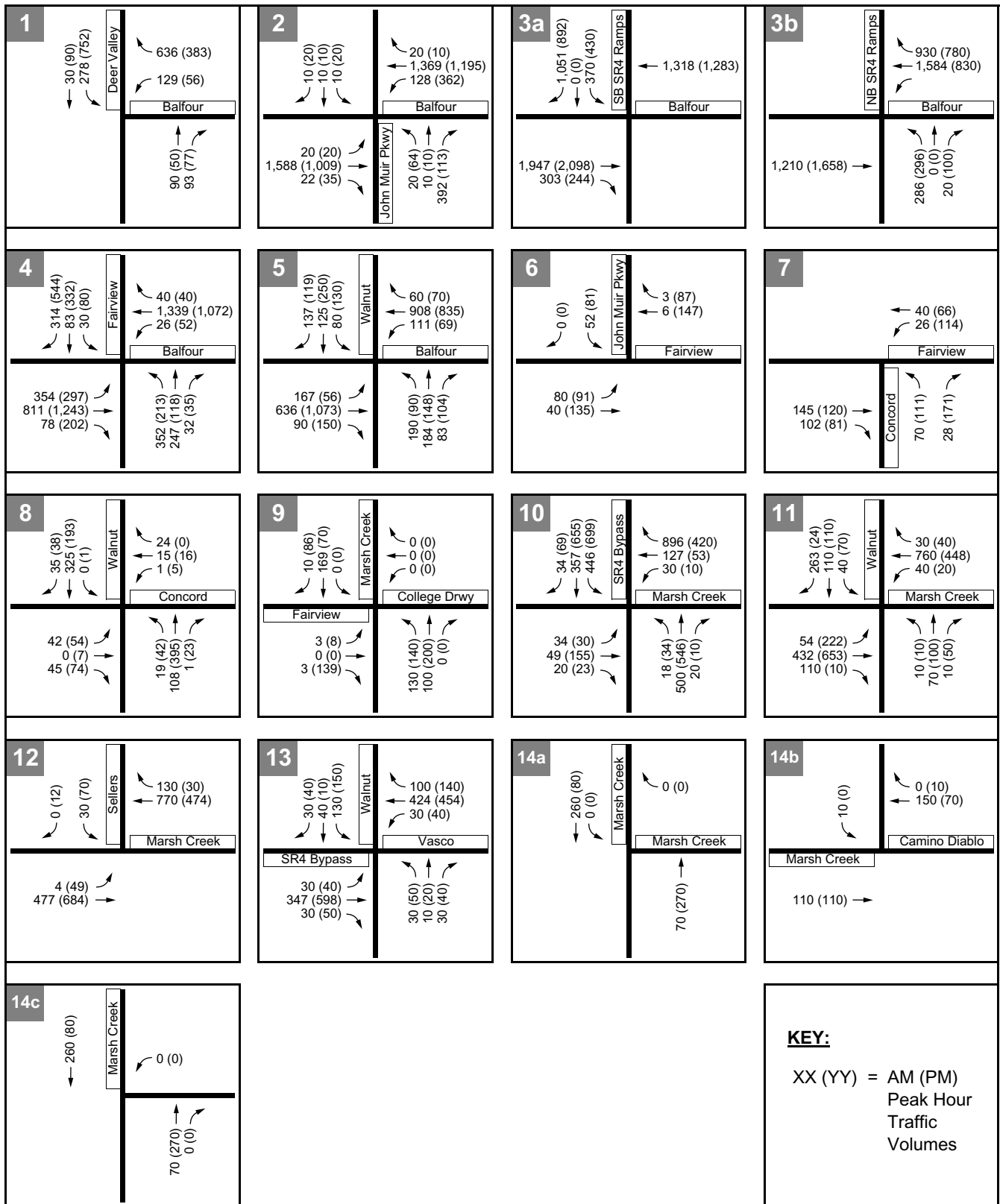
- ❖ Construction of an access road to the community college to provide the terminus of Fairview Avenue and Marsh Creek Road. This would be part of any future development of the community college site.
- ❖ John Muir Parkway would be extended north of Briones Valley Road to Foothill Avenue. This extension, which is not a Vineyards project Component would occur concurrently with the construction of Segment 3 of the SR4 Bypass and is assumed to occur after the Near-term period to ensure the analysis represents a conservative condition.
- ❖ John Muir Parkway would be constructed from Foothill to Ventura Avenue to complete the connection with Balfour Road. This is also not a Vineyards project component.
- ❖ Segment 3 of the SR4 Bypass would be open as a two-lane expressway. This is not a Vineyards project component.

Long-Term Minus Project Traffic

Given the significant land use and roadway network changes currently under development and proposed in the project study area, Fehr & Peers selected a computer model as the most appropriate tool to provide future traffic projections. For the 2025 scenario, the East County Travel Demand Model served as the basis for these future volume forecasts. This model has been modified for use in the Brentwood General Plan EIR, this study, and other transportation studies in the City of Brentwood. More recently, this model was updated for use in developing forecasts for the SR4 Bypass (Segment 3) analysis. Therefore, the volumes contained in this report will deviate from the volumes published in the General Plan EIR.

A major reason for this deviation is the elimination of significant developments from areas in southern Brentwood that were assumed in the original General Plan EIR land use and traffic forecasts. With the acquisition of much of this land by the Trust for Public Land, and subsequent conveyance to State Parks Department, development will be limited in the southern Brentwood area.

Fehr & Peers reviewed the travel demand model land use inputs to verify recently proposed development projects not included in the Existing Plus Approved Project scenario and included in the model (i.e., residential projects such as a 580-unit development by the Pinn Brothers developers), office projects, and Heritage High School and Middle School. A complete list of these projects is included in Appendix D.7. This appendix also includes a review of the travel demand model inputs against the project list and noted that a majority of these specified projects are included in the travel demand model except for Heritage High School and Middle School. Traffic from these projects was then added to the Long-Term Minus Project traffic volumes. The final Long-Term (2025) Minus Project peak hour traffic volumes at each of the study intersections are shown on Exhibits 18A and 18B.



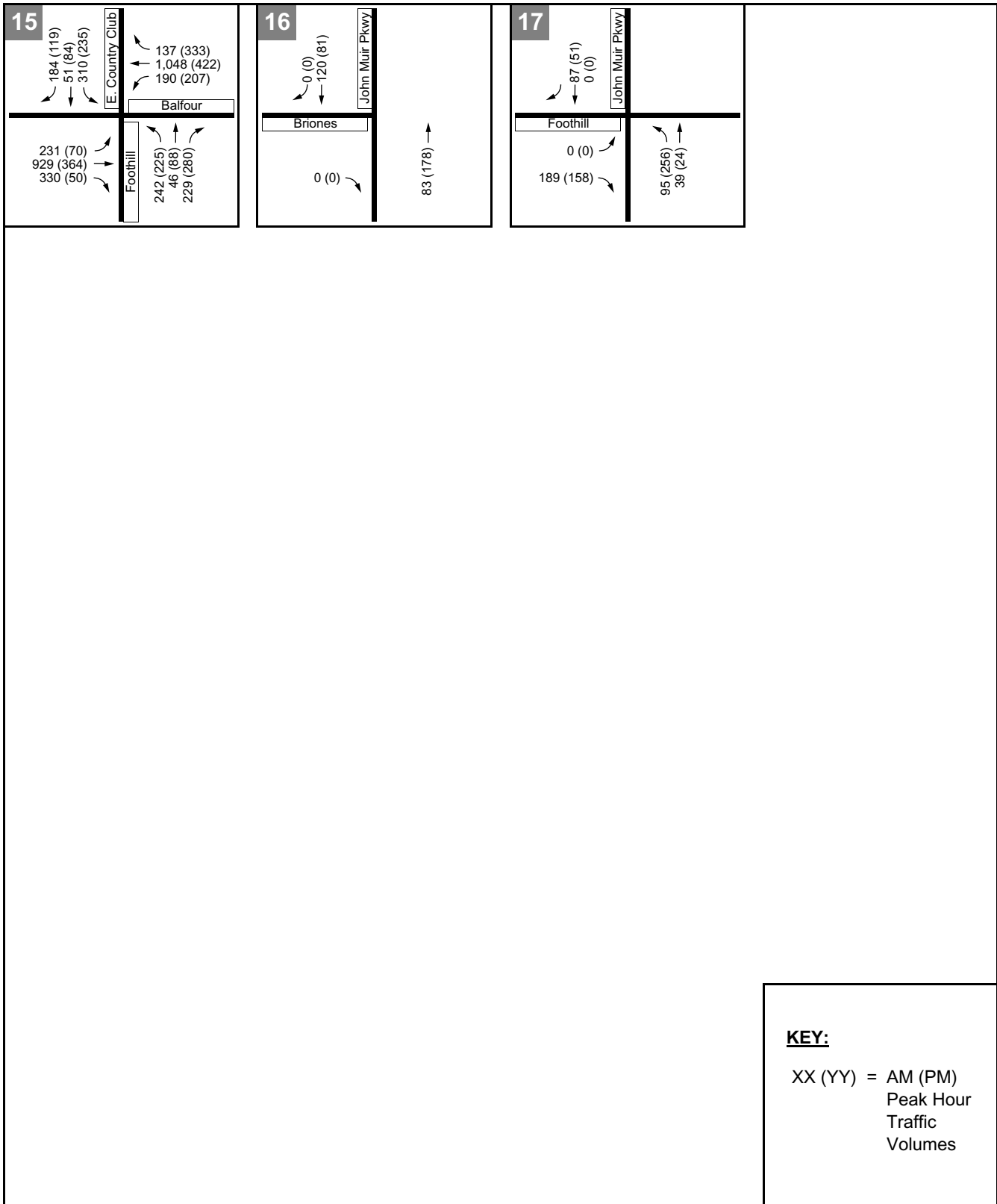
Source: FEHR & PEERS Transportation Consultants (2003)



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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR
Long-Term Without Project Traffic Volumes

Exhibit 3.4-18A



Source: FEHR & PEERS Transportation Consultants (2003)



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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR
Long-Term Without Project Traffic Volumes

Exhibit 3.4-18B

Long-Term Traffic Volumes

Long-Term forecasts were evaluated for three additional scenarios, including the following:

- ❖ Long-Term with Annexation Sites Only. These volumes are shown on Exhibits 19A and 19B.
- ❖ Long-Term with Vineyards project Only. These volumes are shown on Exhibits 20A and 20B.
- ❖ Long-Term with Vineyards & Annexation Sites. These volumes are shown on Exhibits 21A and 21B.

Long-Term Lane Geometry and Traffic Control

This analysis assumes that improvements detailed in the Circulation Element of the General Plan EIR are fully implemented. Assurance for this assumption derives from the City of Brentwood Traffic Impact Fee that assesses fees on all new developments within the City limits. Future intersection geometries and intersection control are shown on Exhibits 3.4-22A and 22B.

Analysis of Future (2025) Conditions

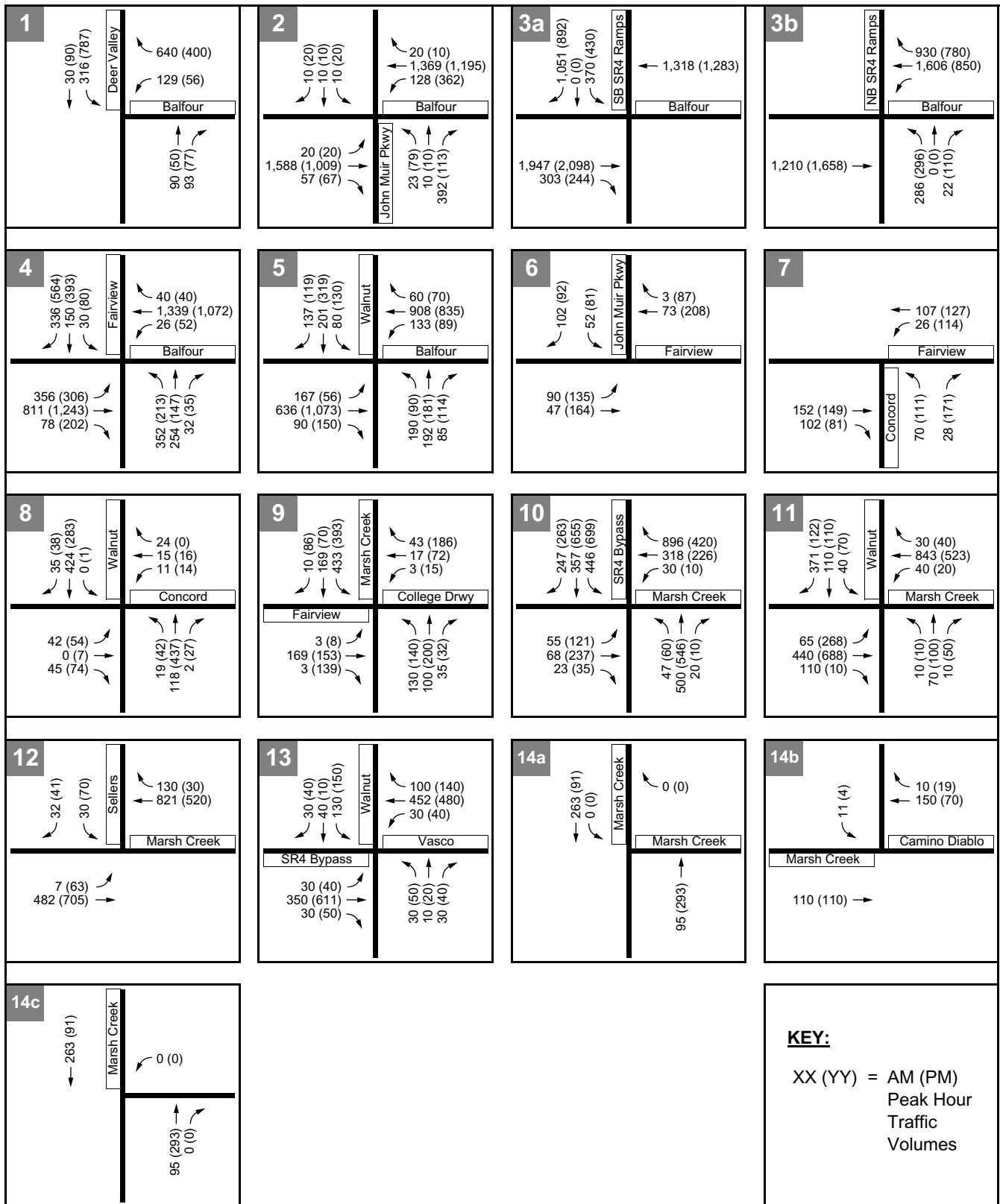
IMPACT 3.4-E. Intersection Operations Long-Term – Vineyards Project and Annexation Sites: As indicated in Table 3.4-10, all intersections in the vicinity of the Vineyards project and Annexation Sites would operate at acceptable levels of service. This is due to completion of Segment 3 of the SR4 Bypass and other improvements made in the project vicinity. A less than significant impact would result with the Long-Term Vineyards project and Annexation Sites. (Less Than Significant Impact).

The analysis of future (2025) conditions was performed using the same methodology previously discussed. Table 3.4-10 presents the result of this analysis and indicates that a majority of the study intersections are projected to operate within an acceptable level of service range (i.e., LOS D [V/C ratio of 0.85] or better) in the future without project scenario. Appendix D.8 provides the LOS calculation worksheets for the Without Project Condition; Appendix D.9 contains the LOS calculation worksheets for the With Project Condition.

Mitigation 3.4-E: Intersection Operations Long Term – Vineyards Project and Annexation Sites: The Long-Term Vineyards project and Annexation Sites would result in a less than significant intersection operations impact and, therefore, no mitigation is required. (Less Than Significant Impact).

CONSTRUCTION-RELATED TRAFFIC

IMPACT 3.4-F. Addition of Construction Traffic – Vineyards Project: Construction of the Vineyards project would not generate substantial volumes of construction traffic such that significant traffic impacts are created. Moreover, heavy equipment would be staged on the project site and thereby not contribute substantially to roadway traffic in the project vicinity. A less than significant impact related to construction traffic would result. (Less Than Significant Impact).



Source: FEHR & PEERS Transportation Consultants (2003)

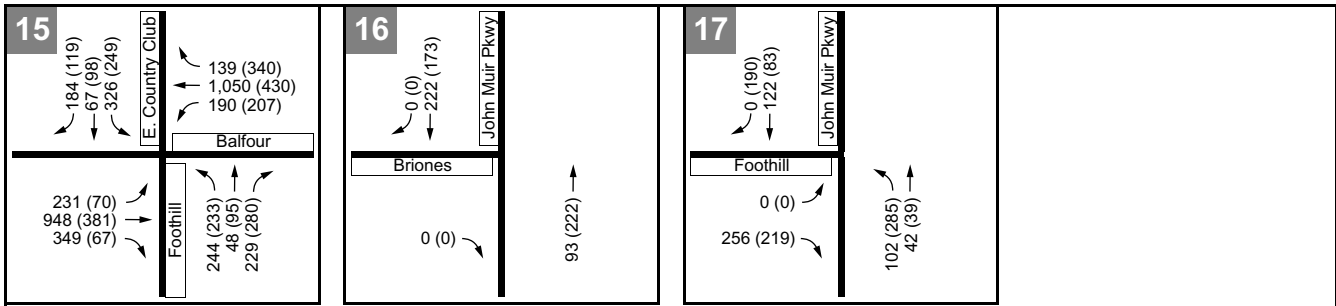
THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Background Plus Annexation (2025 Long-Term) Traffic Volumes



10/20/03 JN 35-100230

Exhibit 3.4-19A



KEY:
 XX (YY) = AM (PM)
 Peak Hour
 Traffic
 Volumes

Source: FEHR & PEERS Transportation Consultants (2003)

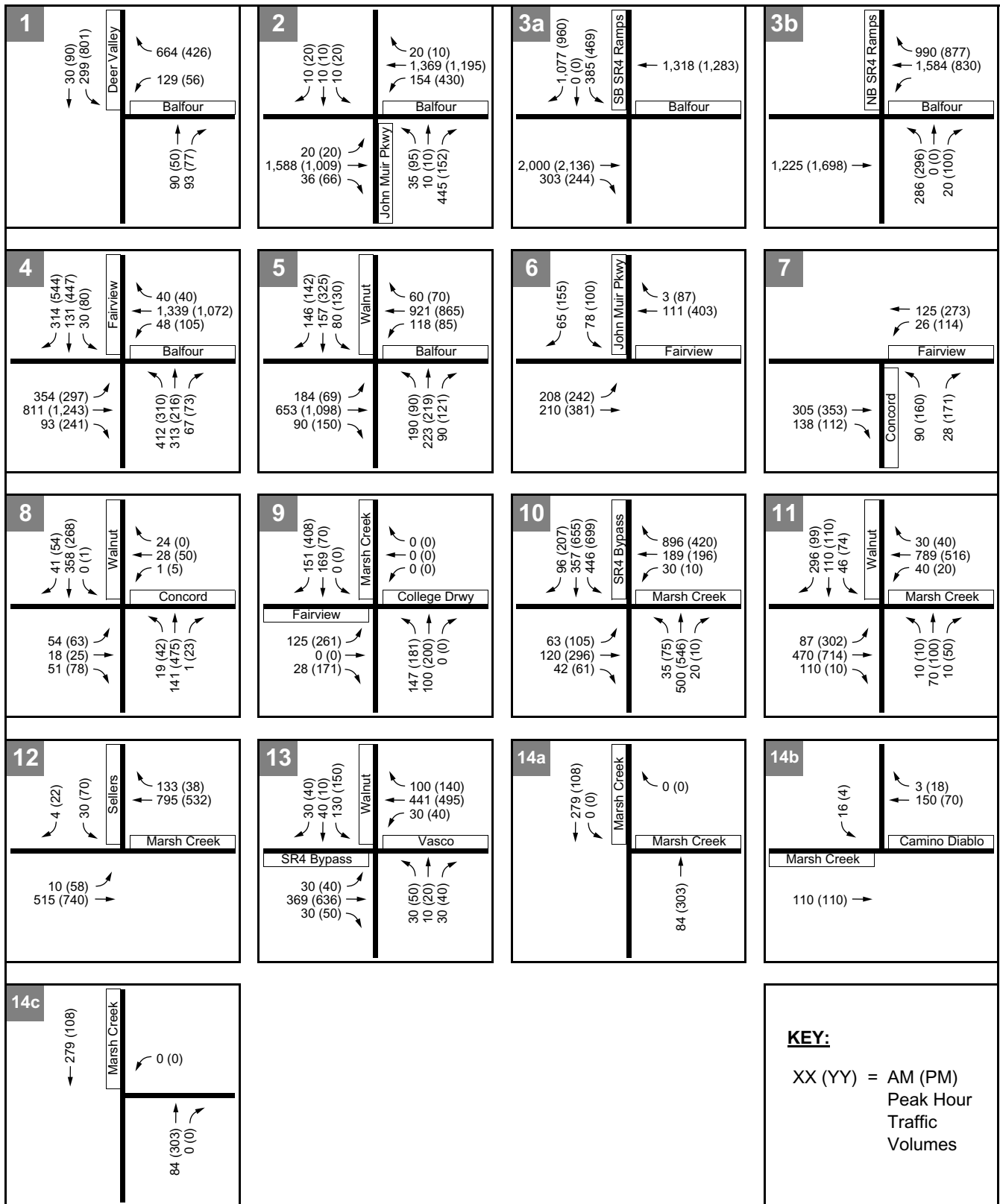
THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Background Plus Annexation (2025 Long-Term) Traffic Volumes



10/20/03 JN 35-100230

Exhibit 3.4-19B



Source: FEHR & PEERS Transportation Consultants (2003)

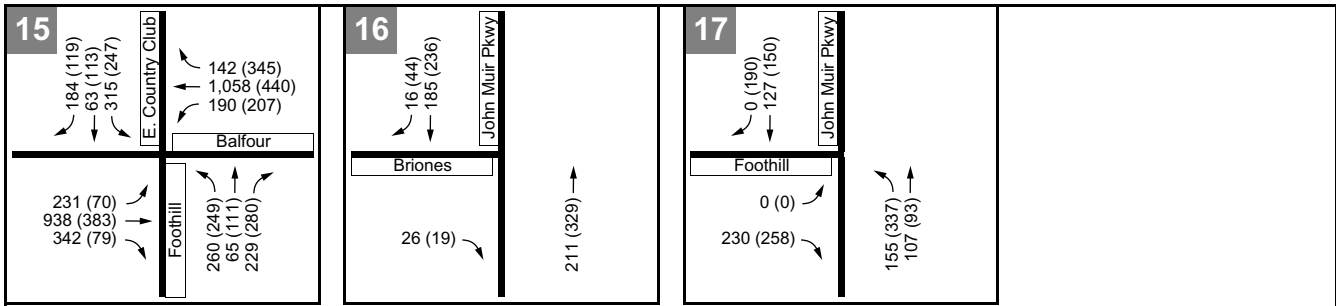
THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Background Plus Vineyards (2025 Long-Term) Traffic Volumes



10/20/03 JN 35-100230

Exhibit 3.4-20A



KEY:
 XX (YY) = AM (PM)
 Peak Hour
 Traffic
 Volumes

Source: FEHR & PEERS Transportation Consultants (2003)

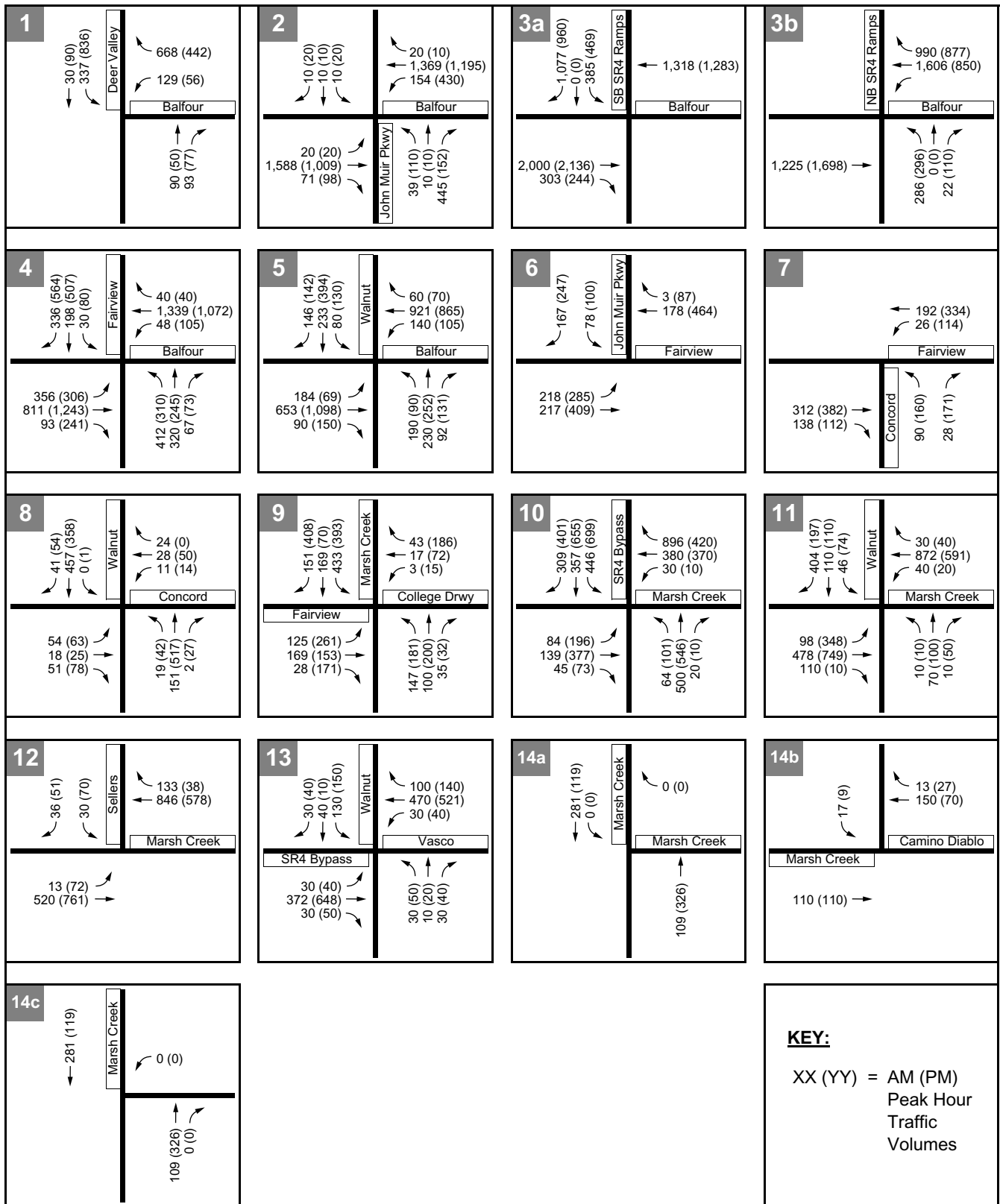
THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Background Plus Vineyards (2025 Long-Term) Traffic Volumes



10/20/03 JN 35-100230

Exhibit 3.4-20B



Source: FEHR & PEERS Transportation Consultants (2003)

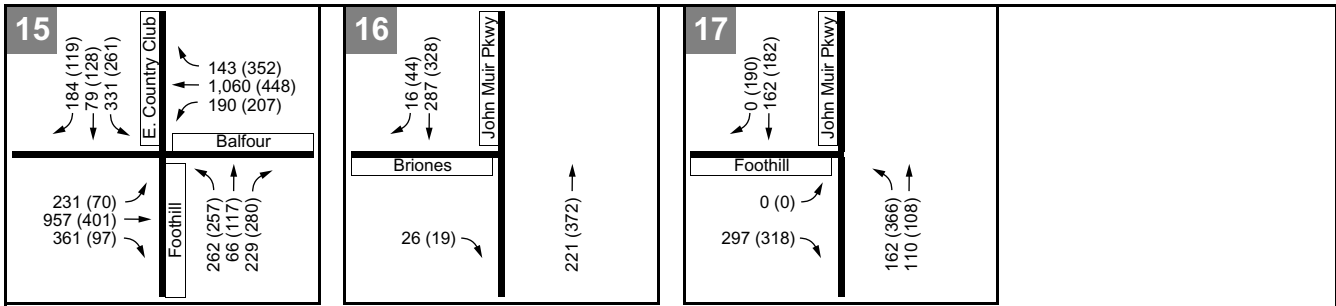
THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Background Plus Annexation Plus Vineyards (2025 Long-Term) Traffic Volumes



10/20/03 JN 35-100230

Exhibit 3.4-21A



KEY:
 XX (YY) = AM (PM)
 Peak Hour
 Traffic
 Volumes

Source: FEHR & PEERS Transportation Consultants (2003)

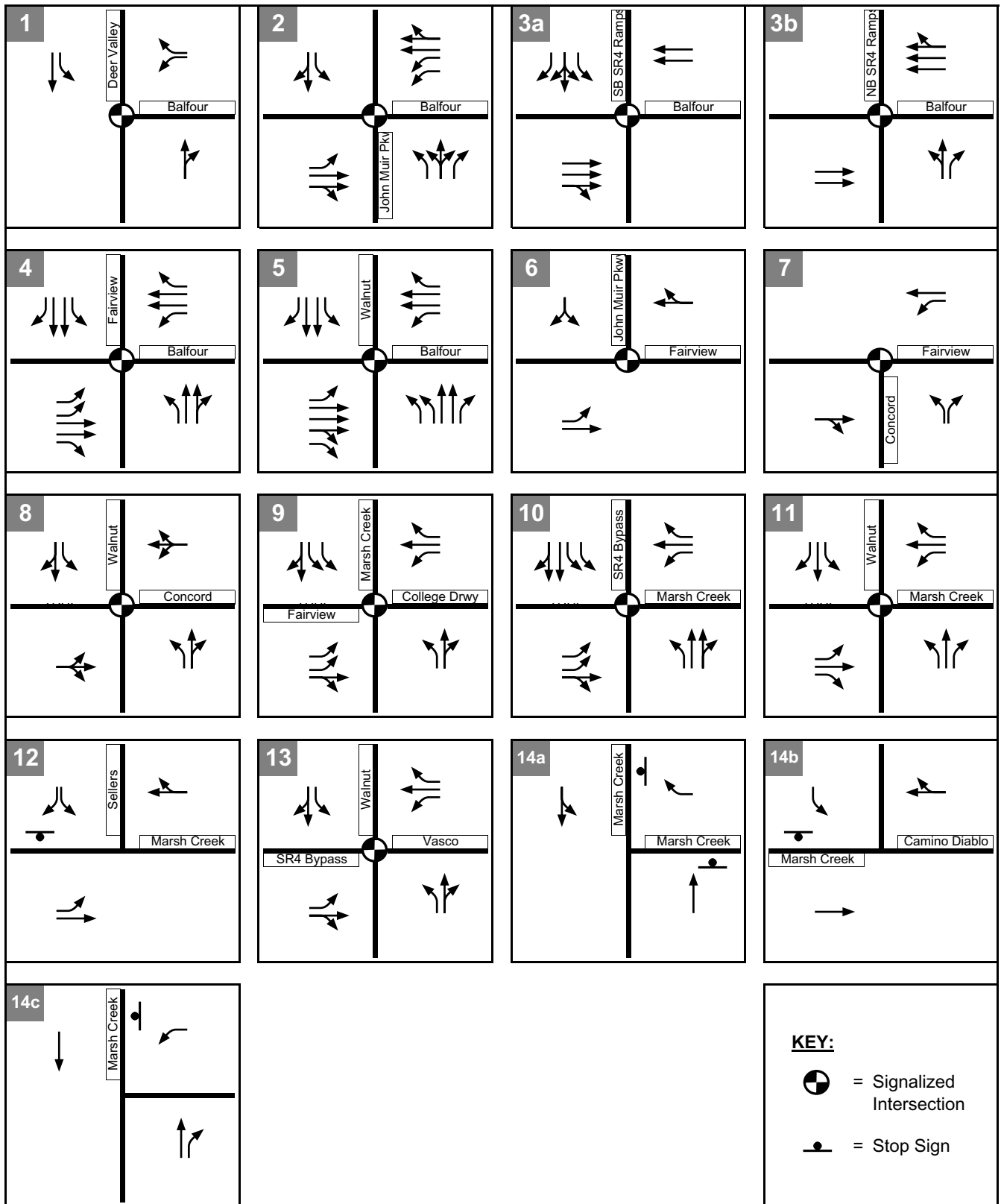
THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Background Plus Annexation Plus Vineyards (2025 Long-Term) Traffic Volumes



10/20/03 JN 35-100230

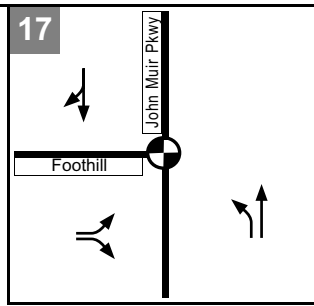
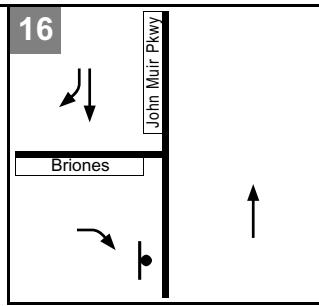
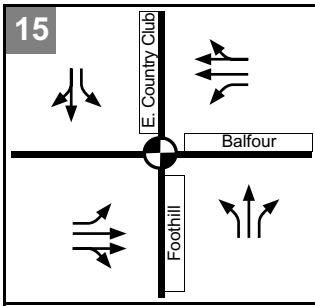
Exhibit 3.4-21B





Source: FEHR & PEERS Transportation Consultants (2003)

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Long-Term Lane Configurations and Traffic Control



KEY:

-  = Signalized Intersection
-  = Stop Sign

Source: FEHR & PEERS Transportation Consultants (2003)



Long-Term Lane Configurations and Traffic Control

**TABLE 3.4-10
CUMULATIVE WITHOUT AND WITH PROJECT PEAK HOUR INTERSECTION LEVEL OF SERVICE**

Intersection	Control	Peak Hour	Without Project		With Vineyards		With Annexation		With All	
			V/C Ratio2 or Delay3	LOS	V/C Ratio2 or Delay3	LOS	V/C Ratio2 or Delay3	LOS	V/C Ratio2 or Delay3	LOS
Balfour Road/Deer Valley Road	Signal	AM	0.48	A	0.49	A	0.48	A	0.49	A
		PM	0.54	A	0.47		0.56		0.59	
Balfour Road/John Muir Parkway	Signal	AM	0.65	B	0.67	B	0.66	B	0.68	B
		PM	0.48	A	0.52	A	0.49	A	0.53	A
Balfour Road/SR 4 Bypass NB	Signal	AM	0.68	B	0.71	C	0.53	C	0.71	C
		PM	0.62	B	0.65	B	0.62	B	0.67	B
Balfour Road/SR 4 Bypass SB	Signal	AM	0.74	C	0.76	C	0.74	C	0.76	C
		PM	0.71	C	0.74	C	0.71	C	0.74	C
Balfour Road/Fairview Avenue	Signal	AM	0.68	B	0.71	C	0.70	C	0.73	C
		PM	0.61	B	0.68	B	0.63	B	0.70	B
Balfour Road/Walnut Boulevard	Signal	AM	0.48	A	0.51	A	0.41	A	0.52	A
		PM	0.49	A	0.53	A	0.51	A	0.55	A
John Muir Parkway/Fairview Avenue	Signal	AM	0.08	A	0.26	A	0.18	A	0.36	A
		PM	0.23	A	0.55	A	0.34	A	0.66	B
Concord Avenue/Fairview Avenue	Signal	AM	0.22	A	0.34	A	0.22	A	0.35	A
		PM	0.35	A	0.53	A	0.36	A	0.55	A
Concord Avenue/Walnut Boulevard	Signal	AM	0.31	A	0.36	A	0.37	A	0.43	A
		PM	0.35	A	0.44		0.38		0.47	
Marsh Creek Road/Fairview Avenue	Signal	AM	0.19	A	0.32	A	0.34	A	0.41	A
		PM	0.26	A	0.50	A	0.49	A	0.64	B
Marsh Creek Road/SR 4 Bypass	Signal	AM	0.53	A	0.54	A	0.54	A	0.56	A
		PM	0.52	B	0.62	B	0.58	B	0.69	B
Marsh Creek Road/Walnut Boulevard	Signal	AM	0.64	B	0.68	B	0.76	C	0.80	C
		PM	0.56	A	0.57	A	0.64	A	0.73	A
Marsh Creek Road/Sellers Avenue	SSS	AM	24.4 seconds	C	31.5 seconds	D	26.1 seconds	D	31.5 seconds	D
		PM	33.3 seconds	D	40.5 seconds	E	33.3 seconds	D	41.8 seconds	D

**TABLE 3.4-10
CUMULATIVE WITHOUT AND WITH PROJECT PEAK HOUR INTERSECTION LEVEL OF SERVICE**

Intersection	Control	Peak Hour	Without Project		With Vineyards		With Annexation		With All	
			V/C Ratio2 or Delay3	LOS	V/C Ratio2 or Delay3	LOS	V/C Ratio2 or Delay3	LOS	V/C Ratio2 or Delay3	LOS
Vasco Road/Walnut Boulevard	Signal	AM	0.38	A	0.39	A	0.40	A	0.41	A
		PM	0.53	A	0.57	A	0.55	A	0.57	A
Camino Diablo /Marsh Creek Road	SSS	AM	12.7	B	13.1	B	13.0	B	13.5	B
		PM	seconds 11.7	B	seconds 12.4	B	12.1	B	seconds 12.7	B
Balfour Road/Foothill	Signal	AM	0.75	C	0.77	C	0.77	C	0.78	C
		PM	0.46	A	0.49	A	0.47	A	0.51	A
John Muir Parkway/Vineyards Driveway	SSS	AM	N/A	N/A	9.3 seconds	A	N/A	A	9.3 seconds	A
		PM	N/A	N/A	9.7 seconds	A	N/A	A	9.7 seconds	A
John Muir Parkway/Foothill	Signal	AM	0.16	A	0.21	A	0.22	A	0.27	A
		PM	0.29	A	0.39	A	0.52	A	0.43	A

¹ Signal = Signalized Intersection, SSS = side-street stop-controlled intersection

² Volume-to capacity ratio determined for all signalized intersections using the CCTA LOS methodology.

³ For side street stop-controlled intersections, delay for worst movement (in seconds per vehicle) calculated using the 2000 Highway Capacity Manual methodology

Source: Fehr & Peers, 2003.

The purpose of the construction-related traffic analysis was to determine if construction traffic would generate additional traffic impacts beyond those previously identified. The base assumption of this analysis was that an impact would occur if construction-related traffic exceeded the trips generated during the initial phase or build-out of the project. To fully analyze construction traffic, it was necessary to first quantify the number of vehicles expected during construction by estimating the number and type of vehicles for each element of the construction process. Construction-related traffic included the following elements:

- ❖ Construction workers traveling to and from the site on a daily basis, including those workers required to prepare the site through grading and excavation activities and also for construction of various buildings that would occupy the site. In general, the number of workers required for the construction phase is much higher than the number of workers required to grade and prepare the site.
- ❖ Heavy equipment (i.e., bulldozers, graders, scrapers, cranes) traveling to and from the site.
- ❖ Trucks depositing or removing fill material.

Each of these items is addressed below. Please note that this information is presented for the Vineyards at Marsh Creek Project. No construction traffic information is available regarding future development of the Annexation Sites.

Construction Worker Traffic

According to materials supplied by the project applicant, grading activities will require approximately 40 vehicles of various types. Assuming two workers per piece of heavy equipment, no more than 80 workers will be required during the grading phase. The construction phase of the project would likely require no more than 250 workers on a daily basis for similar projects in Brentwood. With typical auto occupancies (1.5 persons per vehicle), the expected number of vehicles from these construction workers would range from 60 during the grading phase to 175 during the construction phase. For reference, construction-related traffic generally occurs outside of peak hour periods with construction typically beginning at 7:00 AM and concluding by 3:00 PM.

Heavy Equipment

According to information provided by the project applicant, the project would likely require approximately 40 pieces of heavy equipment (i.e., tractors, scrapers, bulldozers, etc.) to grade the site. These vehicles will be staged on-site, therefore, traffic impacts would only occur as the vehicles are delivered to the site and removed when grading is completed.

The construction of buildings on the site and related infrastructure will likely require even less vehicles than grading. According to the project application, the number of vehicles required for construction is 20 or less. These vehicles would be maintained on-site and only depart the site after construction is completed.

Trucks Depositing/Removing Fill Material

According to the project applicant, grading will not require significant import or export of material to the site. Therefore, the number of trucks entering or leaving the site on a daily basis would be minimal.

Based on the above information, the project construction-related traffic is expected to be less than the traffic generated during the initial phase of the project. For instance, the first phase of the project would generate approximately 500 peak hour trips during the AM peak hour and 800 trips during the PM peak hour. Given that project workers will generate less than 200 peak hour trips, there would be no significant impact from construction-related traffic.

However, the City of Brentwood has indicated a desire to limit the number of construction vehicles on Walnut Boulevard. Therefore, the following recommendations are made for incorporation into the Vineyards project site plan:

Recommended Mitigation 3.4-F. Addition of Construction Traffic – Vineyards Project: Construction related traffic due to the Vineyards project would result in a less than significant impact and, therefore, no mitigation is required. However, the City of Brentwood has indicated a desire to limit the number of construction vehicles on Walnut Boulevard. Therefore, the following recommendations are made:

- ❖ **Construction traffic would be routed onto Balfour Road using Concord Avenue and Fairview Avenue to the north and east of the project. Construction vehicles would be prohibited from using Walnut Boulevard above Concord Avenue given the high volumes found on this roadway.**

(Less Than Significant Impact).

PROJECT ACCESS, EMERGENCY ACCESS AND CIRCULATION

IMPACT 3.4-G. Project Access, Emergency Vehicle Access, and Site Circulation – Vineyards Project: Based upon review of available project design plans, the Vineyards project would not result in hazards due to unacceptable design features. The project would provide adequate emergency access. Further, the project would not substantially conflict with City of Brentwood or CCTA alternative transportation policies, plans or programs. A less than significant project access and circulation impact would result. (Less Than Significant Impact).

This section provides an evaluation of the site access and on-site circulation, including vehicular access, intersection spacing, roadway design, emergency vehicle access, residential on-street parking requirements, and non-vehicular internal circulation of the Vineyards project. Because there are not project/site plans for the Annexation Sites, a similar analysis cannot be conducted for those sites. For the Vineyards project, a significant impact requiring mitigation would occur if one of the following conditions would result:

- ❖ The project substantially increases hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment.)\
- ❖ The project results in inadequate emergency access.
- ❖ The project conflicts with adopted alternative transportation policies, plans, or programs.

The site plan review draws heavily on the Design Workshop conducted by Hart Howerton. For reference, a summary of the workshop process and results is provided in Appendix D.10.

Potential Hazards Due to Design Features

To determine whether the project substantially increases hazards the following components of the Vineyards project were analyzed. These components include:

- ❖ External Site Access
 - ❖ Traffic Control and Driveway Spacing
- On-site roadway design

External Site Access

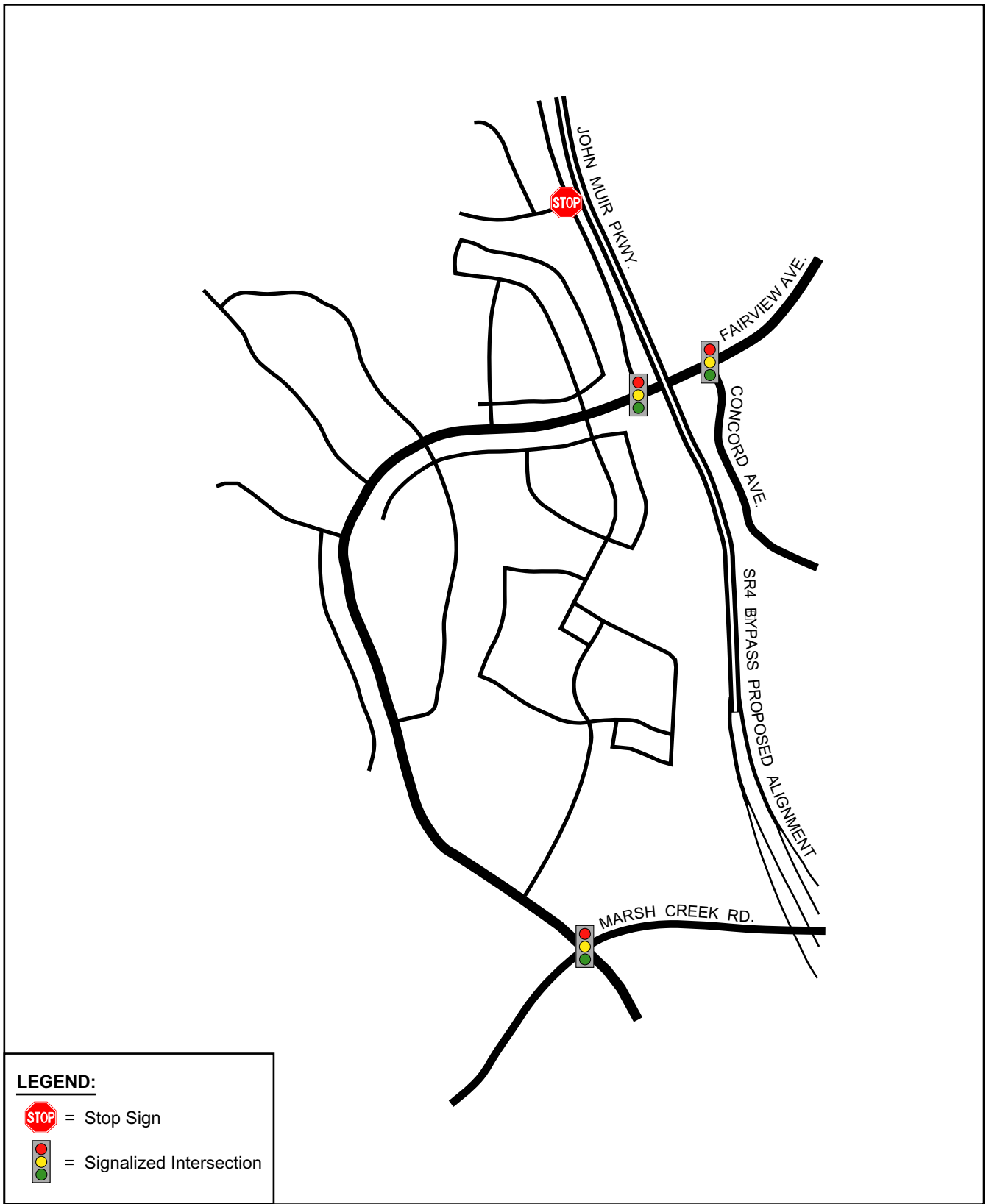
Vehicular access for the Vineyards at Marsh Creek Project occurs at three locations:

- ❖ Briones Valley Road along John Muir Parkway north of Fairview Avenue; that serves as a minor access point.
- ❖ An extension of Fairview Avenue through the development (Fairview Avenue currently ends at Concord Avenue). The replacement of Concord Avenue with John Muir Parkway and the extension of Fairview Avenue will allow this intersection to operate as a four-way intersection.
- ❖ Marsh Creek Road to the intersection with the Fairview Avenue extension.

Three traffic signals will be installed with construction of the project: (1) one signal would be installed at the main entrance to the project site (i.e., the intersection of Fairview Avenue and John Muir Parkway); (2) a second traffic signal would be installed at the Fairview Avenue extension and Marsh Creek Road intersection; and (3) a third traffic signal would be installed at the intersection of Fairview Avenue and the realigned Concord Avenue. The location of these traffic control devices is shown on Exhibit 3.4-23.

Traffic Control and Driveway Spacing

The intersection spacing was analyzed between the proposed intersections and concluded that spacing was adequate for each intersection. (This review considered both signalized and unsignalized intersections.)



Source: FEHR & PEERS Transportation Consultants (2003)

The spacing analysis was considered between proposed signals on Muir Parkway, Concord Avenue, and Fairview Avenue. The intersection spacing on Muir Parkway was more than adequate. Over 3,000 feet separates the proposed traffic signal on Muir Parkway from the proposed traffic signal to the north (i.e., at the extension of Foothill Boulevard). The spacing between the signal at John Muir Parkway/Fairview Avenue and Fairview Avenue/Concord Avenue is 945 feet. Given that 800 feet is considered an acceptable distance for signal spacing, these distances can be considered adequate.

The spacing analysis also considered distances of unsignalized access driveways. This review focused on the Briones Valley Road access (north of Fairview Avenue) and the entrance for the Village Center that would be located northwest of Marsh Creek Road on Fairview Avenue. The distance from these access points to the nearest traffic signal was calculated. From Briones Valley Road, the nearest future traffic signal (Foothill Boulevard) will be nearly 1,600 feet away. The Village Center access would be 700 feet from the traffic signal at Fairview Avenue and Marsh Creek Road. This spacing is considered acceptable the Village Center access. Intersection spacing is shown on Exhibit 3.4-24.

On-Site Roadway Design

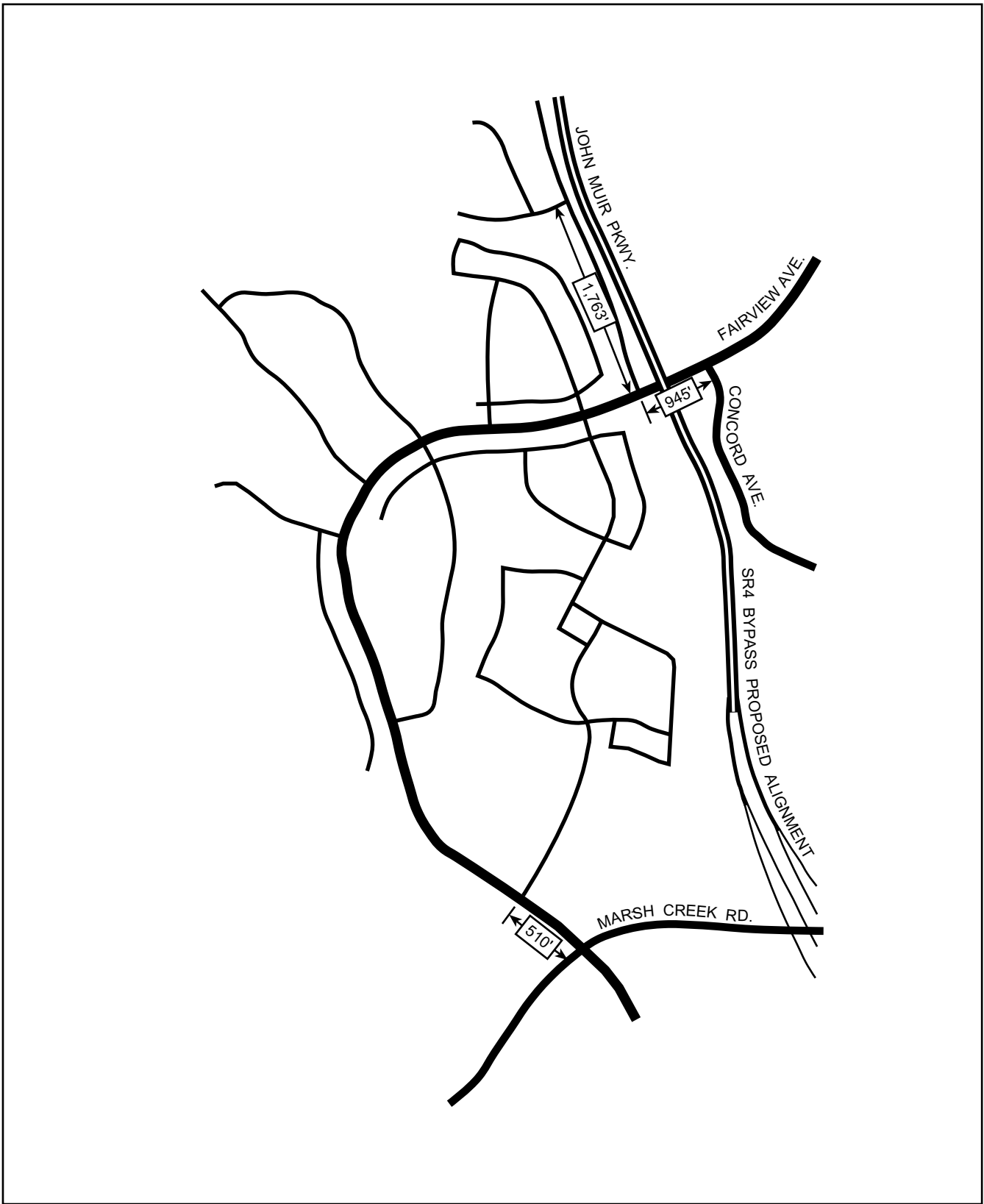
Two conceptual cross-sections are shown on Exhibit 3.4-25. Hart Howerton prepared these cross-sections during the Vineyards at Marsh Creek Community workshops conducted from April to July 2003. Through further project design, the sections have been slightly modified.

Fairview Avenue is proposed as a 140-foot right of way with two 12-foot travel lanes, a 16-foot median island, two 8-foot bike lanes, and two 42-foot parkways outside the roadway. An 8-foot multiuse path for pedestrian, bike and golf cart use is proposed on both sides of Fairview Avenue within this 42' landscaped Right-of-Way. There would be no on-street parking allowed on Fairview Avenue.

Local Streets are proposed as 30-foot right-of-way (ROW) with two 14.5 foot travel lanes. A 10-foot public utility easement (PUE) that overlaps the Right-of-Way 6-inches would exist on both sides of the right-of-way. A 4-foot curb-adjacent sidewalk is proposed to occur on one side of the roadway, and would be located within the public utility easement. These same street widths currently exist in the previous Summerset Communities. There would be no on-street parking allowed on residential local streets; instead, perpendicular parking spaces would be provided in a ratio no less than 1 space per 7 homes. The actual amount of these spaces provided in the plan would be much more than 1 space per 7 homes. The executive lots' Local Street would not provide this perpendicular parking. Instead, it is expected that guest parking would be accommodated on-site, given the large size of the lots. Both the Active Adult and the Executive Neighborhoods would have gated entries.

Local Spine Streets are proposed to connect the neighborhood parks to the neighborhood entries and Village Center. Local Spine Streets are proposed as a 35-foot right-of-way with the same lane configuration as the Local Street. (In addition, these streets would provide a 5-foot landscaped parkway strip adjacent to the roadway, and would separate the 4-foot sidewalk from the curb. Similar to the Local Street, the sidewalk would be located within the public utility easement; no on-street parking would be allowed; and instead, perpendicular parking spaces would be provided.

These cross-sections were reviewed against the City of Brentwood Standard Plans and Specifications (2001). This review indicated that these cross-sections were generally consistent with the City of Brentwood's requirements with the following exceptions:



Source: FEHR & PEERS Transportation Consultants (2003)



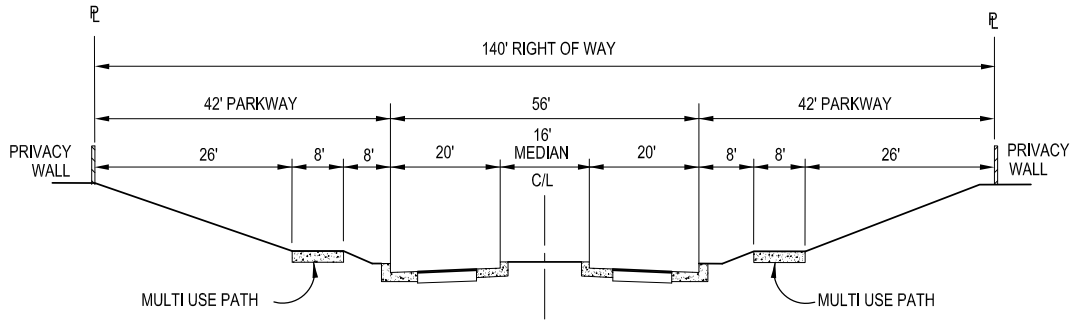
Not to scale

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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

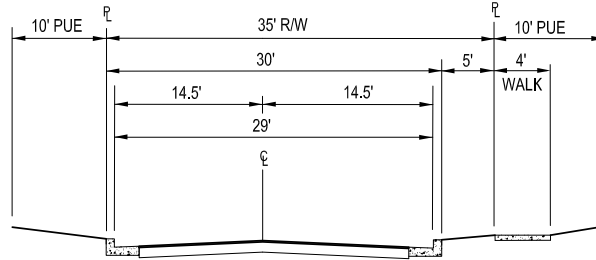
Intersection Spacing

Exhibit 3.4-24



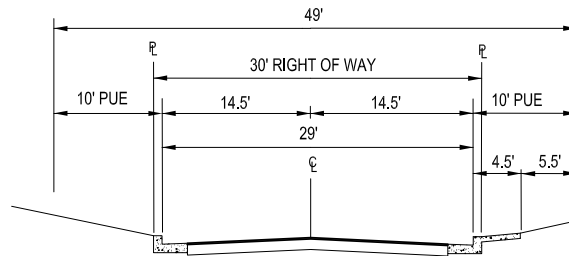
FAIRVIEW AVENUE - IN-TRACT (140' R/W)

NOT TO SCALE



LOCAL SPINE STREET SECTION (35' R/W)

NOT TO SCALE



LOCAL STREET SECTION (30' R/W)

NOT TO SCALE

Source: Carlson Barbee & Gibson (2003)



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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Cross-Section Views

Exhibit 3.4-25

- ❖ The total distance provided for landscaping in the Vineyards project is 42 feet; the City of Brentwood only requires 15 feet (not including a sidewalk or adjacent path).
- ❖ The cross-section of the Local and Spine streets includes a 29-foot two-way travel lane; the City of Brentwood only requires 24 feet for travel lanes.

Because these cross-sections are generally consistent with acceptable design standards, it can be concluded that the project does not substantially increase hazards due to a design feature and, therefore, no significant impacts would result.

EMERGENCY VEHICLE ACCESS

A review of the project site plan indicates that two main entrances for the project site: (1) one entrance is located at Concord Avenue (Near-Term) or John Muir Parkway (Long-Term), and (2) a second entrance is located at Marsh Creek Road. Therefore, the overall development could be accessed from an emergency vehicle originating in the north (Balfour Road) or south (Marsh Creek Road). Access to interior development areas would be provided from Fairview Avenue (i.e., with two 12-foot travel lanes and an adjacent 8-foot bike lane). Roads interior to the project are proposed to have a curb-to-curb width, with no medians. These are private roadways that provide 6' in addition to the 12-foot lanes within a standard city neighborhood roadway. The difference is that on street parking is not allowed, but provided for in perpendicular parking spaces at a ratio of no less than 1 space per 7 homes.

In preparation of this EIR, the Brentwood Police Department (BPD) was contacted to inquire whether or not the Vineyards project would have an adverse effect on the Department's ability to serve the site, as well as other areas in the City. Chief Michael R. Davies responded in writing (April 22, 2003) to the inquiry by indicating BPD's major concern was the project's narrow roadway widths. "A major concern is narrow roadway widths as it related to parking and unimpeded travel by emergency vehicles. A secondary concern is the delay in response times due to gated access points." With regard to the narrower street widths, the BPD was concerned that vehicles parked against the curb line can impede or restrict the flow of emergency vehicle access.

Twenty-nine foot curb to curb streets currently exist in the previous Summerset Community. Parking bays are provided for in long blocks and usually at end of streets. A number of issues have been identified over the years:

1. Some people find the parking bays to be inconvenient (i.e. due to the distance or inclement weather).
2. Some people unlawfully park along street curbs due to inconveniently located parking bays.
3. Delivery trucks, gardeners and other service vehicles may choose to park along curb area, which may be more convenient for their use.

Due to the concern that any vehicles illegally parked against the curb line can impede or restrict the free flow of emergency vehicle access, and the three issues listed above, the BPD initially recommended standard streets be provided in the neighborhoods.

Subsequent to the written response by Chief Davies, the BPD had a meeting with the City and applicant team to discuss street widths with regard to emergency access. The BPD indicated their preference that the project apply Brentwood standard public street widths, but also indicated a willingness to consider other options for the Vineyards project. At the conclusion of this meeting, the BPD agreed to consider a “pilot” roadway/parking design, specific to the Vineyards project, that would allow for a 29-foot curb-to-curb roadway width (no median) in the Active Adult areas so long as sufficient parking bays were provided and additional parking was provided for recreational vehicles (RVs). Parking spaces were discussed as parallel bays with a “pop-out” at each end to designate the end of the parking bays, and would be signed to restrict parking for up to two hour.

Based upon a traffic and design engineering review of the popouts, their relationship to the architecture and consideration for attaining the same goals of the BPD parking concept, the project includes off street parking in a perpendicular orientation. This parking would be provided in small groups and more conveniently located to all lots. In addition, the project architecture includes features that improve the ability for guest and delivery vehicles to park legally within the Community. Some house plans also have a three car garage. Finally, an RV site would be provided within the plan area.

Based on the pilot roadway/parking scheme for the private roads in the Vineyards project an assessment was conducted to determine if adequate emergency access would be provided in the Active Adult areas. A traffic assessment was made of this configuration during a hypothetical worst-case scenario. The assessment determined that emergency vehicle access would be sufficient. The worst-case scenario would assume the following:

- ❖ The project entrance at Fairview Avenue and John Muir Parkway is blocked due to an accident.
- ❖ A house requires ambulance service due to a medical emergency

Under this worst-case scenario, the emergency vehicle would be available to access the household requiring services by entering at the Fairview Avenue/Marsh Creek Road entrance. Additionally, it is extremely unlikely that Fairview Avenue would ever be fully blocked as the 8-foot bike lane allows stalled or damaged vehicles to pull out of the travel lane, thereby allowing traffic to proceed on Fairview Avenue. Additionally, parking will not be permitted on Fairview Avenue, which will ensure that emergency vehicles can easily pass-through the site without being impeded by parked cars.

Additionally, emergency vehicles will be able to access the interior development areas. The interior roadways will have 29 feet of pavement and no median. Therefore, an emergency vehicle (i.e., an ambulance or medical vehicle) will be able to pass any cars using the travel lanes.

Based on the access configurations and roadway design, this project can be judged to have sufficient emergency vehicle access. Therefore, no significant impacts would result.

**POTENTIAL PROJECT CONFLICTS WITH
ADOPTED ALTERNATIVE TRANSPORTATION POLICIES, PLANS, OR PROGRAMS**

The City of Brentwood General Plan, adopted in 2001, clearly states the City’s preference to accommodate transportation modes. This policy states: “Develop and maintain a balanced transportation system within the City that provides a choice of transit, bicycle, and equestrian, pedestrian, and private automobile modes”.

As shown on Exhibit 3.4-26, the project will provide significant pedestrian and bicycle facilities, including:

- ❖ An on-street bike lane on Fairview Avenue
- ❖ An 8-foot multi use path on each side of Fairview Avenue
- ❖ A 4-foot pedestrian path on other local and local spine roadways
- ❖ Pedestrian trail network within the neighborhoods.

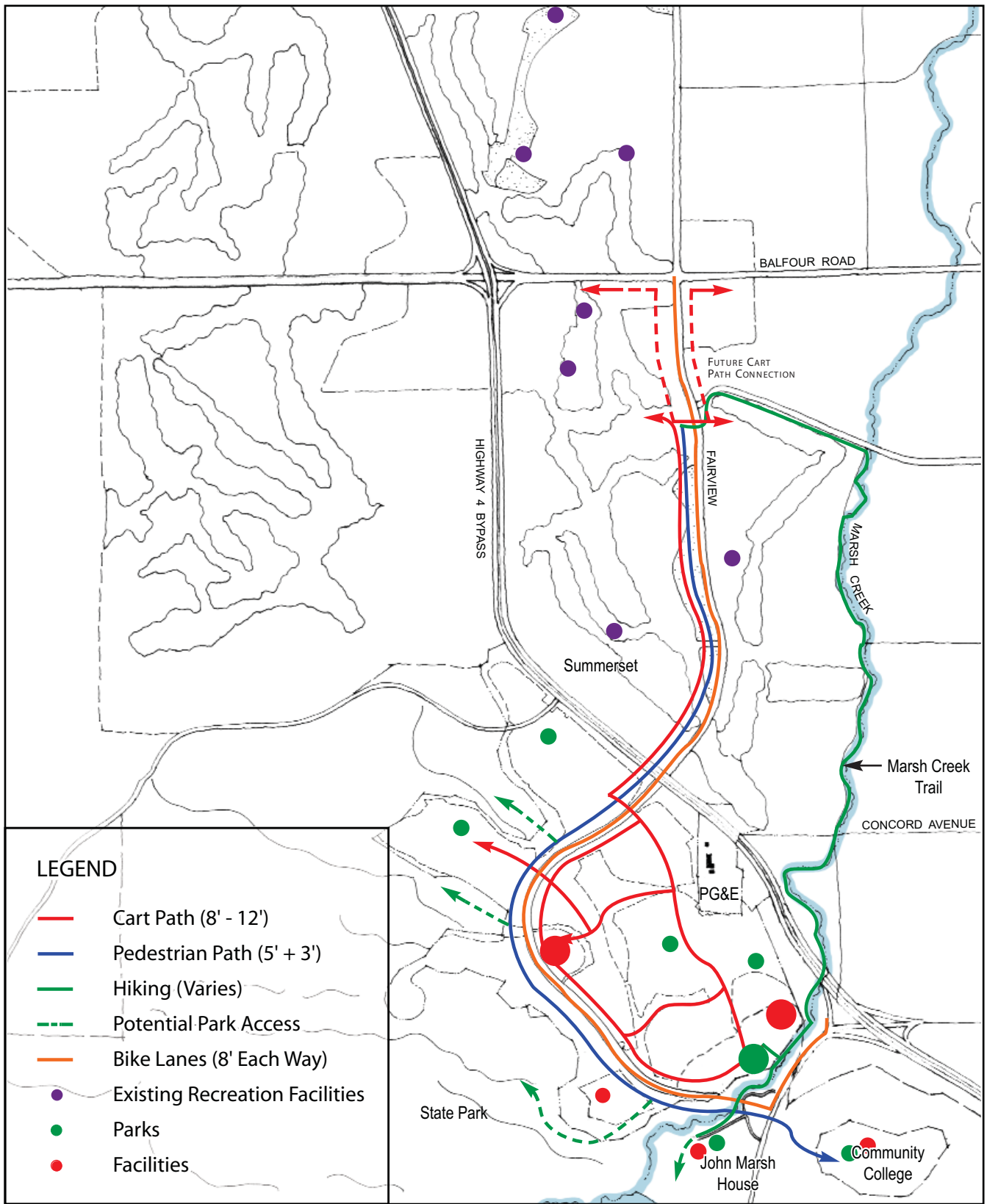
These facilities will extend to the north of the Vineyards at Marsh Creek development and provide connection to the other phases of the Summerset Development, as well as provide external connectivity to roadways such as Balfour Road.

Based on this review, it can be determined that the Vineyards at Marsh Creek Project provides sufficient bicycle and pedestrian facilities. Therefore, the project does not conflict with adopted plans regarding alternative transportation and does not cause a significant impact.

Recommended Mitigation 3.4-G. Project Access, Emergency Vehicle Access, and Site Circulation – Vineyards Project: The long-term Vineyards project would result in a less than significant impact as it related to Project access, emergency vehicle access and site circulation impact and, therefore, no mitigation is required. However, the following recommendations are made for incorporation in the Vineyard project site plan:

- ❖ **Neighborhood access roadways intersecting with Fairview Avenue would not be signalized. Side-street stop sign control would be sufficient for these minor roadways and driveways.**
- ❖ **Parking for the Active Adult residences should be provided using a minimum ratio of one parking space for seven houses, and a maximum of one parking space for every three houses.**

(Less Than Significant Impact.)



Source: Hart Howerton (2003)

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Bicycle and Pedestrian Facilities and Golf Cart Location Paths

OTHER PLANNING CONSIDERATIONS

Fehr & Peers also analyzed the project with respect to golf cart circulation and on-street parking. Each of these issues are discussed in detail below.

Golf Cart Access and Circulation

Exhibit 3.4-26 also illustrates the location of the Golf Cart path through the Vineyards at Marsh Creek Development. Residents of active adult development, such as the existing Summerset project, often utilize golf carts and similar vehicles for transportation. Golf carts provide mobility for short distance trips such as travel to recreational facilities.

As shown in the cross-sections on Exhibit 3.4-25, golf carts will be separated from vehicles on Fairview Avenue by a divided facility, thereby maximizing safety for golf cart users. Local streets have lower volumes and speeds than Fairview Avenue, therefore residents could safely operate golf carts on these other roadways.

Residential Parking Supply and Demand

The parking supply and demand for the project site was evaluated. Parking supply and demand analysis was limited to assessing the on-street parking requirements for the active adult residential component of the project.

The roadways will be 29' curb-to-curb within the active adult housing and will prohibit parking on the street, except for in parking spaces provided.

Based on this information, a parking survey was conducted of the existing Summerset communities. This parking survey included both automobiles and golf carts. The survey concluded that on-street parking (for both cars and golf carts) for active adult living developments be provided at a minimum of one space per seven houses, with a maximum of one space per three houses. As shown, this parking should be made available in on-street parking pockets. A copy of the complete parking survey is provided in Appendix D.11.



3.5 AIR QUALITY

Information in this Section is based primarily upon the *BAAQMD CEQA Guidelines*, prepared by the Bay Area Air Quality Management District (BAAQMD), April 1996 (as revised December 1999), Air Quality Data (California Air Resources Board 1998 through 2002) and the *Bay Area 2000 Clean Air Plan*. This Section focuses on potential short-term air quality impacts associated with construction activity, in addition to long-term local and regional air quality impacts associated with the proposed project (refer to Appendix E, *Air Quality Data*, for the results of the air emissions computer modeling).

3.5.1 ENVIRONMENTAL SETTING

San Francisco Bay Area Air Basin

The San Francisco Bay Area Air Quality Basin (Basin) topography is characterized by complex terrain consisting of coastal mountain ranges, inland valleys and bays. This complex terrain, especially the higher elevations, distorts the normal wind flow patterns in the Basin. The greatest distortion occurs when low-level inversions are present and the air beneath the inversion flows independently of air above the inversion, a condition that is common in the summer time.

The only major break in California's Coast Range occurs in the Bay Area. Here, the Coast Range splits into western and eastern ranges. Between the two ranges lies the San Francisco Bay. The gap in the western coast range is the Golden Gate and the gap in the eastern coast range is the Carquinez Strait. These gaps allow air to pass into and out of the Bay Area and the Central Valley.

During the summer, the large-scale meteorological condition that dominates the West Coast is a high semi-permanent, high-pressure cell centered over the northeastern Pacific Ocean. This high-pressure cell keeps storms from affecting the California coast. Hence, the Bay Area experiences little precipitation in the summer months. Winds tend to blow onshore out of the north/northwest.

The steady northwesterly flow induces upwelling of cold water from below. This upwelling produces a band of cold water off the California coast. When air approaches the California coast, already cool and moisture-laden from its journey over the Pacific Ocean, it is further cooled as it crosses this bank of cold water. The cooling often produces condensation resulting in a high occurrence of fog and stratus clouds along the Northern California coast in the summer.

Generally, in the winter, the Pacific high weakens and shifts southward. As a result, winds tend to flow offshore and upwelling ceases and storms occur. During the winter rainy periods, inversions (layers of warmer air over colder air) are weak or nonexistent, winds are usually moderate and air pollution is low. The Pacific high periodically becomes dominant, bringing strong inversions, light winds and high pollution potential.

The extent and severity of the air pollution problem in the Bay Area is a function of the area's natural physical characteristics (weather and topography), as well as man-made influences (development

patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall and topography all affect the accumulation and/or dispersion of pollutants throughout the Bay Area.

Climate

Summertime temperatures in the Basin are determined in large part by the effect of differential heating between land and water surfaces. Since land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the Central Valley and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of the cold ocean bottom water along the coast. Thus, on summer afternoons the temperatures at the coast can be 35 degrees cooler than temperatures 15 to 20 miles inland. At night this contrast usually decreases to less than 10 degrees.

In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large.

The Basin is characterized by moderately wet winters and dry summers. Winter rains account for approximately 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the Basin to another even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys. During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing are usually high and thus pollution levels tend to be low. However, frequent dry periods do occur during the winter where mixing and ventilation are low and pollutant levels build up.

Wind

During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately south of Mount Tamalpais, the northwesterly winds accelerate considerably and come directly from the west as they stream through the Golden Gate. The channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward Richmond and to the southwest toward San Jose when it meets the East Bay Hills.

Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate or the San Bruno gap. For example, the average wind speed at San Francisco Airport in July is approximately 17 knots, compared with only seven knots at San Jose and less than six knots at the Farallon Islands.

The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part upon the height and strength of the inversion. If the inversion is low and strong, and hence stable, the flow of the sea breeze will be inhibited and stagnant conditions are likely to result.

In the winter, the Basin frequently experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime airflow patterns; air moves from the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the Basin.

Sunlight

The frequency of hot, sunny days during the summer months in the Basin is another important factor that affects air pollution potential. Typically, ozone is formed at higher temperatures. In the presence of ultraviolet sunlight and warm temperatures, reactive organic gases (ROG) and nitrogen oxides (NO_x) react to form secondary photochemical pollutants, including ozone. Since temperatures in many of the Basin inland valleys are so much higher than near the coast, the inland areas are especially prone to photochemical air pollution.

In late fall and winter, solar angles are low, resulting in insufficient ultraviolet light and warming of the atmosphere to drive the photochemical reactions. Consequently, ozone concentrations do not reach significant levels in the Basin during these seasons.

Temperature Inversions

An inversion is a layer of warmer air over a layer of cooler air. Inversions affect air quality conditions significantly because they influence the mixing depth (i.e., the vertical depth in the atmosphere available for diluting air contaminants near the ground). The highest air pollutant concentrations in the Basin generally occur during inversions.

There are two types of inversions that occur regularly in the Basin. The frequent occurrence of elevated temperature inversions in summer and fall months acts to cap the mixing depth and consequently limit the depth of air available for dilution. Elevated inversions are caused by subsiding air from the subtropical high-pressure zone and from the cool marine air layer that is drawn into the Basin by the heated low-pressure region in the Central Valley.

Radiation inversions, typical of winter conditions, are formed as heat quickly radiates from the earth's surface after sunset, causing the air in contact with it to rapidly cool. Radiation inversions are strongest on clear, low-wind, cold winter nights, allowing the build-up of such pollutants as carbon monoxide and particulate matter. When wind speeds are low, there is little mechanical turbulence to mix the air, resulting in a layer of warm air over a layer of cooler air next to the ground. Urban areas usually have deeper minimum mixing layers because of heat island effects and increased surface roughness. During radiation inversions downwind transport is slow, the mixing depths are shallow and turbulence is minimal. All of these factors contribute to increased pollution levels near the ground.

Although each type of inversion is most common during a specific season, either inversion mechanism can occur at any time of the year. Sometimes both occur simultaneously. Moreover, the characteristics of an inversion often change throughout the course of a day. The terrain of the Basin also induces significant variations among subregions.

Ambient Air Quality Standards

Air Quality Standards

Ambient air quality is described in terms of compliance with Federal and State standards. Ambient air quality standards are the levels of air pollutant concentration considered safe to protect the public health and welfare. They are designed to protect people most sensitive to respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. National Ambient Air Quality Standards (NAAQS) were established by the United States Environmental Protection Agency (U.S. EPA) in 1971 for six air pollutants. States have the option of adding other pollutants, to require more stringent compliance, or to include different exposure periods. California Ambient Air Quality Standards (CAAQS) for these pollutants and NAAQS are included in Table 3.5-1, *Local Air Quality Levels*.

The California Air Resource Board (CARB) is required to designate areas of the State as attainment, non-attainment, or unclassified for any State standard. An “attainment” designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A “non-attainment” designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An “unclassified” designation signifies that the data does not support either an attainment or non-attainment status.

State and Federal ambient air quality standards have been established for the following pollutants: ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM₁₀) and lead (Pb). For most of these pollutants, the State standards are more stringent than the Federal standards. The above-mentioned pollutants are generally known as “criteria pollutants”. The State has also established ambient air quality standards for sulfates, hydrogen sulfide and vinyl chloride. Due to a historical decline in ambient levels, lead, hydrogen sulfide and vinyl chloride are not monitored by CARB or included as emissions in CARB’s air quality models.

The U.S. EPA in 1997 announced new ambient air quality standards for O₃ and PM₁₀. The new standards were intended to provide greater protection of public health. The U.S. EPA proposed to phase out the 1-hour O₃ standard and replace it with an 8-hour standard. With respect to PM₁₀, the U.S. EPA proposed a standard for the smaller particles, PM_{2.5}, or particulates less than 2.5 microns in diameter.

The PM_{2.5} standards included an annual standard and a 24-hour standard.¹ Following announcement of the new national standards, the BAAQMD began collecting monitoring data to determine the region’s attainment status with respect to the new standards.

¹ There are two new Federal PM_{2.5} standards: a 24-hour limit set at 65 micrograms per cubic meter (µg/m³) of ambient air and an annual average limit set at 15 µg/m³. The current PM₁₀ standards will be retained. Areas will be considered in attainment for the annual PM_{2.5} standard when the three-year average of the annual arithmetic mean is equal to or less than 15µg/m³. For the new 24-hour standard, attainment will be based on the 98th percentile of PM_{2.5} concentrations for each year, averaged over three years, to help compensate for any high concentrations that may be due to unusual meteorological conditions.

**TABLE 3.5-1
LOCAL AIR QUALITY LEVELS**

Pollutant	California Standard	Federal Primary Standard	Year	Maximum ⁴ Concentration	Days (Samples) State/Federal Std. Exceeded
Sulfur Dioxide (SO ₂)	0.25 ppm for 1 hour	0.14 ppm for 24 hours or 0.03 ppm annual arithmetic mean	1998 ¹	0.009 ppm	0/0
			1999 ¹	0.008	0/0
			2000 ¹	0.008	0/0
			2001 ¹	0.008	0/0
			2002 ¹	0.009	0/0
Ozone (O ₃) (1-Hour)	0.09 ppm for 1 hour	0.12 ppm for 1 hour	1998 ²	0.146 ppm	21/6
			1999 ²	0.146	14/2
			2000 ³	0.152	7/1
			2001 ³	0.113	9/0
			2002 ³	0.160	7/2
Ozone (O ₃) (8-Hour)	NA	0.08ppm	1998 ²	0.110 ppm	NA/10
			1999 ²	0.116	NA/5
			2000 ³	0.114	NA/2
			2001 ³	0.087	NA/2
			2002 ³	0.106	NA/5
Carbon Monoxide (CO)	9.0 ppm for 8 hour	9.0 ppm for 8 hour	1998 ²	2.36 ppm	0/0
			1999 ²	2.91	0/0
			2000 ³	2.74	0/0
			2001 ³	3.19	0/0
			2002 ³	2.50	0/0
Nitrogen Dioxide (NO ₂)	0.25 ppm for 1 hour	0.053 ppm annual average	1998 ²	0.071 ppm	0/NA
			1999 ²	0.094	0/NA
			2000 ³	0.073	0/NA
			2001 ³	0.070	0/NA
			2002 ³	0.059	0/NA
Fine Particulate Matter (PM _{2.5}) ⁶	NA	65 µg/m ³ for 24 hours	1998 ²	NM	NM
			1999 ³	63.1µg/m ³	NA/0
			2000 ³	56.4	NA/0
			2001 ³	107.5	NA/1
			2002 ³	41.0	NA/0
Particulate Matter (PM ₁₀) ^{5,6}	50 µg/m ³ for 24 hours	150 µg/m ³ for 24 hours	1998 ²	NM	NM
			1999 ³	27.5µg/m ³	0/0
			2000 ³	71.2	2/0
			2001 ³	108.9	3/0
			2002 ³	48.6	0/0

ppm = parts per million PM₁₀ = particulate matter 10 microns in diameter or less PM_{2.5} = particulate matter 2.5 microns in diameter or less; µg/m³ = micrograms per cubic meter

1. Data is based on measurements taken at the Bethel Island monitoring station located at 5551 Bethel Island Road, Bethel Island, California, approximately 10.5 miles northeast of the project site.
2. Data is based on measurements taken at the Old 1st Street monitoring station located at 2614 Old 1st Street, Livermore, California, approximately 20.4 miles south of the project site.
3. Data is based on measurements taken at the 793 Rincon Avenue monitoring station located at 793 Rincon Avenue, Livermore, California, approximately 21.6 miles south of the project site.
4. Maximum concentration is measured over the same period as the California Standard.
5. PM₁₀ exceedances are based on state thresholds established prior to amendments adopted on June 20, 2002.
6. PM₁₀ and PM_{2.5} exceedances are derived from the number of samples exceeded, not days.

Source: California Air Resources Board, *ADAM Air Quality data Statistics*, <http://www.arb.ca.gov/adam/welcome.html>

Attainment Status

In August 1998, the Basin was redesignated to nonattainment-unclassified for the national 1-hour O₃ standard. Additionally, the Basin is classified as nonattainment under the California 1-hour O₃ standard. In April 1998, the Basin was redesignated to attainment for the national 8-hour CO standard. In June 2002, CARB established new annual standards for PM_{2.5} and PM₁₀. Subsequently, the Basin was determined to be in nonattainment under the State standard and the national attainment levels will not be determined until monitoring is completed after 2003.²

Local Ambient Air Quality

The BAAQMD operates several air quality monitoring stations within the Basin. There are three monitoring stations that monitor the air quality in the vicinity of the proposed project area. Two monitoring stations are located within the city of Livermore and one station is located on Bethel Island. These monitoring stations represent climatic conditions similar to those experienced at the project site. The following air quality information briefly describes the various types of pollutants monitored at the stations.

Ozone (O₃)

O₃ is a colorless toxic gas that can irritate the lungs and damage materials and vegetation. Because O₃ formation is the result of photochemical reactions between NO_x and reactive organic compounds (ROC), typically produced by combustion sources, peak concentrations of O₃ occur downwind of precursor emission sources. The entire Basin is designated as a non-attainment area for State and Federal standards. At the three local monitoring stations; the one-hour State O₃ standard was exceeded 58 times from 1998 through 2002. The one-hour Federal O₃ standard was exceeded a total of 11 times between 1998 and 2002. The 8-hour Federal O₃ standard was exceeded 24 times between 1998 and 2002.

Carbon Monoxide (CO)

CO is an odorless, colorless, toxic gas, produced almost entirely from combustion sources (automobiles). This pollutant interferes with the transfer of oxygen to the brain and is generally associated with areas of high traffic density. The Basin is designated as an attainment area for State CO standards and Federal CO standards. The Federal and State CO standards have not been exceeded at the Livermore monitoring stations in the last five years.

Nitrogen Oxides (NO₂; NO_x)

Nitrogen oxides (NO_x), the term used to describe the sum of nitrogen oxide (NO), nitrogen dioxide (NO₂), and other oxides of nitrogen, are produced by high-temperature combustion processes (e.g., motor vehicle engines, power plants, refineries, and other industrial operations).³ NO₂, a term often used interchangeably with NO_x, is a reddish-brown gas that can cause breathing difficulties at high levels. The entire Basin is designated as an attainment area for State and Federal NO₂ standards. The NO₂ standard was not exceeded at the Livermore monitoring stations over the last five years.

² Per phone conversation with Bill Norton, Interim Executive Officer, January 24, 2003.

³ Environmental Protection Agency Website, www.epa.gov/oar/aqtrnd97/brochure/no2.html.

Particulate Matter (PM₁₀)

PM₁₀ includes particulate matter 10 microns or less in diameter (a micron is one millionth of a meter). Particulates substantially reduce visibility and adversely affect the respiratory tract. Sources of PM₁₀ include agricultural operations, industrial processes, combustion of fossil fuels, construction and demolition and windblown dust and wildfires. Following the announcement of the new national standards, the BAAQMD began collecting monitoring data to determine the region's attainment status with respect to the new standards. On June 20, 2002, CARB adopted amendments for statewide annual ambient particulate matter air quality standards. The ambient annual PM₁₀ standard was lowered from 30 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to 20 $\mu\text{g}/\text{m}^3$. A 24-hour average standard for both PM₁₀ and PM_{2.5} were retained. These standards were revised/established due to increasing concerns by CARB that previous standards were inadequate, as almost everyone in California is exposed to levels at or above the current State PM₁₀ standards during some parts of the year, and the statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide-ranging.⁴ The Basin is designated as a nonattainment area for State PM₁₀ standards and unclassified for National PM₁₀ standards, pending further monitoring data. The State standards for PM₁₀ were exceeded twice in 2000 and three times in 2001.

Fine Particulate Matter (PM_{2.5})

Due to recent increased concerns over health impacts due to fine particulate matter, both State and Federal PM_{2.5} [particulate matter 2.5 microns or less in diameter] standards have been created. Particulate matter impacts primarily affect infants, children, the elderly, and those with pre-existing cardiopulmonary disease. In 1997, the U.S. EPA announced new PM_{2.5} standards. Industry groups challenged the new standard in court and the implementation of the standard was blocked. However, upon appeal by the U.S. EPA, the U.S. Supreme Court reversed this decision and upheld the U.S. EPA's new standards. A new annual standard was established at 12 $\mu\text{g}/\text{m}^3$. Beginning in 2002, based on three years of monitoring data, the U.S. EPA will designate areas as non-attainment that do not meet the new PM_{2.5} standards.⁵ To date, the U.S. EPA has not released the PM_{2.5} attainment designations. Since State standards for PM_{2.5} did not exist during the monitoring period of 1998 through 2002, there is no data to determine the number of days the State standards was exceeded. However, the National PM_{2.5} standard was exceeded once in 2001.

Sulfur Dioxide (SO₂; SO_x) and Lead (Pb)

Sulfur dioxide (SO₂), often used interchangeably with sulfur oxides (SO_x), and lead (Pb) levels in all areas of the Air Basin do not exceed Federal or State standards. The Basin is designated as attainment for both State and Federal SO₂ standards. There is no NAAQS for lead. The Bethel Island Monitoring Station did not exceed State standards for SO_x during the last five years.

Toxic Air Contaminants (TAC's)

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern in California. There are many different types of TACs, with varying degrees

⁴ Staff Report: Public Hearing to Consider Amendments to the Ambient Air Quality Standards for Particulate Matter and Sulfates. California Environmental Protection Agency, Air Resources Board, May 3, 2002.

⁵ Environmental Protection Agency Website, <http://www.epa.gov/air/aqtrnd97/brochure/pm10.html>

of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as accidental releases of hazardous materials during upset conditions. Health effects of TACs include eye irritation, lung irritation, cancer, birth defects, neurological damage and death.

California regulates TACs through its Air Toxics Program, mandated in Chapter 3.5 - Toxic Air Contaminants of the Health and Safety Code (H&SC Section 39660 et. seq.) and Part 6 - Air Toxics "Hot Spots" Information and Assessment (H&SC Section 44300 et. seq.).

CARB is working in conjunction with the Office of Environmental Health Hazard Assessment (OEHHA), in order to identify potential sources of TACs. Air toxic control measures may then be adopted to reduce ambient concentrations of the identified toxic air contaminant below a specific threshold based on its effects on health, or to the lowest concentration achievable through use of best available control technology for toxics (T-BACT). The program is administered by CARB. Air quality control agencies, including the BAAQMD, must incorporate air toxic control measures into their regulatory programs or adopt equally stringent control measures as rules within six months of adoption by CARB.

The regulatory approach used in controlling TAC levels relies on a quantitative risk assessment process rather than on ambient air conditions to determine allowable emissions from stationary sources. In addition, for carcinogenic air pollutants, there is no safe concentration in the atmosphere. Local concentrations can pose a significant health risk and are termed "toxic hot spots."

Diesel exhaust is a growing concern in the Basin area and throughout California. The CARB in 1998 identified diesel engine particulate matter as a TAC. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Many of these toxic compounds adhere to the particles in the exhaust and because diesel particles are very small, they penetrate deeply into the lungs. Diesel engine particulate matter has been identified as a human carcinogen.⁶ Mobile sources (including trucks, buses, automobiles, trains, ships and farm equipment) are by far the largest source of diesel emissions. Studies show that diesel particulate matter concentrations are much higher near heavily traveled highways and intersections. The cancer risk from exposure to diesel exhaust may be much higher than the risk associated with any other toxic air pollutant routinely measured in the region

Prior to the listing of diesel exhaust as a TAC, California had already adopted various regulations that would reduce diesel emissions. These regulations include new standards for diesel fuel, emission standards for new diesel trucks, buses, autos and utility equipment and inspection and maintenance requirements for heavy-duty vehicles. Following the listing of diesel engine particulate matter as a TAC, the CARB is currently evaluating what additional regulatory action is needed to reduce public exposure. The CARB does not plan on banning diesel fuel or engines, however, it may consider additional requirements for diesel fuel and engines, as well as other measures to reduce public exposure.

⁶ *BAAQMD CEQA Guidelines, Assessing the Air Quality Impacts of Projects and Plans*, Bay Area Air Quality Management District, Revised December 1999, page 6.

Odors

While offensive odors rarely cause any physical harm, they still can be unpleasant, leading to citizen complaints to local government and BAAQMD. Any project that would expose members of the public to excessive levels of objectionable odors could potentially be deemed to have a significant impact.

Some occasional odors exist in the vicinity of the Vineyards project and Annexation sites. The source of the occasional odors is from the release of natural gas from the PG&E station (i.e., Brentwood Terminal). The Brentwood Terminal is a transmission station for natural gas. While natural gas on its own is odorless, sulfur-based odorant is added to the gas as a safety measure to permit detection of natural gas leaks (PG&E, 1995). The Brentwood Terminal routinely releases natural gas through pressure relief valves to avoid substantial buildup of pressure in underground natural gas lines.

Regulatory Framework

Federal Clean Air Act (CAA)

The 1970 Clean Air Act (CAA) authorized the establishment of the NAAQS and set deadlines for their attainment. The Federal Clean Air Act Amendments (FCAAA) of 1990 made major changes in deadlines for attaining NAAQS and in the actions required of areas of the nation that exceeded these standards.

California Clean Air Act (CCAA)

The 1988 California Clean Air Act (CCAA) requires that all air districts in the State work to achieve and maintain CAAQS for O₃, CO, SO₂, and NO₂ by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources. The FCAAA also gives districts new authority to regulate indirect sources. Each district plan is to achieve a five percent annual reduction (averaged over consecutive three-year periods) in district-wide emissions of each non-attainment pollutant or its precursors.

The Bay Area 2000 Clean Air Plan (CAP)

The CARB has established a state, health-based, air quality standard for ozone. Under the CCAA, areas not in compliance with this standard must prepare an ozone reduction plan. All major metropolitan areas within the State of California, including the Bay Area, must comply with this standard and therefore must submit an attainment plan every three years. Pursuant to the CCAA and subsequent amendments, the BAAQMD prepared the Bay Area 2000 Clean Air Plan (CAP) for adoption by the Board on December 20, 2000. The main objective of the CAP is to reduce emissions of certain air pollutants that lead to the formation of ozone, or “smog”, in the lower atmosphere. Other air quality issues are included in this plan for informational purposes. The CAP represents a comprehensive strategy to reduce ozone emissions from area and mobile sources. The CAP includes specific measures that encourage cities and counties to develop and implement local plans, policies and programs to reduce auto use and improve air quality.

Under the CCAA nonattainment classifications, the Bay Area is classified as a “serious” air basin for O₃.⁷ The Bay Area has several monitoring stations to measure and record ambient air quality. Ambient ozone levels meet state and national standards 99% of the time, however, since the Bay Area is considered a non-attainment zone, air quality improvement measures are required. Since the passage of the CCAA in 1988, the Bay Area peak concentrations of ozone decreased an average of 1.2 percent per year.

Sensitive Receptors

Land uses considered to be sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Sensitive populations (i.e., children, senior citizens and acutely or chronically ill people) are more susceptible to the effects of air pollution, especially localized sources of toxics and CO, than are the general population. Sensitive receptors were identified in the vicinity of the project site. Table 3.5-2, *Sensitive Receptors*, includes land uses in the vicinity of the proposed project area that would be considered sensitive receptors.

Land Use	Description/Name	Approximate Distance (Miles)	Direction
Residential	Single-family residential	0.5 –2.0	North, East
Schools	Nunn (Ron) Elementary School	1.25	North
	Bristow (William B.) Middle School	2.0	Northeast
Parks	Creekside Park	0.75	North

Sources: <http://maps.yahoo.com>
<http://www.mapquest.com>
Contra Costa County, The Thomas Guide, pg. 616, 2002.

3.3.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in a significant impact on the environment. An EIR is required to focus on these effects and offer mitigation measures to avoid or substantially lessen any significant impacts, which may be identified. The criteria, or standards, used to determine the significance of impacts may vary depending on the nature of the project.

Thresholds of Significance

Air quality impacts resulting from the implementation of the proposed project would be considered significant if they cause any of the following to occur:

⁷ The State classification system for nonattainment areas uses the designations moderate, serious, severe, and extreme.

- ❖ Conflict with or obstruct implementation of the applicable air quality plan;
- ❖ Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- ❖ 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);
- ❖ Exposes sensitive receptors to substantial pollutant concentrations; and
- ❖ Create objectionable odors affecting a substantial number of people.

The BAAQMD *CEQA Guidelines* establishes thresholds for pollutant emissions generated both during and following construction. Buildout of the proposed project would be required to implement control measures during construction activities in order to reduce the amount of emissions to below the significance thresholds, when possible. Per the BAAQMD, the determination of significance with respect to construction emissions should be based upon the consideration of control measures to be implemented. From the BAAQMD’s perspective, the quantification of construction emissions is not necessary. If all of the suggested control measures are implemented (as appropriate, depending on Project size), then air pollutant emissions from construction activities will be considered less than significant (refer to Table 3.5-3, *Feasible Control Measures for Construction Emissions of PM₁₀*).

TABLE 3.5-3 FEASIBLE CONTROL MEASURES FOR CONSTRUCTION EMISSIONS OF PM₁₀
Basic Control Measures – The following controls should be implemented at all sites.
Water all active construction areas at least once daily.
Cover all trucks hauling soil, sand, and any other loose materials <i>or</i> require all trucks to maintain at least two feet of freeboard.
Pave, apply water at least three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
Sweep streets daily (with water sweepers) if visible soil material is carried onto public streets.
Enhanced Control Measures – The following measures should be implemented at construction sites greater than four acres in area.
All “Basic” control measures listed above.
Hydroseed or apply (non-toxic) soil stabilizers to inactive areas (previously graded areas inactive for ten days or more).
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.

**TABLE 3.5-3
FEASIBLE CONTROL MEASURES FOR CONSTRUCTION EMISSIONS OF PM₁₀**

Optional Control Measures – The following control measures are strongly encouraged at construction sites that are large in area, located near sensitive receptors or which for any other reason may warrant additional emissions reductions.
Install wheel washers for all exiting trucks, or wash off the tires or racks of all trucks and equipment leaving the site.
Install windbreaks, or plant trees/vegetative windbreaks at windward side(s) of construction sites.
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.
Source: <i>BAAQMD CEQA Guidelines</i> , Table 2 – Feasible Control Measures for Construction Emissions of PM ₁₀ , page 15.

In order to determine whether a project has the potential to obstruct implementation of the CAP, or contribute substantially to the violation of an air quality standard, BAAQMD has established thresholds of significance for operational emissions. BAAQMD operational thresholds are indicated in Table 3.5-4, *BAAQMD Thresholds of Significance for Project Operations*. Per the BAAQMD, any project that would generate emissions in excess of the quantities defined in Table 3.5-4 would have a significant air quality impact. Additionally, a project contributing to CO concentrations exceeding the State Ambient Air Quality Standard of 9 parts per million (ppm) averaged over 8 hours and 20 ppm for 1 hour would be considered to create a significant impact.

**TABLE 3.5-4
BAAQMD THRESHOLDS OF SIGNIFICANCE FOR PROJECT OPERATIONS**

Pollutant	Ton/year	Pounds/day
Reactive Organic Gases (ROG)	15	80
Oxides of Nitrogen (NOx)	15	80
Particulate Matter (PM ₁₀)	15	80
Source: <i>BAAQMD CEQA Guidelines</i> , Table 3 – Thresholds of Significance for Project Operations, page 16.		

IMPACT 3.5-A. Short-Term Air Quality Impacts – Vineyards Project: Development of the proposed project may result in temporary construction related air quality impacts. Implementation of BAAQMD’s recommended control measures for construction emissions would reduce impacts to less than significant levels. (Potentially Significant Impact).

Construction-related emissions are generally short-term in duration, but may still cause adverse air quality impacts. Fine particulate matter (PM₁₀) is the pollutant of greatest concern with respect to construction activities. PM₁₀ emissions can result from a variety of construction activities, including excavation, grading, demolition, vehicle travel on paved and unpaved surfaces, and vehicle and equipment exhaust. Construction-related emissions can cause substantial increases in localized concentrations of PM₁₀. Particulate emissions from construction activities can lead to adverse health effects, as well as concerns such as reduced visibility and soiling of exposed surfaces. Construction emissions of PM₁₀ can vary greatly depending on the level of activity, the specific operations taking

place, the equipment being operated, local soils, weather conditions and other factors. Despite this variability in emissions, there are a number of feasible control measures that can be reasonably implemented to significantly reduce PM₁₀ emissions from construction.

The BAAQMD approach to CEQA analysis of construction impacts is to emphasize implementation of effective and comprehensive control measures rather than detailed quantification of emissions.

Generally, any type of construction can have significant impacts related to PM₁₀ emissions. However, if all of the PM₁₀ construction control measures are implemented, air pollutant emissions from construction activities are considered less than significant (refer to Table 3.5-3). If all of the appropriate measures are not implemented, then the residual construction impacts would be considered significant.

Based upon the size and scope of future projects under the Vineyards project, the mitigation measures listed below are recommended. With implementation of these mitigation measures, less than significant impacts would occur.

Mitigation 3.5-A.1 Short-Term Air Quality Impacts – Vineyards Project: All new development shall implement the following control measures at all construction sites:

- ❖ Water all grading and construction areas at least twice daily.
- ❖ Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least two feet of freeboard.
- ❖ Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at grading and construction sites.
- ❖ Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
- ❖ Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.

Mitigation 3.5-A.2 Short-Term Air Quality Impacts – Vineyards Project: Development of sites greater than four acres shall implement the following control measures:

- ❖ Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more).
- ❖ Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.)
- ❖ Limit traffic speeds on unpaved roads up 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. (Less Than Significant Impact).

IMPACT 3.5-B. Short-Term Air Quality Impacts – Annexation Sites: Future development of the Annexation Sites may eventually result in temporary construction related air quality impacts. Implementation of BAAQMD’s recommended control measures for construction emissions would reduce impacts to less than significant levels. (Potentially Significant Impact).

As discussed above, construction-related emissions are generally short-term in duration, but may still cause adverse air quality impacts. The BAAQMD approach to CEQA analysis of construction impacts is to emphasize implementation of effective and comprehensive control measures rather than detailed quantification of emissions.

Based upon the size and scope of future projects under the Annexation Sites, the mitigation measures listed below are recommended. With implementation of these mitigation measures, less than significant impacts would occur.

Mitigation 3.5-B.1 Short-Term Air Quality Impacts – Annexation Sites: All new development shall implement the following control measures at all construction sites:

- ❖ Water all grading and construction areas at least twice daily.
- ❖ Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least two feet of freeboard.
- ❖ Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
- ❖ Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at grading and construction sites.
- ❖ Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.

Mitigation 3.5-B.2 Short-Term Air Quality Impacts – Annexation Sites: Development of sites greater than four acres shall implement the following measures:

- ❖ Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more).
- ❖ Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.)
- ❖ Limit traffic speeds on unpaved roads up 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.

(Less Than Significant Impact).

IMPACT 3.5-C. Plan Consistency Impacts – Vineyards Project: Development of the proposed Vineyards project would be consistent with applicable air quality plans and policies. (Less Than Significant Impact).

Pursuant to the BAAQMD's CEQA Guidelines, when a City adopts a general plan, it evaluates whether the plan is consistent with regional plans and policies affecting air quality. Thus, the EIR for the City of Brentwood's General Plan Update evaluated the three criteria recommended by the BAAQMD CEQA Guidelines in order to determine whether a local plan is consistent with the BAAQMD's most recent Clean Air Plan (CAP):

- ❖ *Consistency with the CAP Population and Vehicle Miles Traveled (VMT) Assumptions.* Plans must show over the planning period of the plan that:
 - Population growth for the jurisdiction will not exceed the values included in the current CAP,⁸ and
 - The rate of increase in VMT for the jurisdiction is equal to or lower than the rate of increase in population.
- ❖ *Consistency with the CAP Clean Air Plan Transportation Control Measures (TCMs).* Plans must demonstrate reasonable efforts to implement the CAP's transportation control measures.
- ❖ *Local Plans' Impacts Associated With Odors and Toxics.* Buffer zones to avoid identified odors and toxic impacts must be reflected in plans' land use maps and implementing ordinances.

The 2001 EIR for the City of Brentwood General Plan Update concluded that, with mitigation, implementation of the City's General Plan would not cause population growth that would exceed the values used for air quality purposes in the 2000 CAP. While the General Plan Update anticipates more growth in Brentwood than the projections used for the 2000 CAP, buildout of the General Plan is not expected to occur until after 2020. The City adopted the following mitigation measure to ensure that the population assumptions included in the CAP will not be exceeded during the time period covered by the CAP:

- ❖ AQ-2.1: *Amend Growth Management Policies.* Adopt more stringent growth management policies that have the effect of restricting or slowing population growth to the levels assumed in the Clean Air Plan (which relies on ABAG *Projections 98*). For example, one proactive step would be metering the number of new dwelling units approved per year.

The 2001 EIR for the General Plan Update concluded that the policies in the General Plan Update would therefore reduce vehicle trips and vehicle miles traveled;

- ❖ With mitigation, the General Plan Update is consistent with the CAP's transportation control measures; and

⁸ State of California, Department of Finance, *E-5 City/County Population and Housing Estimates, 2003, Revised 2002 and Revised 2001, with 2000 DRU Benchmark*. Sacramento, California, May 2003.

- ❖ With mitigation, buffer zones would protect sensitive receptors from potential sources of odors, dust from agricultural users, and stationary sources of toxic air contaminants.

The proposed General Plan Amendment and other approvals for the Vineyards project would not cause the City's General Plan to become inconsistent with the CAP.

Population and Vehicle Miles Traveled (VMT) Assumptions

The proposed project would increase the population of the City through the construction of new housing units. The proposed project would result in the construction of up to 1,600 new residential units and a 200,000 square foot congregate care facility. Approximately 1,100 of the units would be for active adults and 150 would be apartments for seniors. It is assumed that the average household size for these units would be approximately 1.89 persons per unit (City of Brentwood, 2001a). The remaining 350 units would include 150 executive lots and 200 multi-family units. It is assumed that the average household size for these units would be approximately 2.89 persons per unit (City of Brentwood, 2001a). It is also assumed that the congregate care facility would house up to 1 person per 1,000 square feet (City of Brentwood, 2001a). Based on these assumptions, the proposed Vineyards project would generate a population of approximately 3,575 persons (refer to Table 3.3-2).

According to the Association of Bay Area Governments' (ABAG) Projections 2002, the City of Brentwood is projected to grow by approximately 30,015 persons between the years of 2000 and 2025. The proposed project would represent approximately 11.9 percent of the growth that would occur between 2000 and 2025. Therefore, the Vineyards project would result in population within the range of growth projected for the City by ABAG. Furthermore, the Vineyards project will not result in a greater population increase than is anticipated by the current General Plan.

The Vineyards project is not expected to cause a regional increase in vehicle miles traveled (VMT) that would exceed the regional increase in population. The 2001 RTP for the San Francisco Bay Area reports that Brentwood is projected to be one of the top ten population growth cities from 2000 to 2020 with a projected population growth of 27,400 persons.⁹ This represents a population increase of approximately 83 percent (based upon the current population of 33,021 persons). Meanwhile the 2001 RTP reports that average commute distance is projected to increase by 17.3 miles or approximately 11 percent from 1998 to 2025. Thus, the increase in population for the region is greater than the anticipated increase in VMT. In addition, the Vineyards project proposes development of a mixed-use community that would provide residential uses adjacent to commercial development, office development and recreational facilities including a winery and amphitheater. Currently, the average trip length for City residents for shopping is 5.33 miles, for working is 13.69 miles and for social/recreational activities is 6.33 miles.¹⁰ Since the Vineyards project would locate office uses, commercial uses and social/recreational uses within less than one mile of residential uses, average VMTs would be reduced.

⁹ ABAG Projections 2002.

¹⁰ Metropolitan Transportation Commission, Travel Forecasts for the San Francisco Bay Area 1990-2025, Auto Ownership, Trip Generation and Trip Distribution, May 2001.

Clean Air Plan Transportation Control Measures (TCMs)

The Vineyards project is consistent with the City of Brentwood's General Plan policies designed to implement transportation control measures (TCMs) pursuant to the CAP. Table 5, *CAP TCMs To Be Implemented By Local Government*, of the BAAQMD CEQA Guidelines includes seven TCMs in which local plans must demonstrate a reasonable effort to implement in order to be considered consistent with the regional air quality plan. Table 3.5-5, *City of Brentwood General Plan Consistency with BAAQMD CAP TCMs*, identifies the Brentwood General Plan (General Plan) policies that coordinate with the CAP TCMs. As Table 3.5-5 indicates and the EIR for the General Plan Update concludes, the General Plan includes policies from the Circulation Element, Land Use Element, Resource Management Element, Conservation and Open Space Element and the Transportation Plan in an effort to reduce air quality impacts. In this regard, the City has demonstrated a reasonable effort to implement TCMs.

Impacts Associated With Odors and Toxics

As explained previously, the EIR for the General Plan Update concluded that the City has policies that require a buffer between sensitive receptors and land uses that would emit odors and/or stationary sources of toxic air contaminants. Per the City of Brentwood General Plan and zoning ordinance, the following is a listing of applicable policy measures to control impacts associated with odors and toxics.

General Plan.

The following Land Use policies pertain to the siting of land uses, which could result in odors and/or toxic air contaminant impacts.

- Policy 1.1.6 Require new development to be contiguous to existing development, whenever possible.
- Policy 2.1.1 Apply design standards regulating setbacks, landscaping, screening and architectural style to new residential development and rehabilitation projects.
- Policy 2.1.2 In order to protect the integrity of existing land use patterns and minimize the impacts on existing uses and residents, it shall be City Policy:
 - a) To locate lower residential densities adjacent to open space, areas of agricultural use and existing lower density residential areas;
 - c) To require buffer lots in new residential developments...
- Policy 4.1.1 Prohibit uses that have significant adverse impacts on the surrounding neighborhood.
- Policy 4.2.1 Provide General Plan classifications and zoning that allow the development and operation of smaller office complexes and industrial uses, and designate appropriate sites.
- Policy 4.3.3 Ensure that the development of business parks includes orderly land planning, high quality architectural and landscape design, integrated communication and technology infrastructure, building flexibility, and diverse amenities and environmental controls.

**TABLE 3.5-5
CITY OF BRENTWOOD GENERAL PLAN CONSISTENCY WITH BAAQMD CAP TCMs**

City of Brentwood General Plan Policies		
BAAQMD Recommended CAP Transportation Control Measures¹	Applicable Policy	
General Plan Element	Applicable Policy	
Support Voluntary Employer-Based Trip Reduction Programs	Circulation	<p>1.1.5 – Encourage transit providers to improve service by increasing the number of existing transit routes service frequencies and development of convenient rider shelters at bus stops. Encourage the use of park-n-ride lots and other transit incentives for Brentwood commuters. Support regional transit priorities focused on East Contra Costa County.</p> <p>2.1.2 – Promote conveniently located neighborhood complexes that provide housing and commercial services near employment centers and along transit corridors.</p> <p>3.3.2 – Discourage development that does not support alternative transportation modes and improve the jobs/housing balance in the Planning Area.</p>
	Conservation and Open Space	2.1.5 – Create residential areas in Brentwood that include innovative designs which are linked with bikeways and pedestrian trails, commercial centers and transit stops.
	Land Use	3.1.7 – Develop and maintain a continuous pedestrian, equestrian and bicycle trails networks to facilitate recreation and transportation that serves neighborhoods, employment centers, Downtown, schools and other institutions and minimized conflict between pedestrians, bicyclists, other non-motorized users and automobiles.
Improve Bicycle Access and Facilities	Growth Management	1.1.2 – Develop a complete, interconnected bicycle circulation system that facilitates commuter as well as recreational travel. Improve bicycle routes and access to and between major destinations. Ensure safe bicycle access to local schools.
	Circulation	2.1.6 – Design developments to include features that encourage walking, bicycling, and transit use. Design features shall include bus turnouts, transit shelters and benches, and pedestrian access points between subdivisions and between adjacent related land uses. 3.1.2 – Recognize the role of streets not only as vehicle routes but also as parts of a system of public spaces, with quality landscaping, street trees, and bicycle and pedestrian paths.
Improve Arterial Traffic Management	Land Use	1.1.5 – Strive for a jobs/housing balance ratio of 1.5 jobs for each household to encourage community self-sufficiency and reduce commute trips and associated air pollution. 1.3.1. – Encourage new development that is convenient to bus or future passenger rail transit lines in order to reduce automobile dependence.
		1.3.2 – Strongly encourage residential development in the City in a balanced and efficient pattern that reduces sprawl, preserves open space and creates convenient connections to other land uses.

**TABLE 3.5-5
CITY OF BRENTWOOD GENERAL PLAN CONSISTENCY WITH BAAQMD CAP TCMS**

BAAQMD Recommended CAP Transportation Control Measures ¹	City of Brentwood General Plan Policies
General Plan Element	Applicable Policy
Growth Management	<p>2.1.5 – Create residential areas in Brentwood that include innovative designs which are linked with bikeways and pedestrian trails, commercial centers and transit stops.</p> <p>3.1.2 – Encourage new development that is convenient to transit lines in order to reduce automobile reliance.</p> <p>3.1.8 – Strongly encourage the provision of convenient, frequent, dependable, efficient and demand-responsive schedules transit for the City’s residents.</p>
Circulation	<p>1.1.5 – Encourage transit providers to improve service by increasing the number of existing transit routes service frequencies and development of convenient rider shelters at bus stops. Encourage the use of park-n-ride lots and other transit incentives for Brentwood commuters. Support regional transit priorities focused on East Contra Costa County.</p> <p>1.1.6 – Maintain a transportation system, consistent with the City Truck Routes Map, that provides truck mobility to serve Brentwood commerce, and support infrastructure improvement to separate regional goods movement from local circulation.</p> <p>2.1.1. – Emphasize transit-oriented development, high-density and mixed land use patterns that promote transit and pedestrian travel.</p> <p>2.1.2 – Promote conveniently located neighborhood complexes that provide housing and commercial services near employment centers and along transit corridors.</p> <p>2.1.5 – Encourage growth to occur along existing transit corridors.</p> <p>2.1.6 – Design developments to include features that encourage walking, bicycling, and transit use. Design features shall include bus turnouts, transit shelters and benches, and pedestrian access points between subdivisions and between adjacent related land uses.</p>
Conservation and Open Space	<p>3.1.1 – Improve circulation in locations with high levels of congestion, but avoid major increases in street capacities unless necessary to remedy severe traffic congestion on major arterial corridors.</p> <p>3.1.3 – Maintain the existing and planned system of arterial and collector streets to discourage cut-through traffic while maintaining neighborhood connectivity. Where necessary, emphasize traffic management and calming techniques to control vehicle speeds on residential streets as well as collector streets with residential development.</p> <p>3.3.1 – Work with Contra Costa county and the Bay Area Air Quality Mangement District to implement programs aimed at improving regional air quality.</p>

**TABLE 3.5-5
CITY OF BRENTWOOD GENERAL PLAN CONSISTENCY WITH BAAQMD CAP TCMs**

City of Brentwood General Plan Policies		
General Plan Element	Applicable Policy	
BAAQMD Recommended CAP Transportation Control Measures¹	Land Use	<p>1.1.5 – Strive for a jobs/housing balance ratio of 1.5 jobs for each household to encourage community self-sufficiency and reduce commute trips and associated air pollution.</p> <p>3.1.6 – Strongly encourage residential development in the city in a balanced and efficient pattern that reduces sprawl, preserves open space and creates convenient connections to other land uses.</p> <p>3.1.8 – Strongly encourage the provision of convenient, frequent, dependable, efficient and demand-responsive schedules transit for the City’s residents.</p>
	Growth Management	<p>1.1.5 – Encourage transit providers to improve service by increasing the number of existing transit routes service frequencies and development of convenient rider shelters at bus stops. Encourage the use of park-n-ride lots and other transit incentives for Brentwood commuters. Support regional transit priorities focused on East Contra Costa County.</p>
	Circulation	<p>2.1.1. – Emphasize transit-oriented development, high-density and mixed land use patterns that promote transit and pedestrian travel.</p> <p>2.1.2 – Promote conveniently located neighborhood complexes that provide housing and commercial services near employment centers and along transit corridors.</p> <p>2.1.3 – Promote land-use patterns that maximize trip-linking opportunities by assembling uses that allow people to take care of a variety of daily needs.</p> <p>3.3.2 – Discourage development that does not support alternative transportation modes and improve the jobs/housing balance in the Planning Area.</p>
	Conservation and Open Space	<p>1.2.5 – Incorporate safe and direct pedestrian linkages in the design and development of residential areas to school sites, parks and community activity centers.</p>
	Land Use	<p>2.1.5 – Create residential areas in Brentwood that include innovative designs which are linked with bikeways and pedestrian trails, commercial centers and transit stops.</p>
	Community Design	<p>1.4.3 – Through design review, encourage sidewalks that are separated from the street by a tree planting area.</p> <p>1.4.4 – Review existing residential and collector street standards with the intent to minimize paving to encourage lower vehicle speeds and make residential and collector streets more pedestrian oriented.</p>
	Pedestrian Travel	

**TABLE 3.5-5
CITY OF BRENTWOOD GENERAL PLAN CONSISTENCY WITH BAAQMD CAP TCMs**

City of Brentwood General Plan Policies		
General Plan Element	Applicable Policy	
BAAQMD Recommended CAP Transportation Control Measures¹	Growth Management	<p>3.1.7 – Develop and maintain a continuous pedestrian, equestrian and bicycle trails networks to facilitate recreation and transportation that serves neighborhoods, employment centers, Downtown, schools and other institutions and minimized conflict between pedestrians, bicyclists, other non-motorized users and automobiles.</p> <p>1.1.3 – Develop a safe, convenient, continuous and interconnected pedestrian circulation system throughout the City. Ensure safe pedestrian access to all schools.</p> <p>2.1.1. – Emphasize transit-oriented development, high-density and mixed land use patterns that promote transit and pedestrian travel.</p>
	Circulation	<p>2.1.4 – Encourage pedestrian-oriented land use and urban design that can have a demonstrable effect on transportation choices.</p> <p>2.1.6 – Design developments to include features that encourage walking, bicycling, and transit use. Design features shall include bus turnouts, transit shelters and benches, and pedestrian access points between subdivisions and between adjacent related land uses.</p> <p>3.1.2 – Recognize the role of streets not only as vehicle routes but also as parts of a system of public spaces, with quality landscaping, street trees, and bicycle and pedestrian paths.</p>
Promote Traffic Calming Measures	Land Use	<p>1.1.5 – Strive for a jobs/housing balance ratio of 1.5 jobs for each household to encourage community self-sufficiency and reduce commute trips and associated air pollution.</p> <p>2.1.5 – Create residential areas in Brentwood that include innovative designs which are linked with bikeways and pedestrian trails, commercial centers and transit stops.</p>
	Community Design	<p>1.4.4 – Review existing residential and collector street standards with the intent to minimize paving to encourage lower vehicle speeds and make residential and collector streets more pedestrian oriented.</p> <p>1.5.3 – Transportation projects intended to meet or maintain Level of Service standards, to implement Action Plans for Regional Routes, and to provide mitigation for Intersections Subject to Findings of Special Circumstances, may be funded through use of Local Road Improvement and Maintenance Funds allocated by the Contra Costa Transportation Authority. In no case will revenue from this source replace private developer funding for transportation projects determined to be required for new development to meet or maintain existing standards.</p>
	Growth Management	

**TABLE 3.5-5
CITY OF BRENTWOOD GENERAL PLAN CONSISTENCY WITH BAAQMD CAP TCMs**

City of Brentwood General Plan Policies	
BAAQMD Recommended CAP Transportation Control Measures¹	Applicable Policy
General Plan Element	
	<p>1.5.4 – Capital projects sponsored by the City and necessary to maintain and improve traffic operations will be included in the five year Capital Improvements Program that is annually reviewed by the City Council. Funding sources for such projects as well as intended project phasing will be generally identified in the CIP.</p> <p>1.1.1 – Maintain a level of service standard of “D” or better throughout the vehicular street system.</p> <p>1.1.6 – Maintain a transportation system, consistent with the City Truck Routes Map, that provides truck mobility to serve Brentwood commerce, and support infrastructure improvement to separate regional goods movement from local circulation.</p> <p>3.1.1 – Improve circulation in locations with high levels of congestion, but avoid major increases in street capacities unless necessary to remedy severe traffic congestion on major arterial corridors.</p>
<p>Circulation</p>	
<p>Source: <i>CAP TCMs To Be Implemented By Local Government</i>, Table 5, of the BAAQMD CEQA Guidelines. City of Brentwood General Plan, City of Brentwood, November 1998.</p>	

The Land Use policies from the City’s General Plan prohibit the siting of obnoxious land uses adjacent to sensitive receptors. In this regard, the Vineyards project would be consistent with the above listed policies. The Vineyards project would include design standards regulating setbacks. In addition, the Vineyards project proposes development of residential, commercial and office uses, which would not emit excessive odors and/or stationary sources of toxic air contaminants. The new development would be consistent with the surrounding existing and proposed uses. Finally, all project designs and development would be subject to City review, which would ensure that the development would be orderly and of high quality architecture and landscape design. Environmental impacts, as a result of the Vineyards project, are assessed within this document and any additional environmental controls beyond the mitigation measures included in this EIR, would be included with the City’s Conditions of Approval for the project.

Zoning Ordinance

The following zoning policies pertain to the siting of land uses which could result in odors and/or toxic air contaminant impacts.

- Section 8.01.010 Potential concerns may include, but are not limited to, the noises, odors, dust, chemicals, smoke and hours of operation that may accompany agricultural operations.

- Section 8.08.090 All stoves and ranges shall be provided with metal hoods, ventilated with ventilator or a flue of adequate size arranged and maintained to carry off odors.

- Section 17.200.004(H)(2) No emission shall be permitted of odorous gases or other odorous matter in such quantities as to be readily detectable at the property line of the subject use.

- Section 17.451.005(H)(2) No emission shall be permitted of odorous gases or other odorous matter in such quantities as to be readily detectable at the property line of the subject use.

- Section 17.460.005(H)(2) No emission shall be permitted of odorous gases or other odorous matter in such quantities as to be readily detectable at the property line of the subject use.

- Section 17.466.005(A) No emission shall be permitted of odorous gases or other odorous matter in such quantities as to be readily detectable at the property line of the subject use.

- Section 17.474.005(H)(2) No emission shall be permitted of odorous gases or other odorous matter in such quantities as to be readily detectable at the property line of the subject use.

- Section 17.491.006(H)(2) No emission shall be permitted of odorous gases or other odorous matter in such quantities as to be readily detectable at the property line of the subject use.
- Section 17.493.006(H)(2) No emission shall be permitted of odorous gases or other odorous matter in such quantities as to be readily detectable at the property line of the subject use.
- Section 17.502.005(H)(2) No emission shall be permitted of odorous gases or other odorous matter in such quantities as to be readily detectable at the property line of the subject use.
- Section 17.503.005(H)(2) No emission shall be permitted of odorous gases or other odorous matter in such quantities as to be readily detectable at the property line of the subject use.
- Section 17.511.006(H)(2) No emission shall be permitted of odorous gases or other odorous matter in such quantities as to be readily detectable at the property line of the subject use.
- Section 17.820.009 If, in the opinion of the planning commission or zoning administrator, the proposed use may cause the emission of dangerous or objectionable noise, odors, lights, dust, smoke or vibrations, the board may refer the application for investigation and report to one or more expert consultants qualified to advise as to whether a proposed use will conform to general acceptable or applicable performance standards...

Additionally, the zoning ordinance prohibits the siting of land uses that would emit odors and/or stationary sources of toxic air contaminants adjacent to sensitive receptors. As discussed above, the Vineyards project does not propose the siting of obnoxious land uses adjacent to sensitive receptors. The Vineyards project would be required to comply with the above listed zoning requirements.

Analysis has shown that the Vineyards project is consistent with the goals and policies of the General Plan and that the General Plan is consistent with the CAP in regards to population and VMT assumptions, TCMs and impacts associated with odors and toxics. Therefore impacts regarding Plan Consistency would be less than significant.

Mitigation 3.5-C. Plan Consistency Impacts – Vineyards Project: The project would have a less than significant impact related to plan consistency; therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.5-D. Plan Consistency Impacts – Annexation Sites: Possible future development of the Annexation Sites would be consistent with applicable air quality plans and policies. (Less Than Significant Impact).

As discussed above, the City of Brentwood's General Plan Update EIR determined the General Plan is consistent with the applicable provisions of the most recent Clean Air Plan (CAP). The proposed General Plan Amendment and other approvals for the Annexation Sites would not cause the City's General Plan to become inconsistent with the Clean Air Plan.

Population and Vehicle Miles Traveled (VMT) Assumptions

Annexation of the site for renovation of the historic John Marsh Home is not anticipated to result in an increase in the permanent population. In addition, potential future development of a community college is not anticipated to result in a substantial increase in the permanent population as the Community College is anticipated to serve the local area with staff members coming from the City of Brentwood. Annexation of the two sites is anticipated to reduce the rate of VMT by locating park and recreational facilities and a community college near residential uses.

Clean Air Plan Transportation Control Measures (TCMs)

As illustrated in Table 3.5-5, *City of Brentwood General Plan Consistency with BAAQMD CAP TCMs*, the General Plan includes policies from the Circulation Element, Land Use Element, Resource Management Element, Conservation and Open Space Element and the Transportation Plan that reduce air quality impacts. The General Plan amendments for the Annexation Sites are consistent with the CAP TCMs.

Impacts Associated With Odors and Toxics

As discussed in Impact 3.5-C, the Land Use policies from the City's General Plan prohibit the siting of land uses that could emit excessive odors or air toxics adjacent to sensitive receptors. The potential future rehabilitation of the John Marsh Home and potential future development of a college would not emit excessive odors or be a potential stationary source of substantial quantities of toxic air contaminants.

Analysis has shown that the Annexation Sites would be consistent with the goals and policies of the General Plan and that the General Plan is consistent with the CAP in regards to population and VMT assumptions, TCMs and impacts associated with odors and toxics; therefore, less than significant impacts would occur in this regard.

Mitigation 3.5-D. Plan Consistency Impacts – Annexation Sites: The Annexation Sites would have a less than significant impact related to plan consistency, therefore no mitigation is required. (Less Than Significant Impact).

IMPACT 3.5-E. Operational Air Quality Impacts – Vineyards Project: Future area source and vehicular emissions under the proposed project would result in operational air quality impacts. Analysis shows that air emissions with buildout of the proposed project would exceed BAAQMD thresholds for ROG in the near-term (2007) and ROG and PM₁₀ emissions in the long-term (2025). (Potentially Significant Impact).

The Vineyards project would consist of a combination of housing and commercial property on 481 acres parcel. Land uses assumed to be developed within the Near-Term (2007) and Long-Term (2025) are described below.

Near-Term Vineyards Project Development (2007)

- ❖ 1,100 units of single-family active adult housing;
- ❖ 150 units of market rate single-family housing;
- ❖ 3,000 square feet of office (various types); and
- ❖ 7,000 square feet of retail uses (various types).

Long-Term Vineyards Project Development (2025)

- ❖ 1,100 units of single-family active adult housing;
- ❖ 150 units of market rate single family housing;
- ❖ 150 units of senior rental housing (multi-family);
- ❖ 200 units of market rate multi-family housing;
- ❖ 50,000 square feet of congregate care facilities (nursing homes);
- ❖ 150,000 square feet of assisted living facilities (150 units);
- ❖ 30,000 square feet of office (various types);
- ❖ 75,000 square feet of retail uses (various types);
- ❖ 40 room hotel with a convention center; and a
- ❖ 9,000 square foot winery/restaurant.

The BAAQMD establishes five criteria in order to measure operational air quality impacts, which include the following:

- ❖ Local Carbon Monoxide Concentrations;
- ❖ Regional Criteria Pollutant Emissions;
- ❖ Odors;
- ❖ Toxic Air Contaminants; and
- ❖ Accidental Releases/Acutely Hazardous Air Emissions.

Localized Carbon Monoxide Concentrations

The BAAQMD CEQA Guidelines recommend that localized carbon monoxide concentrations should be estimated for projects in which: 1) vehicle emissions of CO would exceed 550 pounds per day (lbs/day), 2) project traffic would impact intersections or roadway links operating at Level of Service (LOS) D, E or F or would cause LOS to decline to D, E, or F, or 3) project traffic would increase

traffic volumes on nearby roadways by 10 percent or more. A project contributing to CO concentrations exceeding the State Ambient Air Quality Standard of 9 ppm averaged over eight hours and 20 ppm for one hour would be considered to have a significant impact.

The first screening criterion for CO impacts is whether the proposed project vehicle emissions of CO exceed 550 lbs/day. Table 3.5-6, *Vineyards Project Vehicle Emissions of CO*, reveals the result of the URBEMIS 2002 modeling for winter conditions for both the near-term and the long-term (which includes the near-term development).¹¹ Table 3.5-6 shows that the near-term CO emissions for the Vineyards project would exceed the BAAQMD threshold of 550 lbs/day of CO emissions. However, as indicated in Table 3.5-6, CO emissions are anticipated to decrease by the year 2025. This is due to the extended buildout period and the anticipated technological advances in air emission controls for CO emissions.

TABLE 3.5-6 VINEYARDS PROJECT VEHICLE EMISSIONS OF CO	
Phase	CO Emissions
Near-term (2007)	749.8 lbs/day
Long-term (2025)	360.6 lbs/day
Source: Results are modeled with URBEMIS2002, utilizing land use data from Section 2.3, <i>Project Description</i> .	

The second screening criterion for CO emissions is whether the project traffic would impact intersections of roadway links operating at Level of Service (LOS) D, E or F or would cause LOS to decline to D, E or F. Results of the Project Traffic Study (refer to Appendix D, *Traffic Study*) reveal that project traffic would not reduce the LOS at any intersections of roadway links to D, E or F (that are not already operating at an LOS of D, E or F).

The final screening criteria for impacts regarding CO emissions is whether project traffic results in an increase of traffic volumes on nearby roadways by 10 percent or greater.¹⁶ Because traffic congestion is highest at intersections where vehicles queue and are subject to reduced speeds, higher concentrations of CO are typically produced at intersection locations. The intersections in which the Vineyards project would result in a greater than 10 percent traffic increase have been analyzed for the potential to create a CO hotspot.

The analysis provides a worst-case scenario. Intersection turning movements are based on data supplied by the Project Traffic Study. Because the a.m. peak hour results in higher intersection capacity utilization (ICU) (i.e., worse LOS) in all cases, the a.m. peak hour was used in the modeling process. The projected traffic volumes were then modeled using the CALINE4 dispersion model. The resultant values were then added to an ambient concentration. For the purposes of this analysis, the background CO concentration was 3.0 ppm, as referenced in the BAAQMD Guidelines.¹² Future ambient concentrations would be far lower than present levels based upon expected trends and advancing technologies.

¹¹ As prescribed by the BAAQMD CEQA Guidelines.

¹² BAAQMD CEQA Guidelines, Figure 3 – *One Hour CO Background Concentrations*.

Near-Term (2007)

The traffic study shows that the following intersections would increase by greater than 10 percent as a result of Vineyards project-related traffic in the near-term:

- ❖ John Muir Parkway/Balfour Road;
- ❖ John Muir Parkway/Fairview Avenue;
- ❖ Concord Avenue/Fairview Avenue;
- ❖ Walnut Boulevard/Concord Avenue;
- ❖ Marsh Creek Road/Fairview Avenue (College Driveway);
- ❖ Walnut Boulevard/Marsh Creek Road; and
- ❖ Sellers Avenue/Marsh Creek Road.

As shown in Table 3.5-7, *Near-Term (2007) CO Concentrations in the Project Area*, maximum year 2007 1-hour CO concentration with the Vineyards project is 4.7 ppm for the John Muir /Balfour Road intersection, which is below the State and Federal standards of 20 ppm and 35 ppm, respectively. Additionally, the maximum year 2007 8-hour CO concentration with the Vineyards project is 2.7 ppm for the same intersection, which is below the State and Federal standard of 9 ppm. Therefore, the Vineyards project would not result in adverse CO emissions.

**TABLE 3.5-7
NEAR-TERM (2007) CO CONCENTRATIONS IN THE PROJECT AREA**

Intersection	1-Hour CO at 10 Feet (ppm)		8-Hour CO at 10 Feet (ppm)	
	1-Hour Standard ²	Project	8-Hour Standard ³	Project
John Muir/Balfour	20 ppm	4.7	9 ppm	2.7
John Muir/Fairview	20 ppm	1.9	9 ppm	1.1
Concord/Fairview	20 ppm	2.1	9 ppm	1.2
Concord/Walnut	20 ppm	3.4	9 ppm	2.0
Marsh Creek/Fairview (College Driveway)	20 ppm	3.1	9 ppm	1.8
Walnut/Marsh Creek	20 ppm	4.2	9 ppm	2.4
Sellers/Marsh Creek	20 ppm	3.3	9 ppm	1.9

NOTE:

¹ As measured at a distance of 10 feet from the corner of the intersection predicting the highest value. Presented 1-hour CO concentrations include a background concentration of 3.0 ppm. Eight-hour concentrations are based on a persistence of 0.58 of the 1-hour concentration.

² The State 1-hour standard is 20 ppm. The Federal standard is 35 ppm. The most stringent standard is reflected in the Table.

³ The State 8-hour and Federal 8-hour standard is 9 ppm.

Source: CALINE4 Dispersion Model

Long-Term (2025)

The traffic study shows that the following intersections would increase by greater than 10 percent as a result of Vineyards project-related traffic in the long-term:

- ❖ Walnut Boulevard/Balfour Road;
- ❖ John Muir Parkway/Fairview Avenue;
- ❖ Concord Avenue/Fairview Avenue;
- ❖ Concord Avenue/Walnut Boulevard;
- ❖ Marsh Creek Road/Fairview Avenue (College Driveway);
- ❖ Walnut Boulevard/Marsh Creek Road;
- ❖ Walnut Boulevard/Vasco Road; and
- ❖ Marsh Creek Road/Camino Diablo Road.

As shown in Table 3.5-8, *Long-Term (2025) CO Concentrations in the Project Area*, maximum year 2025 1-hour CO concentration with the Vineyards project is 3.3 ppm for the Walnut Boulevard/Balfour Road intersection, which is below the State and Federal standards of 20 ppm and 35 ppm, respectively.

TABLE 3.5-8 LONG-TERM (2025) CO CONCENTRATIONS IN THE PROJECT AREA				
Intersection	1-Hour CO at 10 Feet (ppm)		8-Hour CO at 10 Feet (ppm)	
	1-Hour Standard²	Project	8-Hour Standard³	Project
Walnut/Balfour	20 ppm	3.3	9 ppm	1.9
John Muir/Fairview	20 ppm	3.0	9 ppm	1.7
Concord/Fairview	20 ppm	1.7	9 ppm	1.0
Concord/Walnut	20 ppm	3.0	9 ppm	1.7
Marsh Creek/Fairview (College Driveway)	20 ppm	3.1	9 ppm	1.8
Walnut/Marsh Creek	20 ppm	3.2	9 ppm	1.9
Walnut/Vasco	20 ppm	3.2	9 ppm	1.9
Marsh Creek/Marsh Creek	20 ppm	3.0	9 ppm	1.7
<p>NOTE:</p> <p>¹ As measured at a distance of 10 feet from the corner of the intersection predicting the highest value. Presented 1-hour CO concentrations include a background concentration of 3.0 ppm. Eight-hour concentrations are based on a persistence of 0.58 of the 1-hour concentration.</p> <p>² The State 1-hour standard is 20 ppm. The Federal standard is 35 ppm. The most stringent standard is reflected in the Table.</p> <p>³ The State 8-hour and Federal 8-hour standard is 9 ppm.</p>				
Source: CALINE4 Dispersion Model				

Additionally, the maximum year 2025 8-hour CO concentration with the Vineyards project is 1.9 ppm for the same intersection and including the Walnut Boulevard/Marsh Creek Road and Walnut Boulevard/Vasco Road intersections, which is below the State and Federal standard of 9 ppm. Therefore, the Vineyards project would not result in adverse CO emissions.

Regional Criteria Pollutant Operational Emissions

The BAAQMD establishes 80 lbs/day of ROG, NO_x and PM₁₀ as the emissions thresholds for project operations. Operational emissions include all emissions from motor vehicle use associated with the project and area source emissions. Emissions were calculated assuming the Vineyards project would be developed within two phases, as described below:

- ❖ Near-term (2007) – Near-term projects would include development of 1,100 single-family active adult housing units, 150 market rate single-family housing units, 3,000 square feet of office and 7,000 square feet of retail uses. Buildout is anticipated by 2007.
- ❖ Long-term (2025) – Operational emissions for long-term projects would include; 1,100 active adult living units, 150 market rate single-family residential units, 200 market rate multi-family residential units, 150 senior rental units, 150 assisted living facility units, 50,000 square feet of congregate care, 9,000 square foot winery/restaurant, 40 room hotel/convention center, 75,000 square feet of retail uses and 30,000 square feet of office uses. Buildout is anticipated by 2025.¹³

Vineyards project operational emissions have been estimated using the URBEMIS 2002 computer model (published by the CARB and based on the URBEMIS7G model). This model predicts ROG, NO_x, and PM₁₀ emissions from area source and motor vehicle emissions associated with new or modified land uses (refer to Appendix E, *Air Quality Data*, for model input values).

Area Source Emissions

Stationary source emissions would be generated from natural gas consumption, landscape fuels and consumer products (hairspray, cleaners, aerosol cans, etc.) with the development of the Vineyards project (referred to below as “area source emissions”). The primary use of natural gas by the proposed land uses would be for combustion to produce space heating, water heating and other miscellaneous heating or air conditioning. As shown in Table 3.5-9, *Area Source Emissions*, the proposed Vineyards project would not exceed BAAQMD thresholds in the near- or long-term.

Mobile Source Emissions

Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. ROG, NO_x, and PM₁₀ are all pollutants of regional concern (NO_x and ROG react with sunlight to form O₃ or photochemical smog, and PM₁₀ is readily transported by wind currents).

¹³ While buildout is anticipated by 2025, modeling assumed a buildout year of 2020 since URBEMIS2002 only models through year 2020.

**TABLE 3.5-9
AREA SOURCE EMISSIONS^{1,2}**

Phase	ROG	NO_x	PM₁₀
Near-term (2007)	47.3	15.2	0.1
Long-term (2025)	65.3	20.6	0.1
ROG = reactive organic gases NO _x = nitrogen oxides PM ₁₀ = fine particulate matter			
NOTE: 1 – Area Source emissions excludes the use of fireplaces and wood burning stoves. 2 – Based upon advancing technologies and the extended buildout period, future emissions are anticipated to decrease by 2025.			
Source: URBEMIS2002 Model			

Project trip generation rates were based on the *Project Traffic Study* (refer to Section 3.2, *Traffic /Circulation*, and Appendix D, *Traffic Study*). Table 3.5-10, *Vineyards Project Mobile Source Emissions*, presents anticipated mobile emissions for near-term and long-term development. Due to the extended buildout period and the anticipated technological advances in air emission controls, ROG and NO_x emissions are anticipated to decrease by 2025.

**TABLE 3.5-10
VINEYARDS PROJECT MOBILE SOURCE EMISSIONS¹**

Phase	ROG	NO_x	PM₁₀
<i>Near-term (2007)</i>	56.2	63.4	55.4
<i>Long-term (2025)</i>	31.8	32.8	133.7
ROG = reactive organic gases NO _x = nitrogen oxides PM ₁₀ = fine particulate matter			
1 – Based upon advancing technologies and the extended buildout period, future ROG and NO _x emissions are anticipated to decrease by 2025.			
Source: URBEMIS2002 Model			

**Total Vineyards Project Regional Criteria Pollutant Operational Emissions:
Area and Mobile Sources**

Due to the extended buildout period and the anticipated technological advances in air emission controls, ROG and NO_x emissions are anticipated to decrease by 2025. However, as shown in Table 3.5-11, *Vineyards Project Emissions*, the mobile source and area emissions associated with the Vineyards project would generate pollutant emissions in excess of BAAQMD thresholds. The Vineyards project would exceed ROG emissions in the near-term (2007) and ROG and PM₁₀ emissions in the long-term (2025). Although mitigation measures have been included to reduce the impacts of mobile emissions, implementation of the Vineyards project would result in significant and unavoidable impacts.

**TABLE 3.5-11
VINEYARDS PROJECT EMISSIONS²**

Project	ROG	NO_x	PM₁₀
<i>Near-term (2007)</i>			
Area Source ¹	47.3	15.2	0.1
Mobile Source	56.2	63.4	55.4
Total	103.5	78.6	55.5
BAAQMD Threshold	80	80	80
Is Threshold Exceeded? (Significance Impact)	YES	NO	NO
<i>Long-term (2025)</i>			
Area Source	65.3	20.6	0.1
Mobile Source	31.8	32.8	133.7
Total	97.1	53.4	133.8
BAAQMD Threshold	80	80	80
Is Threshold Exceeded? (Significance Impact)	YES	NO	YES
ROG = reactive organic gases NO _x = nitrogen oxides PM ₁₀ = fine particulate matter			
Notes:			
1 – Area Source emissions excludes the use of fireplaces and wood burning stoves.			
2 – Based upon advancing technologies and the extended buildout period, future emissions are anticipated to decrease by 2025.			
Source: URBEMIS2002 Model			

Odors

The proposed vineyards on the project site may require periodic (e.g., one to two times annually) application of sulfur, which is used most frequently as a fungicide for the control of powdery mildew. Sulfur can have a mild odor when applied that may last a few hours to a day or two, depending on wind velocity and direction. This odor may be considered slightly irritating but only occurs for a short duration after application of sulfur.

The City of Brentwood has a Right-to-Farm Ordinance (Brentwood Municipal Code, Title 8, Chapter 8.01) that was established to “...preserve, protect and encourage ongoing agricultural operations within the City and to promote a good neighbor policy by requiring notification to purchasers and users of property near agricultural operations of the inherent inconveniences associated with such operations.” Under the Right-to Farm Ordinance, the project applicant would be required to provide a disclosure statement informing any buyers within 2,000 feet of agricultural property that they may experience inconveniences or discomfort due to (but not limited to) “...noise, odors, fumes, dust, smoke, insects, operation of machinery (including aircraft) during any 24-hour period, storage and disposal of manure, and the application by spraying or otherwise of chemical fertilizers, solid amendments, seed herbicides and pesticides.” Moreover, the City’s Right-to-Farm Ordinance requires the City to include a condition of approval that the owner(s) seeking land use entitlements – as with

the Vineyards project – sign and record the disclosure statement in a final form approved by the City’s Community Development Department. The signed disclosure statement would run with the land.

An additional source of odor within the project vicinity is the PG & E facility, which includes pipelines with natural gas. Natural gas, which is both odorless and colorless, is injected with mercaptan (an odor similar to rotten eggs) to provide odor for safety reasons. Scheduled purges of the company's natural gas pipelines would be conducted once to twice a year, which would release small amounts of the natural gas containing mercaptan. While, normally the odor from the natural gas would easily dissipate, low barometric pressure and low wind velocity may cause the release of natural gas odor to dissipate more slowly than normal. However, because these events are so infrequent, and under only certain meteorological circumstances would the natural gas odor be detected by the nearby sensitive receptors, this impact is less than significant.

Finally, the BAAQMD identifies ten potential odor sources that may cause odor impacts if sensitive receptors are located within a one- to two-mile radius, including; wastewater treatment plant, sanitary landfill, transfer station, composting facility, petroleum refinery, asphalt batch plant, chemical manufacturing, fiberglass manufacturing, painting/coating operations (e.g., auto body shops), rendering plant and coffee roaster. The Vineyards project is not located within a one- to two-mile radius of any of these facilities and does not include development of any of these types of facilities. Thus, impacts in this regard are less than significant.

Toxic Air Contaminants (TACs)

Any project with the potential to expose sensitive receptors (including residential areas) or the general public to substantial levels of TACs would be deemed to have a significant impact. However, the Vineyards project does not include industrial processes such as petroleum refining and chrome plating operations, which are primary sources of TACs. In addition, the Vineyards project does not include locating sensitive receptors (residential uses) near TAC producing facilities.

Benzene and 1,3-butadiene from gasoline and diesel particulates are the toxic pollutants emitted in appreciable quantities from mobile source exhaust. Benzene and butadiene emissions are components of ROGs while the carcinogenic portion of diesel exhaust can be found in PM₁₀. As discussed earlier, in order to ensure mobile sources of TACs do not pose a health risk, CARB requires the use of best available control technology for toxics (T-BACT). These regulations include new standards for diesel fuel, emission standards for new diesel trucks, buses, autos and utility equipment and inspection and maintenance requirements for heavy-duty vehicles. In addition, CARB is currently evaluating what additional regulatory action may be utilized to reduce public exposure, including establishing additional requirements for diesel fuel and engines. The Vineyards project and construction equipment must comply with all CARB requirements utilizing T-BACT techniques, which would reduce mobile sources of TACs to a less than significant level.

Accidental Releases/Acutely Hazardous Air Emissions

The Vineyards project proposes to construct residential, commercial, institutional, retail and business park uses on the project site. Therefore, implementation of the Vineyards project would not leave behind or require the removal of significant quantities of hazardous materials. Additionally, the Vineyards project would not result in impacts in this regard as residential, commercial and business

park uses generally do not use large quantities of hazardous materials. Therefore, there would not be any significant health threats to the community or any releases of hazardous materials into the environment from the proposed facilities. Thus, implementation of the Vineyards project would not pose any potential health hazards in this regard.

Mitigation 3.5-E.1 Operational Air Quality Impacts – Vineyards Project: The following measures shall be implemented in order to reduce motor vehicle emissions from commercial and/or institutional uses:

- ❖ Construct transit facilities such as bus turnouts/bus bulbs, benches, shelters, etc;
- ❖ At office buildings, provide preferential parking (e.g., near building entrance, sheltered area, etc.) for carpool and vanpool vehicles;
- ❖ Provide secure, weather-protected bicycle parking for employees in the commercial area;
- ❖ Provide electric vehicle charging stations at the recreation center and commercial center;
- ❖ Provide safe, direct access for bicyclists to adjacent bicycle routes;
- ❖ Provide short-term bicycle parking for retail customers and other non-commute trips; and
- ❖ Provide direct, safe, attractive pedestrian access from the project area to transit stops and adjacent development.

Mitigation 3.5-E.2 Operational Air Quality Impacts – Vineyards Project: The following measures shall be implemented in order to reduce motor vehicle emissions from residential uses:

- ❖ Provide bicycle lanes and/or paths, connected to community-wide network;
- ❖ Provide sidewalks and/or paths, connected to adjacent land uses, transit stops, and/or community-wide network.

(Significant and Unavoidable Impact).

IMPACT 3.5-F. Operational Air Quality Impacts – Annexation Sites: Potential future development of the Annexation Sites may result in operational air quality impacts. Air emissions would not exceed BAAQMD thresholds. (Less Than Significant Impact).

Local Carbon Monoxide Concentrations

The first screening criterion for CO impacts is whether the project vehicle emissions of CO exceed 550 lbs/day. URBEMIS 2002 modeling for winter conditions shows that future development of the Annexation Sites could result in 204.7 lbs/day of CO emissions. Therefore, future development of the Annexation Sites would not exceed the BAAQMD threshold of 550 lbs/day of CO emissions (Table 3.5-12).

**TABLE 3.5-12
ANNEXATION SITES CO CONCENTRATIONS IN THE PROJECT AREA**

Intersection	1-Hour CO at 10 Feet (ppm)		8-Hour CO at 10 Feet (ppm)	
	1-Hour Standard ²	Project	8-Hour Standard ³	Project
Walnut/Balfour	20 ppm	3.3	9 ppm	1.9
John Muir/Fairview	20 ppm	1.7	9 ppm	1.0
Concord/Fairview	20 ppm	3.0	9 ppm	1.7
Concord/Walnut	20 ppm	3.0	9 ppm	1.7
Marsh Creek/SR 4 Bypass	20 ppm	3.3	9 ppm	1.9
Marsh Creek/Fairview (College Driveway)	20 ppm	3.1	9 ppm	1.8
Walnut/Marsh Creek	20 ppm	3.2	9 ppm	1.9
¹ As measured at a distance of 10 feet from the corner of the intersection predicting the highest value. Presented 1-hour CO concentrations include a background concentration of 3.0 ppm. Eight-hour concentrations are based on a persistence of 0.58 of the 1-hour concentration. ² The State 1-hour standard is 20 ppm. The Federal standard is 35 ppm. The most stringent standard is reflected in the Table. ³ The State 8-hour and Federal 8-hour standard is 9 ppm.				
Source: CALINE4 Dispersion Model				

The second screening criterion for CO emissions is whether the project traffic would impact intersections of roadway links operating at Level of Service (LOS) D, E or F or would cause LOS to decline to D, E or F. Results of the Project Traffic Study (refer to Appendix D, *Traffic Study*) reveal that Annexation Sites project traffic would not reduce the LOS at any intersections of roadway links to D, E or F (that are not already operating at an LOS of D, E or F).

The final screening criterion for impacts regarding CO emissions is whether project traffic results in an increase of traffic volumes on nearby roadways by 10 percent or greater.¹⁴ The traffic study shows that traffic volumes at the following intersections could increase by greater than 10 percent as a result of future development of the Annexation Sites in the long-term:

- ❖ Walnut Boulevard/Balfour Road;
- ❖ John Muir Parkway/Fairview Avenue;
- ❖ Concord Avenue/Fairview Avenue;
- ❖ Concord Avenue/Walnut Boulevard;
- ❖ Marsh Creek Road/Fairview Avenue (College Driveway); and
- ❖ Walnut Boulevard/Marsh Creek Road.

¹⁴ Unless the increase in traffic is less than 100 vehicles per hour.

As shown in Table 3.5-12, *Annexation Sites CO Concentrations in the Project Area*, maximum year 2025 1-hour CO concentration with the Annexation Sites project is 3.3 ppm for the Walnut Boulevard/Balfour Road intersection, which is below the State and Federal standards of 20 ppm and 35 ppm, respectively. Additionally, the maximum year 2025 8-hour CO concentration with the Annexation Sites project is 1.9 ppm for the same intersection, and for the Marsh Creek Road/SR 4 Bypass and the Walnut Boulevard/Marsh Creek Road intersections, which is below the State and Federal standard of 9 ppm. Therefore, the Annexation Sites project would not result in adverse CO emissions.

Regional Criteria Pollutant Emissions

As shown in Table 3.5-13, *Annexation Sites Emissions*, the mobile source and area emissions associated with annexation of the two sites would not exceed BAAQMD thresholds. In addition, mitigation measures have been included in order to ensure that mobile emissions would be reduced to a less than significant level.

TABLE 3.5-13 ANNEXATION SITES EMISSIONS			
Emissions	ROG	NO_x	PM₁₀
Area Source	0.4	4.5	0.1
Mobile Source	30.5	17.9	72.2
<i>Total</i>	<i>30.9</i>	<i>22.4</i>	<i>72.3</i>
BAAQMD Threshold	80	80	80
Is Threshold Exceeded? (Significance Impact)	NO	NO	NO
ROG = reactive organic gases NO _x = nitrogen oxides PM ₁₀ = fine particulate matter			
Notes:			
1 – Area Source emissions excludes the use of fireplaces and wood burning stoves.			
Source: URBEMIS2002 Model			

Toxic Air Contaminants (TACs)

Potential future development of the Annexation Sites is not expected to result in development of industrial processes such as petroleum refining and chrome plating operations, which are primary sources of TACs. In addition, potential future development of the Annexation Sites project does not include locating sensitive receptors (residential uses) near TAC producing facilities.

Benzene and 1,3-butadiene from gasoline and diesel particulates are the toxic pollutants emitted in appreciable quantities from mobile source exhaust. Benzene and butadiene emissions are components of ROGs while the carcinogenic portion of diesel exhaust can be found in PM₁₀. As discussed earlier, in order to ensure mobile sources of TACs do not pose a health risk, CARB requires the use of best available control technology for toxics (T-BACT). These regulations include new standards for diesel

fuel, emission standards for new diesel trucks, buses, autos and utility equipment and inspection and maintenance requirements for heavy-duty vehicles. In addition, CARB is currently evaluating what additional regulatory action may be utilized to reduce public exposure, including establishing additional requirements for diesel fuel and engines. Potential future development of the Annexation Sites and construction equipment must comply with all CARB requirements utilizing T-BACT techniques, which would reduce mobile sources of TACs to a less than significant level.

Accidental Releases/Acutely Hazardous Air Emissions

Potential future development of the Annexation Sites is not expected to result in the development or require the removal of significant quantities of hazardous materials. Additionally, potential future development of the Annexation Sites would not result in impacts in this regard as institutional and park and recreational uses generally do not use substantial quantities of hazardous materials. Therefore, there would not be any significant health threats to the community or any releases of hazardous materials into the environment from the proposed public facilities. Thus, potential future development of the Annexation Sites would not result in potential health hazards in this regard.

Mitigation 3.5-F. Operational Air Quality Impacts – Annexation Sites: The following measures shall be implemented in order to reduce motor vehicle emissions from institutional uses:

- ❖ Construct transit facilities such as bus turnouts/bus bulbs, benches, shelters, etc;
- ❖ At the community college, provide preferential parking (e.g., near building entrance, sheltered area, etc.) for carpool and vanpool vehicles;
- ❖ Provide secure, weather-protected bicycle parking for employees;
- ❖ Provide safe, direct access for bicyclists to adjacent bicycle routes;
- ❖ Provide short-term bicycle parking for college students and park users ; and
- ❖ Provide direct, safe, attractive pedestrian access from the project area to transit stops and adjacent development;
- ❖ Provide electric vehicle charging stations.

(Less Than Significant Impact).

IMPACT 3.5-G. Cumulative Air Quality Impacts: Impacts to regional air quality resulting from development of the Vineyards project, the Annexation sites, and other cumulative projects throughout the air basin may impact existing air quality levels. Cumulative impacts as a result of project implementation would be significant and unavoidable. (Potentially Significant Cumulative Impact).

Analysis of cumulative air quality impacts is based upon; 1) whether the proposed project would individually have a significant air quality impact or 2) for any project that does not individually have significant operational air quality impacts, the project's consistency with the local general plan.¹⁵

¹⁵ BAAQMD CEQA Guidelines, BAAQMD, December 1999, pg. 19.

When analyzing the proposed project, analysis for cumulative impacts must consider the combined impact of the Vineyards project and the Annexation Sites project.

Intersection	1-Hour CO at 10 Feet (ppm)		8-Hour CO at 10 Feet (ppm)	
	1-Hour Standard²	Vineyards Project and Annexation Sites	8-Hour Standard³	Vineyards Project and Annexation Sites
John Muir/Balfour	20 ppm	3.7	9 ppm	2.1
Walnut/Balfour	20 ppm	3.3	9 ppm	1.9
John Muir/Fairview	20 ppm	3.1	9 ppm	1.8
Concord/Fairview	20 ppm	3.0	9 ppm	1.7
Concord/Walnut	20 ppm	3.0	9 ppm	1.7
Marsh Creek/Fairview (College Driveway)	20 ppm	3.2	9 ppm	1.9
Marsh Creek/ SR4 – Bypass	20 ppm	3.4	9 ppm	1.9
Walnut/Marsh Creek	20 ppm	3.2	9 ppm	1.9
Marsh Creek/Marsh Creek	20 ppm	3.0	9 ppm	1.7
NOTE:				
¹ As measured at a distance of 10 feet from the corner of the intersection predicting the highest value. Presented 1-hour CO concentrations include a background concentration of 3.0 ppm. Eight-hour concentrations are based on a persistence of 0.58 of the 1-hour concentration.				
² The State 1-hour standard is 20 ppm. The Federal standard is 35 ppm. The most stringent standard is reflected in the Table.				
³ The State 8-hour and Federal 8-hour standard is 9 ppm.				
Source: CALINE4 Dispersion Model				

As analyzed in Impact Statements 3.5-C and 3.5-D, both projects would be consistent with the regional air quality plan. In addition, as illustrated in Table 3.5-14, *Cumulative CO Emissions*, the CO emissions associated with the combined projects would not exceed BAAQMD thresholds.

However, the combined operational emissions of the two proposed projects would exceed BAAQMD thresholds, as illustrated in Table 3.5-15, *Cumulative Project Emissions*. On a regional basis, the BAAQMD CEQA Guidelines recognize that regional criteria pollutant impacts are caused by activities throughout the air basin. Accordingly, the BAAQMD CEQA Guidelines do not recommend calculating cumulative emissions from a list of discrete projects. Instead, the BAAQMD CEQA Guidelines advise that if a project individually would result in criteria pollutant emissions exceeding the BAAQMD thresholds, then it also should be deemed to contribute to a significant cumulative impact. Therefore, the proposed projects would have a cumulative significant air quality impact.

**TABLE 3.5-15
CUMULATIVE VINEYARDS PROJECT AND ANNEXATION SITES EMISSIONS**

Emissions	ROG	NO_x	PM₁₀
Area Source	68.8	68.9	0.1
Mobile Source	62.3	50.7	205.9
<i>Total</i>	<i>131.1</i>	<i>119.6</i>	<i>206.0</i>
BAAQMD Threshold	80	80	80
Is Threshold Exceeded? (Significance Impact)	YES	YES	YES
ROG = reactive organic gases NO _x = nitrogen oxides PM ₁₀ = fine particulate matter			
Notes:			
1 – Area Source emissions excludes the use of fireplaces and wood burning stoves.			
Source: URBEMIS2002 Model			

Mitigation 3.5-G. Cumulative Air Quality Impacts: The Vineyards project and Annexation Sites would contribute to a significant and unavoidable impact related to cumulative air impacts. Mitigation Measures 3.5-E.1, 3.5-E.2 and 3.5-F would reduce the projects' contribution to this impact, but not to a less than significant level. (Significant and Unavoidable Cumulative Impact).

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3.6 NOISE

The purpose of this Section is to evaluate project-related noise source impacts to on-site and surrounding land uses. This section evaluates short-term construction related impacts as well as long-term buildout conditions. Information in this section is based on the City of Brentwood General Plan and the City of Brentwood Noise Ordinance, Chapter 9.32, Noise Regulations. For the purposes of mobile source noise modeling and contour distribution, traffic information contained in the Project Traffic Study was utilized (refer to Section 3.3, Traffic and Circulation, and Appendix C, Traffic Study). Refer to Appendix E, Noise Data, for the assumptions used in this analysis. Where necessary, mitigation measures are recommended to minimize noise impacts of the project.

3.6.1 ENVIRONMENTAL SETTING

Noise Scales and Definitions

Sound is described in terms of the loudness (amplitude) and frequency (pitch) of the sound. The standard unit of measurement of sound is the Decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been revised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) compensates for this by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, the difference of 10 dBA is judged to be twice as loud and with 20 dBA being four times as loud and so forth. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Examples of various sound levels in different environments are shown in Table 3.6-1, Sound Levels and Human Response.

Many methods have been developed for evaluating community noise to account for, among other things:

- ❖ The variation of noise levels over time;
- ❖ The influence of periodic individual loud events; and
- ❖ The community response to changes in the community noise environment.

Numerous methods have been developed to measure sound over a period of time. These methods include: 1) the Community Noise Equivalent Level (CNEL); 2) the Equivalent Sound Level (Leq); and 3) Day/Night Average Sound Level (Ldn). These methods are described below.

**TABLE 3.6-1
SOUND LEVELS AND HUMAN RESPONSE**

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-Over at 1000 feet	110	Rock Band
Gas Lawn Mower at 3 feet	100	
Diesel Truck at 50 feet	90	
Noisy Urban Area Daytime	80	Food Blender at 3 feet Garbage Disposal at 3 feet
Gas Lawn Mower at 100 feet Commercial Area	70	Vacuum Cleaner at 10 feet Normal Speech at 3 feet
Commercial Area Heavy Traffic at 300 feet	60	Large Business Office
Quiet Urban Daytime	50	Dishwasher in Next Room
Quiet Urban Nighttime Quiet Suburban Nighttime	40	Theater, Large Conference Room
Quiet Rural Nighttime	30	Library Bedroom at Night Concert Hall
	20	Broadcasting Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing
Source: California Department of Transportation, <i>A Technical Supplement to the Traffic Noise Analysis Protocol</i> , 1998, page 18.		

Community Noise Equivalent Level (CNEL)

The predominant community noise rating scale used in California for land use compatibility assessment is the Community Noise Equivalent Level (CNEL). The CNEL reading represents the average of 24 hourly readings of equivalent levels, known as Leq’s, based on an A-weighted decibel with upward adjustments added to account for increased noise sensitivity in the evening and night periods. These adjustments are +5 dBA for the evening, 7:00 p.m. to 10:00 p.m. and +10 dBA for nighttime, between the hours of 10:00 p.m. to 7:00 a.m. CNEL may be indicated by “dBA CNEL” or just “CNEL”.

Leq

The Leq is the sound level containing the same total energy over a given sample time period. The Leq can be thought of as the steady sound level, which, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period.

Day/Night Average (Ldn)

Another commonly used method is the day/night average level or Ldn. The Ldn is a measure of the 24-hour average noise level at a given location. It was adopted by the U.S. Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period called the Leq. The Ldn is calculated by averaging the Leq's for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10:00 p.m. to 7:00 a.m.), by 10 dBA to account for the increased sensitivity of people to noises that occur at night. The maximum noise level recorded during a noise event is typically expressed as Lmax. The sound level exceeded over a specified time frame can be expressed as Ln (i.e., L₉₀, L₅₀, L₁₀, etc.). L₅₀ equals the level exceeded 50 percent of the time, L₁₀ equals the level exceeded ten percent of the time, etc.

As previously mentioned, people tend to respond to changes in sound pressure in a logarithmic manner. In general, a 3 dBA change in sound level is considered a "just detectable" under laboratory conditions. A 5 dBA change is readily noticeable and a 10 dBA change is considered a doubling (or halving) of the subjective loudness. It should be noted that a 3 dBA increase or decrease in the average traffic noise level is realized by a doubling or halving of the traffic volume, or by about a 7 mile per hour (mph) increase or decrease in speed.

For each doubling of distance from a point noise source, the sound level will decrease by 6 dBA. In other words, if a person is 100 feet from a machine, and moves to 200 feet from that source, sound levels will drop approximately 6 dBA. For each doubling of distance from a line source, like a roadway, noise levels are reduced by 3 to 5 decibels, depending on the ground cover between the source and the receiver.

Noise Attenuation

Noise barriers provide approximately a 5 dBA noise reduction (additional reduction may be provided with a barrier of appropriate height, material, location and length). A row of buildings provides up to 5 dBA noise reduction with a 1.5 dBA reduction for each additional row up to a maximum reduction of approximately 10 dBA. The exact degree of noise attenuation depends on the nature and orientation of the structure and intervening barriers.

Laws, Ordinances, Regulations and Standards

This section describes the laws, ordinances, regulations and standards that are applicable to the proposed project. Regulatory requirements related to environmental noise are typically promulgated at the local level. However, Federal and State agencies provide standards and guidelines to the local jurisdictions.

State Noise Standards

California Government Code Section 65302(f) mandates that the legislative body of each county and city adopt a noise element as part of their comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services as shown in Table 3.6-2, *California Land Use Compatibility Noise Guidelines*. The guidelines rank noise land use compatibility in terms of "normally acceptable," "conditionally acceptable," and

**TABLE 3.6-2
CALIFORNIA LAND USE COMPATIBILITY NOISE GUIDELINES**

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE			
	LDN or CNEL, dBA			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Low Density, Single-Family, Duplex, Mobile Homes	50 - 60	55 - 70	70-75	75-85
Residential - Multiple Family	50 - 65	60 - 70	70 - 75	70 - 85
Transient Lodging - Motel, Hotels	50 - 65	60 - 70	70 - 80	80 - 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 - 70	60 - 70	70 - 80	80 - 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 - 70	NA	65 - 85
Sports Arenas, Outdoor Spectator Sports	NA	50 - 75	NA	70 - 85
Playgrounds, Neighborhood Parks	50 - 70	NA	67.5 - 75	72.5 - 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 - 70	NA	70 - 80	80 - 85
Office Buildings, Business Commercial and Professional	50 - 70	67.5 - 77.5	75 - 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 - 75	70 - 80	75 - 85	NA

Source: State of California, General Plan Guidelines, 2003.

Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable: New Construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

NA: Not Applicable

“clearly unacceptable” noise levels for various land use types. Single-family homes are “normally acceptable” in exterior noise environments up to 60 CNEL and “conditionally acceptable” up to 70 CNEL. Multiple-family residential uses are “normally acceptable” up to 65 CNEL and “conditionally acceptable” up to 70 CNEL. Schools, libraries and churches are “normally acceptable” up to 70 CNEL, as are office buildings and business, commercial and professional uses.

Local City of Brentwood Noise Standards

General Plan

The Noise Element of the City of Brentwood General Plan, 2001-2021 (adopted November 2001) sets forth the following goals and policies for noise:

GOAL 1 – NOISE EXPOSURE: Protect noise-sensitive uses from exposure to excessive noise.			
POLICY 1.1 – Transportation Noise: Protect residential, office, and other noise sensitive land uses from excessive transportation noise.			
1.1.1 – New Development: Require mitigation in new developments so that transportation noise exposure on site does not exceed the levels shown below.			
MAXIMUM ALLOWABLE NOISE EXPOSURE TRANSPORTATION NOISE SOURCES			
Land Use	Outdoor Activity Areas ¹ Weighted Daily Average ² dBA	Interior Spaces	
		Weighted Daily Average dBA	Use Period Average ³ dBA
Residences	60	45	--
Transient Lodging	60	45	--
Hospitals, Nursing Homes	60	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	60	--	40
Office Buildings	60	--	45
Schools	60	--	45
Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--
<p>1 Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.</p> <p>2 Using the L_{dn} or CNEL noise scale</p> <p>3 Leq, as determined for a typical worst-case hour during periods in which the facility is used (e.g. school is in session).</p> <p>4 Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.</p>			
1.1.2 – Existing Development: Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Action 1.1.1 at existing sensitive land uses.			
1.1.3 – Acoustical Analysis: An acoustical analysis shall be prepared for projects that may produce or be exposed to noise levels exceeding the standards of Action 1.1.1. This acoustical analysis shall:			
A. Be the responsibility of the applicant.			
B. Be prepared by a qualified acoustical analyst.			

- C. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and the predominant noise sources.
- D. Estimate existing and projected (20 years) noise levels in terms of L_{dn} or CNEL, hourly Leq, and/or maximum noise level and compare these levels to the adopted
- E. Recommend mitigation to comply with the adopted policies and standards of the Noise Element. Where the noise source in question consists of intermittent single events, the report must address effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance.
- F. Estimate noise exposure after the prescribed mitigation measures have been implemented.
- G. Describe a monitoring program to evaluate the effectiveness of the proposed mitigation measures.

POLICY 1.2 – Industrial-Related Noise: Industrial and other non-transportation noise sources shall be mitigated to an acceptable standard.

1.2.1 – Performance Standards: New non-transportation noise sources including uses such as concrete plants, generators, and compressors and excluding agricultural operations on appropriately zoned lands, shall not exceed the following levels at the property line of lands designated for noise-sensitive uses:

Noise Level Descriptor	MAXIMUM INDUSTRIAL-RELATED NOISE LEVELS	
	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly Average (L _{eq} ,dBA)	50	45
Maximum level (dBA)	70	65

1.2.2 – Acoustical Analysis: An acoustical analysis shall be performed for projects that may produce or be exposed to noise levels exceeding the standards in Action 1.2.1. The acoustical analysis shall meet the standards specified in Action 1.1.3.

1.2.3 – Protect Existing Uses: Discourage the siting of new development on property that is subject to noise levels in excess of the standards shown in Actions 1.1.1 and 1.2.1.

1.2.4 – Ordinance: The City of Brentwood shall adopt a noise control ordinance establishing standards for the enforcement of this Noise Element, regulation of highly annoying noise sources, and regulation of residential noise environments.

1.2.5 – Construction: Construction activities near sensitive land uses should be limited to the hours of 9 a.m. to 7 p.m. on weekdays and 8 a.m. to 7 p.m. on Saturday. Construction shall be prohibited on Sundays.

GOAL 2 – NOISE ENVIRONMENT: Preserve the rural noise environment of the City and surrounding areas.

POLICY 2.1 – Site Design: Noise mitigation shall emphasize site planning and project design rather than noise barriers.

2.1.1 – State Standards: Enforce the State Noise Insulation Standards (California Code of Regulations, Title 24) and Chapter 35 of the Uniform Building Code (UBC).

2.1.2 – Building Placement: Encourage the placement of noise tolerant land uses such as open space buffers and parking lots between noise sources and sensitive receptors.

2.1.3 – Architecture: Encourage development architecture that places noise-sensitive rooms away from major roadways.

2.1.4 – Soundwalls: The use of soundwalls along thoroughfares is often necessary to maintain noise standards. However, the City’s preferred method of attenuating adverse noise levels is to utilize a combination of frontage roads, earth berming and larger building setbacks along thoroughfares in new subdivision design.

When soundwalls must be constructed, they should be designed in a meandering pattern and setback a minimum average distance of ten (10) feet from the adjacent right-of-way with extensive landscaping in front of the wall.

Source: City of Brentwood, 2001a.

Noise Ordinance

Brentwood’s Noise Ordinance is found in Chapter 9.32, Noise Regulations, of the City’s Municipal Code. The City revised Chapter 9.32 in 2002 to implement the General Plan goals and policies described above. Section 9.32.030(b) sets exterior noise levels for land use zones as shown in Table 3.6-3, City of Brentwood Noise Level Limits, and specifies that noise levels experienced by neighboring properties of a stationary noise source shall not exceed those noise levels for the following durations:

- ❖ The exterior noise levels for single-family residential and commercial uses (refer to Table 3.6-3, *City of Brentwood Noise Level Limits*), shall not be exceeded for a total of more than 30 minutes in any consecutive 60 minutes;
- ❖ The exterior noise levels for single-family residential and commercial uses shall not be exceeded by 5 dBA for a total period of more than 15 minutes in any consecutive 60 minutes;
- ❖ The exterior noise levels for single-family residential and commercial uses shall not be exceeded by 10 dBA for a total period of more than five minutes in any consecutive 60 minutes;
- ❖ The exterior noise levels for single-family residential and commercial uses shall not be exceeded by 20 dBA for any period of time;
- ❖ The interior noise level for multi-family residential units shall not be exceeded for a total period of more than five minutes in any consecutive sixty minutes;
- ❖ The interior noise level for multi-family residential units shall not be exceeded by 5 dBA for a total period of more than one minute in any consecutive 60 minutes; or
- ❖ The interior noise level for multi-family residential units shall not be exceeded by 10 dBA for any period of time.

**TABLE 3.6-3
CITY OF BRENTWOOD NOISE LEVEL LIMITS**

Zone	Time Interval	Exterior Noise Level	Interior Noise Level
Zone I (Residential)	7:00 a.m. – 10:00 p.m.	60 dBA	N/A
	10:00 p.m. – 7:00 a.m.	45 dBA	N/A
Multi-family Residential	10:00 p.m. – 7:00 a.m.	N/A	40 dBA
	7:00 a.m. – 10:00 p.m.	N/A	45 dBA
Zone II (Commercial)	7:00 a.m. – 10:00 p.m.	60 dBA	N/A
	10:00 p.m. – 7:00 a.m.	45 dBA	N/A
Zone III (Industrial)	7:00 a.m. – 10:00 p.m.	65 dBA	N/A
	10:00 p.m. – 7:00 a.m.	60 dBA	N/A

N/A: Not applicable

Source: Chapter 9.32.030, *Designated Noise Zones*, City of Brentwood Municipal Code, February 2002.

Section 9.32.030(b)(3) provides that if the ambient noise level exceeds the permissible noise limit described above, “the noise level limit shall be increased in 5 dB increments as appropriate to encompass or reflect said ambient noise level.” If the ambient level exceeds the 80-dB noise limit established for single-family residential and commercial uses by section 9.32.030(b)(2)(e), “this limit shall be increased to the maximum ambient noise level.”

The City’s Noise Ordinance also regulates the hours of operation for outside construction activities as shown in Table 3.6-4, City of Brentwood Permitted Construction Hours.

**TABLE 3.6-4
CITY OF BRENTWOOD PERMITTED CONSTRUCTION HOURS**

Construction Activity	Day	Permitted Hours
Outside Heavy Construction in or adjacent to residential zones	Monday through Friday	8:00 a.m. – 5:00 p.m.
	Saturday	9:00 a.m. to 4:00 p.m. (with City Engineer approval only)
	Sunday/Holidays	Not permitted
Outside Carpentry Construction in residential zones	Monday through Friday	7:00 a.m. – 7:00 p.m.
	Saturday	9:00 a.m. to 5:00 p.m.
	Sundays/Holidays	Not permitted

Source: Section 9.32.050, *Prohibited Special Noise Sources*, City of Brentwood Municipal Code, February 2002. This provision allows construction outside the permitted hours so long as that construction does not “create any noise, which exceeds the noise level limits of this article.” See Table 3.6-3 above.

Location of Sensitive Receptors

Certain land uses are particularly sensitive to noise, including schools, hospitals, rest homes, long-term medical and mental care facilities and parks and recreation areas. Residential areas are also considered noise sensitive, especially during the nighttime hours. Sensitive receptors were identified in the vicinity of the project site. Table 3.6-5, Sensitive Receptors, includes land uses in the vicinity of the proposed project area that would be considered sensitive receptors. The sensitive receptors are indicated on Exhibit 3.6-2. Due to the distance of the schools and the park, only residential uses will be analyzed as sensitive receptors impacted by the proposed project.

Land Use	Description/Name	Approximate Distance (Miles)	Direction
Residential	Single-family residential	0.05 –2.0	North, east
Schools	Nunn (Ron) Elementary School	1.25	North
	Bristow (William B.) Middle School	2.0	Northeast
Parks	Creekside Park	0.75	North
Sources: http://maps.yahoo.com http://www.mapquest.com <i>Contra Costa County, The Thomas Guide, pg. 616, 2002.</i>			

Computer Modeling

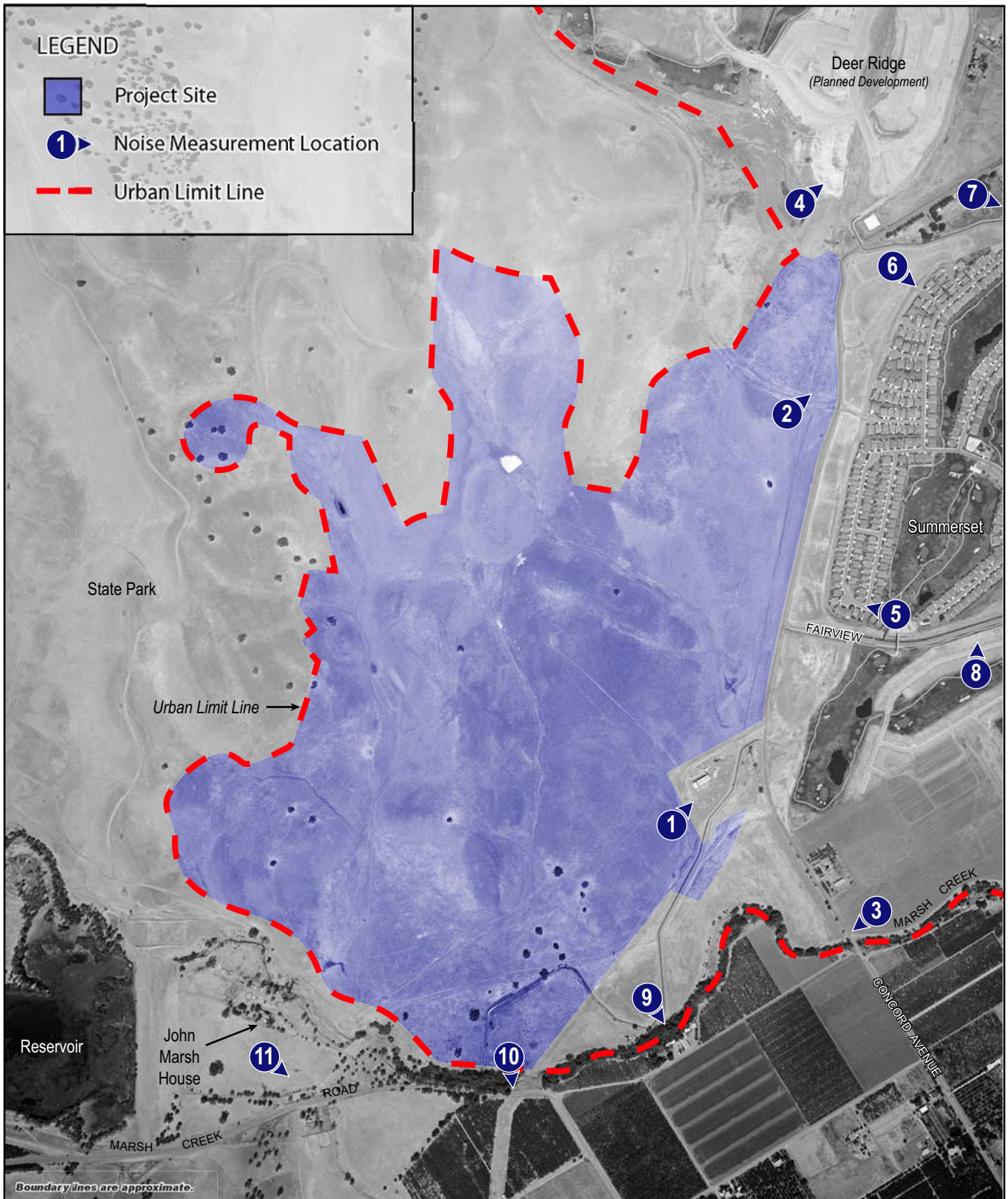
The existing and future roadway noise levels within the vicinity of the proposed project were projected using the Federal Highway Administration's Highway Noise Prediction Model (FHWA RD-77-108) together with several roadway and site parameters. These parameters determine the projected impact of vehicular traffic noise and include the roadway cross-section (e.g., number of lanes), the roadway width, the average daily traffic (ADT), vehicle travel speed, percentages of auto and truck traffic, the roadway grade, angle-of-view and site conditions ("hard" or "soft"). Noise projections are based on modeled vehicular traffic as derived from the project Traffic Study (refer to Section 3.3, Traffic and Circulation).

A 45 to 55 mile per hour (mph) average vehicle speed was assumed for existing conditions (varies depending on roadway) based on empirical observations and posted maximum speeds along the adjacent roadways.

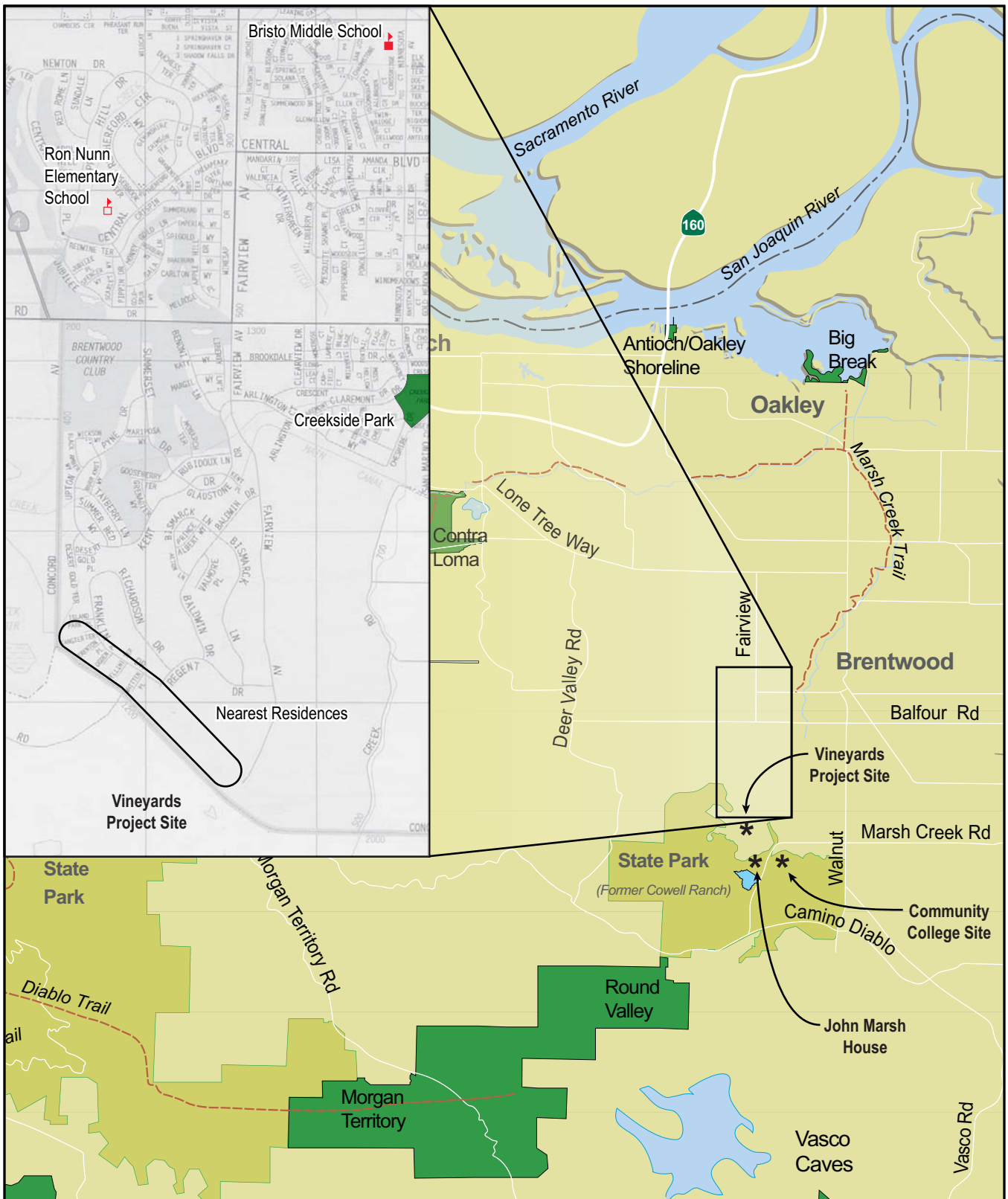
Existing Noise Environments

Field Measurements

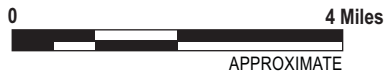
RBF Consulting conducted noise measurements in August 2003 as a means to quantify existing ambient noise levels in the project area. The noise measurement sites were representative of typical existing noise exposure within and immediately adjacent to the project site (Exhibit 3.6-1, Noise



Source: Aerial Metric Surveys (2002)



Source: East Bay Regional Park District (1997) and Thomas Brothers (2001)



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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Sensitive Noise Receptors

Exhibit 3.6-2

Measurement Locations). Noise monitoring equipment used for the ambient noise survey consisted of a Larson Davis Laboratories Model LDL 820 sound level analyzer equipped with a Bruel & Kjaer (B&K) Type 4176 ½" microphone. The instrumentation was calibrated prior to use with a B&K Type 4230 acoustical calibrator to ensure the accuracy of the measurements and to ensure compliance with applicable requirements of the American National Standards Institute (ANSI) for Type I (precision) sound level meters. The results of the field measurements are indicated in Table 3.6-6, *Noise Measurements*. The highest noise level measurement (66.5 dBA) was taken at Site 3 located along Concord Road, south of Baccini Lane. However, in order to quantify operation impacts, modeled existing traffic noise levels were used to quantify the increase due to project traffic. Traffic noise typically masks other types of noise (i.e., stationary source) and is a reliable indicator of acoustical impacts.

**TABLE 3.6-6
NOISE MEASUREMENTS IN THE VINEYARDS PROJECT VICINITY**

Site No.	Location	Leq (dBA)	Time
1	Rear of PG&E Substation off Concord Rd.	45.3	2:15 p.m. – 2:30 p.m.
2	Concord Road, approx. ½ -mile south of Fairview Avenue	59.8	2:35 p.m. - 2:45 p.m.
3	Concord Avenue, approx. 500 feet south of Baccini Lane	66.5	2:50 p.m. – 3:05 p.m.
4	Foothill Dr./Spyglass Rd. (construction site)	49.4	3:15 p.m. -3:30 p.m.
5	Summerset Residential Community (cul-de-sac)	46.5	3:40 p.m. -3:55 p.m.
6	Summerset Residential Community	45.9	4:00 p.m. -4:15 p.m.
7	Summerset Residential Community	47.2	4:20 p.m. -4:35 p.m.
8	Fairview Avenue, ¼ mile North of Concord Avenue	60.4	4:40 p.m. -4:55 p.m.
9	Orchard Ave, approx. ¼ mile south of Concord Avenue	46.5	5:05 p.m. -5:20 p.m.
10	Marsh Creek Road, approx. 1,000 feet west of Orchard Ave.	64.9	5:25 p.m. -5:40 p.m.
11	Rear of John Marsh House property	42.6	5:50 p.m. –6:05 p.m.

Source: Noise Monitoring Survey conducted by RBF Consulting, August 2003.

Existing Traffic Noise Levels

Table 3.6-7, Existing Traffic Noise Contour Levels, indicates the location of the 60, 65 and 70 CNEL noise contours associated with vehicular traffic along local roadways as modeled with the aforementioned FHWA computer model. Vehicular noise along major roadways within the project study area was modeled to estimate existing noise levels from mobile traffic. These roadways include:

- ❖ Balfour Road – Between Walnut Boulevard and Deer Valley Road;
- ❖ Camino Diablo Road – Between Walnut Road and Deer Valley Road;
- ❖ Concord Avenue – Between Sellers Avenue and Fairview Avenue;
- ❖ Deer Valley Road – North of Balfour Road and south to Marsh Creek Road;
- ❖ Fairview Avenue – North of Balfour Road and south to Marsh Creek Road;

- ❖ Marsh Creek Road – Between Walnut Boulevard and Deer Valley Road;
- ❖ Sellers Avenue – North of Marsh Creek Road;
- ❖ State Route 4 (SR 4) Bypass – North of Balfour Road and south to Fairview Avenue;
- ❖ Vasco Road – Between Camino Diablo Road and Fairview Avenue; and
- ❖ Walnut Boulevard – North of Balfour Road and south to Camino Diablo Road.

**TABLE 3.6-7
EXISTING TRAFFIC NOISE CONTOUR PROJECTIONS**

Roadway Segment	ADT	dBA @ 100 Feet from Roadway Centerline	Feet from Roadway Centerline to:		
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour
<i>Balfour Road</i>					
Deer Valley to W. Country Club	13,500	65.13	168	78	36
W. Country Club to Foothill/E. Country Club	13,500	65.13	168	78	36
Foothill/E. Country Club to SR 4 Bypass/Concord Ave.	25,400	67.88	256	119	55
SR 4 Bypass/Concord to Fairview	25,400	67.88	256	119	55
Fairview to Minnesota	25,400	67.88	256	119	55
Minnesota to Griffith	25,400	67.88	256	119	55
Griffith to Walnut	40,000	69.85	347	161	75
<i>Deer Valley</i>					
North of Balfour	11,100	64.53	148	69	32
Balfour to Marsh Creek	6,000	61.86	98	45	21
<i>Marsh Creek</i>					
Deer Valley to Camino Diablo	2,500	58.31	55	25	12
Camino Diablo to Fairview	4,500	60.86	81	38	17
Fairview to Walnut	8,500	63.63	123	57	27
Walnut to Sellers	7,300	62.96	112	52	24
<i>Walnut Avenue</i>					
SR 4 Bypass to Balfour	14,250	65.75	174	81	38
Balfour to Concord	20,000	67.22	219	101	47
Concord to Marsh Creek	21,500	67.54	229	106	49
Marsh Creek to Vasco	21,000	67.43	226	105	49
Vasco to Camino Diablo	1,000	54.21	30	14	6
<i>Camino Diablo</i>					
Marsh Creek to Walnut	2,000	57.34	47	22	10
<i>Vasco Road</i>					
Walnut to Camino Diablo	20,000	69.59	309	143	67
<i>Concord Avenue</i>					
Balfour to Fairview	10,300	64.46	140	65	30

**TABLE 3.6-7
EXISTING TRAFFIC NOISE CONTOUR PROJECTIONS**

Roadway Segment	ADT	dBA @ 100 Feet from Roadway Centerline	Feet from Roadway Centerline to:		
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour
Fairview to Walnut	8,000	63.36	119	55	26
Walnut to Sellers	500	51.32	19	9	4
<i>Fairview Avenue</i>					
North of Balfour	22,200	67.67	234	109	50
Balfour to Concord	7,000	62.66	109	50	23
Concord to Marsh Creek	2,200	58.55	50	23	11
<i>Foothill</i>					
North of Balfour	11,000	64.63	147	68	32
<i>E. Country Club</i>					
South of Balfour	11,000	64.63	147	68	32
North of Balfour	28,700	68.66	278	129	60
SR 4 Bypass to Marsh Creek	3,100	59.25	63	29	14
Source: Modeled result calculated using the Federal Highway Administration's Highway Noise Prediction Model (FHWA RD-77-108) together with several roadway and site parameters.					

Existing Brentwood Terminal (PG&E Facility)

A PG& E facility, referred to as the Brentwood Terminal, is situated west of the future SR 4 Bypass, along the eastern side of the proposed Vineyards project site. This facility operates 24 hours a day. As part of the normal operations, the Brentwood Terminal releases natural gas through relief valves (called blowdowns) that alleviate gas pressures in the underground natural gas lines. These blowdowns are automated and occur on a regular basis to prevent buildup in the natural gas lines.

On occasion (e.g., up to 1-2 times a year and not necessarily every year), the Brentwood Terminal also conducts blowdowns through larger valves to clean large sections of pipe. These blowdowns are much more audible than the automated blowdowns. These blowdowns are scheduled by PG&E, which also notifies emergency response agencies (e.g., law enforcement, fire) in advance of commencing the blowdowns. While a measurement of the sound level has not been located, City of Brentwood and PG&E staff have characterized these blowdowns as “very loud.”

3.6.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Noise impacts resulting from the implementation of the proposed project would be considered significant if they cause any of the following to occur.

Thresholds of Significance

- ❖ 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;
- ❖ Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels;
- ❖ A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
- ❖ A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Employing the City’s noise standards, the noise impacts of project operations are considered potentially significant if:

- ❖ Noise from traffic generated by the project would cause a 5-dBA or greater increase where without-project exterior noise at residential or commercial receptors is below 60 dBA Ldn/CNEL, or cause a 3-dBA or greater increase where the without-project exterior noise at residential or commercial receptors is at or above 60 dBA Ldn/CNEL (Source: General Plan Policy 1.1.2);
- ❖ The project would expose project residents or users to noise exceeding 60 dBA Ldn/CNEL (Source: General Plan Policy 1.1.1); or
- ❖ The project would cause stationary-source noise exceeding the standards set forth in Municipal Code section 9.32.030(B).

The 5-dBA and 3-dBA increments used to represent a “substantial increase” in ambient noise levels are selected because a change of over 5 dBA is readily noticeable and, therefore, generally considered a significant impact.¹ A change in community noise levels of less than 3 dBA is normally not noticeable and is therefore considered less significant,² but may be considered important by the community where ambient noise levels are relatively high. Based upon these general considerations, adverse impacts would result from a 5 dBA or greater increase when the “No Project” noise level is below 60 dBA CNEL. Additionally, an increase of 3 dBA or greater in noise levels occurring from project-related activities would be significant when the “No Project” noise level is at or above 60 dBA CNEL.

IMPACT 3.6-A. Short Term Construction Noise Impacts – Vineyards Project: Grading and construction within the project area would result in temporary noise impacts to nearby noise sensitive receptors. Construction noise impacts would be required to comply with the City of Brentwood Noise Ordinance. Site grading activities along the northeastern project boundary would have the potential to result in a temporary substantial noise increase for the residents of the southernmost portion of the Summerset development. (Potentially Significant Impact).

¹ Assessment of Noise with Respect to Community Response, ISDR 1996, International Standardization, Switzerland.

² Fundamentals and Abatement of Highway Traffic Noise, Bolt, Beranek and Newman, 1973.

Construction activities generally occur in a short and temporary duration, lasting from a few days to a period of months. Groundborne noise and other types of construction related noise impacts would typically occur during the initial site preparation, which tends to create the highest levels of noise. Generally, site preparation has the shortest duration of all construction phases. Activities that occur during this phase include earthmoving and soil compaction. High groundborne noise levels and other miscellaneous noise levels can be created during this phase due to the operation of heavy-duty trucks, backhoes and front-end loaders.

Construction noise would be most noticeable during the initial months of site-intensive grading and building construction. Noise sensitive receptors in proximity to the construction site, which include residential developments to the north and east of the project site, would experience increased noise levels resulting from construction activities. The nearest residences are approximately 250 feet from the project's northern frontage road and 450 feet from the project's nearest home sites, but would be shielded from construction noise by an existing sound wall and a new 8-12 soundwall to be constructed by the Bypass Authority. A buffer zone from the Dry Creek Reservoir would run between the northern project limits to the residences located off of Foothill Drive.

A reasonable worst-case assumption is that the three loudest pieces of equipment would operate simultaneously and continuously over at least 1 hour. The combined noise level of three of the loudest pieces of equipment is 92 dBA measured at 50 feet from the noise source. Table 3.6-8, Estimated Construction Noise In The Vineyards Project Area, which assumes this combined source level, summarizes predicted noise levels at various distances from an active construction site. These noise level estimates take into account attenuation from distance, attenuation from molecular absorption and anomalous excess meteorological factors.³

As shown on Table 3.6-8, noise levels at 200 feet for a worst-case construction scenario are 80 dBA. It should be noted that the estimated construction noise levels do not account for any noise attenuation due to existing topography. These factors may account for an acoustical attenuation level of up to 3 dBA. The primary sources of acoustical disturbance would be random incidents, which would last less than one minute, such as dropping large pieces of equipment or the hydraulic movement of machinery lifts. These noise estimates also ignore the effects of the existing and funded sound walls adjoining the nearest sensitive receptors. Subdivision 7940, farthest north, has an existing 8-foot soundwall. The adjoining subdivision 8084 has a temporary 6-foot wall, but the developer has already provided funding to the Bypass Authority for a permanent 8-12-foot soundwall. The sound wall is estimated to attenuate noise by 7 to 9 dBA. With this attenuation, it is still possible that the worst-case construction scenario along the northern property boundary could substantially increase noise at the nearby residential receptors, particularly given the low noise levels currently experienced at these receptors and the fact that project construction along the northern boundary would likely precede construction of the SR 4 Bypass adjoining those residences.

Construction activities would need to be authorized under City issuance of construction permits before any work could commence on-site. The City's Municipal Code also establishes the time periods during which construction may occur (refer to Table 3.6-4). Construction noise would also cause increased noise along access routes to the site due to movement of equipment and workers on the site.

³ Hoover, R. M., and R. H. Keith. 1996. Noise control for buildings, manufacturing plants, equipment and products. Houston, TX: Hoover & Keith, Inc.

**TABLE 3.6-8
ESTIMATED WORST-CASE CONSTRUCTION NOISE IN THE VINEYARDS PROJECT AREA**

Distance Attenuation	
Distance To Receptor (Feet)	Sound Level At Receptor (dBA)
50	92
100	86
200	80
400	73
600	69
800	67
1,000	64
1,500	60
2,000	57
2,500	54
3,000	51
4,000	47
5,280	43
7,500	36

The following assumptions were utilized:
 Basic sound level drop-off rate: 6.0 dBA per doubling distance
 Molecular absorption coefficient: 0.7 dBA per 1,000 feet
 Analogous excess attenuation: 1.0 dBA per 1,000 feet
 Reference sound level: 92 dBA
 Distance for reference sound level: 50 feet
 Assumes simultaneous operation of 1 scraper, 1 heavy truck and 1 bulldozer

The primary heavy construction equipment/vehicles are expected to be moved on-site during the initial construction period and would have a less than significant short-term noise impact on nearby roadways. Daily transportation of construction workers is not expected to cause a significant effect since this traffic would not be a substantial percentage of current daily volumes in the area and is not be anticipated to increase traffic noise levels by more than 1 dBA.

Construction noise levels would be significant if they exceeded the City’s Municipal Code requirements for construction during nighttime hours (5:00 p.m. to 8:00 a.m. for outside heavy construction) since the City’s Municipal Code exempts construction activities during daytime hours. As such, mitigation measures have been included to ensure that construction noise impacts would be less than significant. Implementation of the standard mitigation listed below and compliance with the City’s Municipal Code requirements as outlined above would minimize the length of time residents are exposed to significant noise levels and would mitigate this potentially significant impact to a less-than-significant level.

Mitigation 3.6-A.1. Short Term Construction Noise Impacts – Vineyards Project:

The following mitigation measure is required. All construction activities shall abide by the provisions as set forth within the City of Brentwood Municipal Code Section 9.32.050, *Prohibited Special Noise Sources*. Specifically, construction activities adjacent to residential uses shall be limited to the hours of 8:00 a.m. to 5:00 p.m., Monday through Friday and 9:00 a.m. through 4:00 p.m. on Saturdays and prohibited on Sundays and federal holidays.

Recommended Mitigation 3.6-A.2. Short Term Construction Noise Impacts –

Vineyards Project: The following are recommended mitigation measures. Prior to issuance of a grading permit, the Grading Plan shall be reviewed and approved by the Community Development Department to ensure compliance with the following:

- ❖ Maximize the physical separation between noise generators and noise receptors. Such separation includes, but is not limited to, the following measures:
 - Provide enclosures such as heavy duty mufflers for stationary equipment and barriers around particularly noisy areas on the site or around the entire site, as necessary;
 - Use shields, impervious fences, or other physical sound barriers, to inhibit transmission of noise to sensitive receptors; and
 - Locate stationary equipment to minimize noise impacts on the community.
- ❖ Select quiet construction equipment whenever possible, particularly air compressors.
- ❖ Prohibit unnecessary idling of internal combustion engines near sensitive receptors.
- ❖ Select routes for movement of construction-related vehicles and equipment in conjunction with the City of Brentwood such that noise-sensitive areas, including residences, hotels, and outdoor recreation areas, are avoided as much as possible.
- ❖ If pile driving is necessary because of geotechnical considerations, pre-drill the pile holes. This measure will reduce the force necessary to install piles and decrease the duration of noise and vibration exposure as well as the noise and vibration level. Shielded pile drivers or vibratory pile drivers shall be used where geotechnical conditions allow, to reduce noise to or below allowable thresholds.
- ❖ Designate a noise control coordinator, in conjunction with development projects, who will be responsible for responding to complaints about noise during construction. The telephone number of the noise control coordinator shall be conspicuously posted at the construction site. Copies of the construction schedule shall also be made available to the nearby residents.

(Less Than Significant Impact).

IMPACT 3.6-B. Short Term Construction Noise Impacts – Annexation Sites: Approval of the Annexation Sites would result in annexation of the two properties into the City of Brentwood and general plan amendments to allow for potential future improvements on the John Marsh Home site and development of a new community college. Both sites are sufficiently distant from existing residential receptors and future Vineyards residences that no significant impact from construction noise would be occur unless worst-case construction activities occurred during nighttime hours. (Less Than Significant Impact).

Minimal development (i.e., a gravel parking lot) is anticipated on the John Marsh Home site. Improvements to the John Marsh Home site would occur during daytime hours, and the site is a minimum of 600 feet from the nearest residential or other sensitive receptor. The potential future development of the community college site is more extensive, but the nearest residential or other sensitive receptor to potential construction at the community college site is 1,500 feet. Based on the estimates shown in Table 3.6-8, construction at the community college site would not be expected to cause substantial noise increases at distances of 1,500 feet and greater. Construction noise impacts would, therefore, be expected to be less than significant unless construction was to occur at night. The following mitigation measures are recommended.

Recommended Mitigation 3.6-B.1. Short Term Construction Noise Impacts – Annexation Sites: All construction activities adjacent to residential uses shall be limited to the hours of 8:00 a.m. to 5:00 p.m., Monday through Friday, and 9:00 a.m. through 4:00 p.m. on Saturdays and prohibited on Sundays and federal holidays.

Recommended Mitigation 3.6-B.2. Short Term Construction Noise Impacts – Annexation Sites: The following are recommended mitigation measures. Prior to issuance of a grading permit, the Grading Plan shall include the following:

- ❖ Maximize the physical separation between noise generators and noise receptors. Such separation includes, but is not limited to, the following measures:
 - Provide enclosures such as heavy duty mufflers for stationary equipment and barriers around particularly noisy areas on the site or around the entire site, as necessary;
 - Use shields, impervious fences, or other physical sound barriers, to inhibit transmission of noise to sensitive receptors; and
 - Locate stationary equipment to minimize noise impacts on the community.
- ❖ Select quiet construction equipment whenever possible, particularly air compressors.
- ❖ Prohibit unnecessary idling of internal combustion engines near sensitive receptors.
- ❖ Select routes for movement of construction-related vehicles and equipment in conjunction with the City of Brentwood such that noise-sensitive areas, including residences, hotels, and outdoor recreation areas, are avoided as much as possible.
- ❖ If pile driving is necessary because of geotechnical considerations, pre-drill the pile holes. This measure will reduce the force necessary to install piles and

decrease the duration of noise and vibration exposure as well as the noise and vibration level. Shielded pile drivers or vibratory pile drivers shall be used where geotechnical conditions allow, to reduce noise to or below allowable thresholds.

- ❖ Designate a noise control coordinator, in conjunction with development projects, who will be responsible for responding to complaints about noise during construction. The telephone number of the noise control coordinator shall be conspicuously posted at the construction site. Copies of the construction schedule shall also be made available to the nearby residents.

(Less Than Significant Impact).

IMPACT 3.6-C. Long Term Transportation Noise Impacts – Vineyards Project: Implementation of the Vineyards Project would generate additional vehicular travel on the surrounding roadway network, resulting in noise level increases. Noise modeling indicates that a less than 5 dBA increase due to the increase in traffic levels would result under the Existing (year 2007) Plus Vineyards Project conditions and under Future (Year 2025) Plus Vineyards Project conditions. In addition, no sensitive receptors at the Vineyards Project site or elsewhere would be affected by 3 dBA increases where ambient noise equals or exceeds 60 dBA Ldn. (Less Than Significant Impact).

The Vineyards traffic study modeled mobile-source noise impacts on the surrounding street network for “Existing (2007) Without Vineyards Project”, “Existing (2007) Plus Vineyards Project”, “Future (2025) Without Vineyards Project” and “Future (2025) Plus Vineyards Project” conditions. It should be noted that identified estimates do not adjust for any existing noise barriers or differences in elevation and only identify traffic noise generated along a specific roadway segment as a result of the Vineyards Project.

2007 Traffic Noise Levels

Table 3.6-9, *65 CNEL Contour Projections (Existing Plus Vineyards Project)*, indicates differences in noise levels for the analyzed roadways within the project study area. According to Table 3.6-9, under the “2007 Without Vineyards Project” scenario, noise levels at a distance of 100 feet from centerline would range from approximately 51 to 70 dBA. The highest noise levels would occur along Balfour Road, from Griffith Lane to Walnut Boulevard. Noise levels along this roadway segment would be 69.9 dBA at 100 feet from the roadway centerline. The lowest noise levels would occur along Concord Road, from Walnut Boulevard to Sellers Avenue. Noise levels along this roadway segment would be 51.3 dBA at 100 feet from the roadway centerline.

In the “2007 With Vineyards Project” scenario shown in Table 3.6-9, noise levels at a distance of 100 feet from centerline would range from approximately 53 to 70 dBA. Similar to the “2007 Without Vineyards Project” scenario, the highest noise levels would occur along Balfour Road, from Griffith Lane to Walnut Boulevard. Noise levels along this roadway segment would be 69.9 dBA at 100 feet from the roadway centerline. The lowest noise levels would occur along Concord Road, from Walnut Boulevard to Sellers Avenue. Noise levels along this roadway segment would be 52.8 dBA at 100 feet from the roadway centerline.

**TABLE 3.6-9
65 CNEL CONTOUR PROJECTIONS
(EXISTING PLUS PROJECT)**

Roadway Segment	Existing (Year 2007)			Existing (Year 2007) + Project						Difference in dBA @100 Feet from Roadway	
	ADT	dBA @ 100 Feet from Roadway Centerline	Feet from Roadway Centerline to:			ADT	dBA @ 100 feet from Roadway Centerline	Feet from Roadway Centerline to:			
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour			60 CNEL Noise Contour	65 CNEL Noise Contour		70 CNEL Noise Contour
<i>Balfour Road</i>											
Deer Valley to W. Country Club	13,500	65.13	168	78	36	13,900	65.26	171	80	37	0.13
W. Country Club to Foothill/E. Country Club	13,500	65.13	168	78	36	13,900	65.26	171	80	37	0.13
Foothill/E. Country Club to SR 4 Bypass/Concorde Avenue	25,400	67.88	256	119	55	26,000	67.98	260	121	56	0.10
SR 4 Bypass/Concord to Fairview	25,400	67.88	256	119	55	26,000	67.98	260	121	56	0.10
Fairview to Minnesota	25,400	67.88	256	119	55	26,000	67.98	260	121	56	0.10
Minnesota to Griffith	25,400	67.88	256	119	55	26,000	67.98	260	121	56	0.10
Griffith to Walnut	40,000	69.85	347	161	75	40,500	69.90	350	162	75	0.05
<i>Deer Valley</i>											
North of Balfour	11,100	64.53	148	69	32	11,400	64.65	150	70	32	0.12
Balfour to Marsh Creek	6,000	61.86	98	45	21	6,000	61.86	98	45	21	0.00
<i>Marsh Creek</i>											
Deer Valley to Camino Diablo	2,500	58.31	55	25	12	2,700	58.65	57	27	12	0.34
Camino Diablo to Fairview	4,500	60.86	81	38	17	4,700	61.05	83	39	18	0.19
Fairview to Walnut	8,500	63.63	123	57	27	8,700	63.73	125	58	27	0.10
Walnut to Sellers	7,300	62.96	112	52	24	8,100	63.42	120	56	26	0.46
<i>Walnut</i>											
SR 4 Bypass to Balfour	14,250	65.75	174	81	38	14,850	65.93	179	83	39	0.18
Balfour to Concord	20,000	67.22	219	101	47	20,600	67.35	223	104	48	0.13

**TABLE 3.6-9
65 CNEL CONTOUR PROJECTIONS
(EXISTING PLUS PROJECT)**

Roadway Segment	Existing (Year 2007)				Existing (Year 2007) + Project				Difference in dBA @100 Feet from Roadway	
	ADT	dBA @ 100 Feet from Roadway Centerline	Feet from Roadway Centerline to:		dBA @ 100 feet from Roadway Centerline	Feet from Roadway Centerline to:				
			60 CNEL Noise Contour	70 CNEL Noise Contour		60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour		
Concord to Marsh Creek	21,500	67.54	229	106	49	67.66	234	108	50	0.12
Marsh Creek to Vasco	21,000	67.43	226	105	49	67.50	228	106	49	0.07
Vasco to Camino Diablo	1,000	54.21	30	14	6	54.21	30	14	6	0.00
<i>Camino Diablo</i>										
Marsh Creek to Walnut	2,000	57.34	47	22	10	57.34	47	22	10	0.00
<i>Vasco</i>										
Walnut to Camino Diablo	20,000	69.59	309	143	67	69.70	314	146	68	0.11
<i>Concord</i>										
Balfour to Fairview	10,300	64.46	140	65	30	65.47	164	76	35	1.01
Fairview to Walnut	8,000	63.36	119	55	26	63.87	128	60	28	0.51
Walnut to Sellers	500	51.32	19	9	4	52.78	23	11	5	1.46
<i>Fairview</i>										
North of Balfour	22,200	67.67	234	109	50	67.9	243	113	52	0.23
Balfour to Concord	7,000	62.66	109	50	23	63.35	121	56	26	0.69
Concord to Marsh Creek	2,200	58.55	50	23	11	63.35	121	56	26	4.80
<i>Foothill</i>										
North of Balfour	11,000	64.63	147	68	32	64.67	148	69	32	0.04
<i>E. Country Club</i>										
South of Balfour	11,000	64.63	147	68	32	64.67	148	69	32	0.04
<i>SR 4 Bypass</i>										
North of Balfour	28,700	68.66	278	129	60	69.22	291	135	63	0.56

**TABLE 3.6-9
65 CNEL CONTOUR PROJECTIONS
(EXISTING PLUS PROJECT)**

Roadway Segment	Existing (Year 2007)			Existing (Year 2007) + Project			Difference in dBA @100 Feet from Roadway				
	ADT	dBA @ 100 Feet from Roadway Centerline	Feet from Roadway Centerline to:		ADT	dBA @ 100 feet from Roadway Centerline		Feet from Roadway Centerline to:			
			60 CNEL Noise Contour	65 CNEL Noise Contour				70 CNEL Noise Contour	60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour
Sellers SR 4 Bypass to Marsh Creek	3,100	59.25	63	29	14	3,200	59.38	64	30	14	0.13

Source: Modeled results calculated using the Federal Highway Administration's Highway Noise Prediction Model (FHWA RD-77-108) together with several roadway and site parameters.

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Table 3.6-9 also compares the “2007 Without Vineyards Project” scenario with the “2007 With Vineyards Project” scenario. The highest noise increase would occur along Fairview Avenue, from Concord Avenue to Marsh Creek Road, which would have a noise increase of 4.8 dBA. Under the “2007 Without Vineyards Project” scenario, this roadway segment would be 58.6 dBA at 100 feet from the roadway centerline. As noted previously, an increase of 3 dBA or more is considered significant when the “No Project” noise levels at adjacent residential or commercial uses are equal to or greater than 60 dBA CNEL. If the existing noise environment were below 60 dBA CNEL, an increase of 5 dBA CNEL or more would result in a significant impact. As such, projected noise levels do not exceed the established criteria/threshold levels, resulting in less than significant impacts in this regard.

2025 Traffic Noise Levels

Table 3.6-10, *65 CNEL Contour Projections (Future Plus Vineyards Project)*, indicates differences in noise levels for the analyzed roadways within the project study area. According to Table 3.6-10, under the “2025 Without Vineyards Project” scenario, noise levels at a distance of 100 feet from centerline would range from approximately 53 to 72 dBA. The highest noise levels would occur along the SR 4 Bypass, extending north of Balfour Road. Noise levels along this roadway segment would be approximately 72.2 dBA at 100 feet from the roadway centerline. The lowest noise levels would occur along Concord Avenue extending from east of Walnut Boulevard to Sellers Avenue. Noise levels along this roadway segment would be 53.4 dBA at 100 feet from the roadway centerline.

In the “2025 With Vineyards Project” scenario shown in Table 3.6-10, noise levels at a distance of 100 feet from centerline would range from approximately 55 to 72 dBA. Similar to the “2025 Without Vineyards Project” scenario, the highest noise levels would occur along SR 4 Bypass extending north of Balfour Road. Noise levels along this roadway segment would be 72.4 dBA at 100 feet from the roadway centerline. The lowest noise levels would occur along Concord Avenue extending east of Walnut Boulevard to Sellers Avenue. Noise levels along this roadway segment would be 54.8 dBA at 100 feet from the roadway centerline.

Table 3.6-10 also compares the “2025 Without Vineyards Project” scenario with the “2025 With Vineyards Project” scenario. The highest noise increase would occur along Marsh Creek Road extending north from Fairview Avenue to Vasco Road, which would have a noise increase of 4.6 dBA. Under the “2025 Without Vineyards Project” scenario, this roadway segment would be 59.7 dBA at 100 feet from the roadway centerline. As such, projected noise levels do not exceed the established criteria/threshold levels, resulting in less than significant impacts in this regard.

Mitigation 3.6-C. Long Term Noise Impacts – Vineyards Project: The project would result in less than significant long-term transportation noise impacts, therefore no mitigation measures are required. (Less Than Significant Impact).

**TABLE 3.6-10
65 CNEL CONTOUR PROJECTIONS
(FUTURE PLUS PROJECT)**

Roadway Segment	Future (Year 2025)				Future (Year 2025) + Project				Difference in dBA @100 Feet from Roadway		
	ADT	dBA @ 100 Feet from Roadway Centerline	Feet from Roadway Centerline to:		ADT	dBA @ 100 feet from Roadway Centerline	Feet from Roadway Centerline to:				
			60 CNEL Noise Contour	65 CNEL Noise Contour			60 CNEL Noise Contour	65 CNEL Noise Contour		70 CNEL Noise Contour	
<i>Balfour Road</i>											
Deer Valley to W. Country Club	16,000	65.87	188	87	41	17,000	66.13	196	91	42	0.26
W. Country Club to Foothill/E. Country Club	16,000	65.87	188	87	41	17,000	66.13	196	91	42	0.26
Foothill/E. Country Club to John Muir	33,000	69.01	305	142	66	33,000	69.01	305	142	66	0.00
John Muir to SR 4 Bypass	33,000	69.01	305	142	66	33,000	69.01	305	142	66	0.00
SR 4 Bypass/Concord to Fairview	38,800	69.97	340	158	73	38,800	69.97	340	158	73	0.00
Fairview to Minnesota	38,800	69.97	340	158	73	38,800	69.97	340	158	73	0.00
Minnesota to Griffith	38,800	69.97	340	158	73	38,800	69.97	340	158	73	0.00
Griffith to Walnut	28,200	68.33	275	128	59	28,700	68.41	278	129	60	0.08
<i>Deer Valley</i>											
North of Balfour	16,000	66.12	188	87	41	17,000	66.39	196	91	42	0.27
Balfour to Marsh Creek	4,000	60.10	75	35	16	4,000	60.10	75	35	16	0.00
<i>Marsh Creek</i>											
Deer Valley to Camino Diablo	4,500	60.86	81	38	17	5,050	61.36	87	41	19	0.50
Camino Diablo to Fairview	7,500	63.08	114	53	24	8,050	63.39	119	55	26	0.31
Fairview to Vasco	4,000	59.70	75	35	16	11,500	64.29	151	70	33	4.59
Vasco to Walnut	20,000	67.34	219	101	47	23,300	68.00	242	112	52	0.66
Walnut to Sellers	17,400	66.74	199	92	43	19,100	67.14	212	98	46	0.40
<i>Walnut</i>											
SR 4 Bypass to Balfour	10,900	64.59	146	68	31	12,500	65.18	160	74	34	0.59
Balfour to Concord	10,400	64.38	141	66	30	12,000	65.00	155	72	33	0.62
Concord to Marsh Creek	7,600	63.02	115	53	25	9,200	63.85	130	60	28	0.83

**TABLE 3.6-10
65 CNEL CONTOUR PROJECTIONS
(FUTURE PLUS PROJECT)**

Roadway Segment	Future (Year 2025)				Future (Year 2025) + Project				Difference in dBA @100 Feet from Roadway		
	ADT	dBA @ 100 Feet from Roadway Centerline	Feet from Roadway Centerline to:			ADT	dBA @ 100 feet from Roadway Centerline	Feet from Roadway Centerline to:			
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour			60 CNEL Noise Contour		65 CNEL Noise Contour	70 CNEL Noise Contour
Marsh Creek to Vasco	5,200	61.37	89	41	19	5,200	61.37	89	41	19	0.00
Vasco to Camino Diablo	2,300	57.83	52	24	11	2,300	57.83	52	24	11	0.00
<i>Camino Diablo</i>											
Marsh Creek to Walnut	3,000	59.1	62	29	13	3,000	59.10	62	29	13	0.00
<i>Vasco</i>											
Walnut to Marsh Creek	20,000	67.09	218	101	47	20,700	67.24	224	104	48	0.15
Marsh Creek to Fairview	29,400	68.77	283	131	61	32,700	69.23	303	141	65	0.46
Walnut to Camino Diablo	22,000	70.01	329	153	71	22,700	70.14	336	156	72	0.13
<i>Concord</i>											
Fairview to Walnut	2,900	58.96	60	28	13	3,200	59.38	64	30	14	0.42
Walnut to Sellers	800	53.36	26	12	6	1,100	54.75	32	15	7	1.39
<i>Fairview</i>											
North of Balfour	18,000	66.76	204	95	44	20,000	67.22	219	101	47	0.46
Balfour to Concord	13,000	65.35	164	76	35	15,000	65.97	180	84	39	0.62
Concord to Marsh Creek	3,500	59.77	68	32	15	8,000	63.36	119	55	26	3.59
<i>Foothill</i>											
North of Balfour	14,400	65.41	176	82	38	15,900	66.1	188	87	40	0.69
<i>E. Country Club</i>											
South of Balfour	14,400	65.79	176	81	38	15,900	66.23	188	87	40	0.44
<i>SR 4 Bypass</i>											
North of Balfour	60,500	72.15	457	212	98	64,000	72.39	475	220	102	0.24
Balfour to Fairview	29,400	68.51	283	131	61	29,400	68.51	283	131	61	0.00

**TABLE 3.6-10
65 CNEL CONTOUR PROJECTIONS
(FUTURE PLUS PROJECT)**

Roadway Segment	Future (Year 2025)				Future (Year 2025) + Project				Difference in dBA @100 Feet from Roadway		
	ADT	dBA @ 100 Feet from Roadway Centerline	Feet from Roadway Centerline to:		ADT	dBA @ 100 feet from Roadway Centerline	Feet from Roadway Centerline to:				
			60 CNEL Noise Contour	65 CNEL Noise Contour			60 CNEL Noise Contour	65 CNEL Noise Contour		70 CNEL Noise Contour	
<i>Sellers</i>											
SR 4 Bypass to Marsh Creek	1,500	56.09	39	18	8	2,400	58.13	53	25	11	2.04
<i>John Muir</i>											
Balfour to E. Country Club	7,900	63.19	118	55	25	8,800	63.66	126	59	27	0.47
E. Country Club to Fairview	1,700	56.39	42	20	9	3,900	59.99	73	34	16	3.60

Source: Modeled results calculated using the Federal Highway Administration's Highway Noise Prediction Model (FHWA RD-77-108) together with several roadway and site parameters.

IMPACT 3.6-D. Long Term Transportation Noise Impacts – Annexation Sites: Approval of the Annexation Sites would result in annexation of the two properties into the City of Brentwood and general plan designations allowing for potential future improvements on the John Marsh Home site and the community college site. Only minor changes are contemplated on the John Marsh Home property. Plans could be developed and approved for a new community college on the community college site. Potential development of a future college could potentially result in a substantial increase in long-term noise. However, modeling indicates the increase in noise levels would be within established criteria/threshold levels, resulting in less than significant impact. (Less Than Significant Impact).

The Vineyards traffic study modeled mobile-source noise impacts on the surrounding street network for “Future (2025) Without Vineyards Project” and “Future (2025) Plus Vineyards Project” conditions. It should be noted that identified estimates do not adjust for any existing noise barriers or differences in elevation and only identify traffic noise generated along a specific roadway segment as a result of the Vineyards Project.

2025 Traffic Noise Levels

Table 3.6-11, 65 CNEL Contour Projections (Future Plus Annexation Project), indicates differences in noise levels for the analyzed roadways within the project study area. According to Table 3.6-11, under the “2025 Without Annexation Project” scenario, noise levels at a distance of 100 feet from centerline would range from approximately 53 to 72 dBA. The highest noise levels would occur along the SR 4 Bypass, extending north of Balfour Road. Noise levels along this roadway segment would be 72.2 dBA at 100 feet from the roadway centerline. The lowest noise levels would occur along Concord Avenue extending from east of Walnut Boulevard to Sellers Avenue. Noise levels along this roadway segment would be 53.4 dBA at 100 feet from the roadway centerline.

In the “2025 With Annexation Project” scenario shown in Table 3.6-11, noise levels at a distance of 100 feet from centerline would range from approximately 54 to 72 dBA. Similar to the “2025 Without Annexation Project” scenario, the highest noise levels would occur along SR 4 Bypass north of Balfour Road. Noise levels along this roadway segment would be 72.3 dBA at 100 feet from the roadway centerline. The lowest noise levels would occur along Concord Avenue extending east of Walnut Boulevard to Sellers Avenue. Noise levels along this roadway segment would be 54.3 dBA at 100 feet from the roadway centerline.

Table 3.6-11 also compares the “2025 Without Annexation Project” scenario with the “2025 With Annexation Project” scenario. The highest noise increase would occur along Marsh Creek Road extending north from Fairview Avenue to Vasco Road, which would have a noise increase of 4.2 dBA. Under the “2025 Without Annexation Project” scenario, this roadway segment would be 59.7 dBA at 100 feet from the roadway centerline. As such, projected noise levels do not exceed the established criteria/threshold levels, resulting in less than significant impacts in this regard.

Mitigation 3.6-D. Long Term Transportation Noise Impacts – Annexation Sites: The project would result in less than significant long-term transportation noise impacts. Therefore, no mitigation measures are required. (Less Than Significant Impact).

**TABLE 3.6-11
65 CNEL CONTOUR PROJECTIONS
(FUTURE PLUS ANNEXATION)**

Roadway Segment	Future (Year 2025)				Future (Year 2025) + Annexation				Difference in dBA @100 Feet from Roadway		
	ADT	dBA @ 100 Feet from Roadway Centerline	Feet from Roadway Centerline to:			ADT	dBA @ 100 feet from Roadway Centerline	Feet from Roadway Centerline to:			
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour			60 CNEL Noise Contour		65 CNEL Noise Contour	70 CNEL Noise Contour
<i>Balfour Road</i>											
Deer Valley to W. Country Club	16,000	65.87	188	87	41	16,500	66.00	192	89	41	0.13
W. Country Club to Foothill/E. Country Club	16,000	65.87	188	87	41	16,500	66.00	192	89	41	0.13
Foothill/E. Country Club to John Muir	33,000	69.01	305	142	66	33,500	69.08	308	143	66	0.07
John Muir to SR 4 Bypass	33,000	69.01	305	142	66	33,500	69.08	308	143	66	0.07
SR 4 Bypass/Concord to Fairview	38,800	69.97	340	158	73	38,800	69.97	340	158	73	0.00
Fairview to Minnesota	38,800	69.97	340	158	73	38,800	69.97	340	158	73	0.00
Minnesota to Griffith	38,800	69.97	340	158	73	38,800	69.97	340	158	73	0.00
Griffith to Walnut	28,200	68.33	275	128	59	28,500	68.38	277	128	60	0.05
<i>Deer Valley</i>											
North of Balfour	16,000	66.12	188	87	41	16,500	66.26	192	89	41	0.14
Balfour to Marsh Creek	4,000	60.10	75	35	16	4,000	60.10	75	35	16	0.00
<i>Marsh Creek</i>											
Deer Valley to Camino Diablo	4,500	60.86	81	38	17	4,750	61.10	84	39	18	0.24
Camino Diablo to Fairview	7,500	63.08	114	53	24	7,750	63.22	116	54	25	0.14
Fairview to Vasco	4,000	59.70	75	35	16	9,000	63.87	128	60	28	4.17
Vasco to Walnut	20,000	67.34	219	101	47	22,200	67.79	234	109	50	0.45
Walnut to Sellers	17,400	66.74	199	92	43	18,500	67.00	207	96	45	0.26
<i>Walnut</i>											
SR 4 Bypass to Balfour	10,900	64.59	146	68	31	12,000	65.00	155	72	33	0.41
Balfour to Concord	10,400	64.38	141	66	30	11,500	64.82	151	70	33	0.44

**TABLE 3.6-11
65 CNEL CONTOUR PROJECTIONS
(FUTURE PLUS ANNEXATION)**

Roadway Segment	Future (Year 2025)				Future (Year 2025) + Annexation				Difference in dBA @100 Feet from Roadway		
	ADT	dBA @ 100 Feet from Roadway Centerline	Feet from Roadway Centerline to:			ADT	dBA @ 100 Feet from Roadway Centerline	Feet from Roadway Centerline to:			
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour			60 CNEL Noise Contour		65 CNEL Noise Contour	70 CNEL Noise Contour
Concord to Marsh Creek	7,600	63.02	115	53	25	8,700	63.61	125	58	27	0.59
Marsh Creek to Vasco	5,200	61.37	89	41	19	5,200	61.37	89	41	19	0.00
Vasco to Camino Diablo	2,300	57.83	52	24	11	2,300	57.83	52	24	11	0.00
<i>Camino Diablo</i>											
Marsh Creek to Walnut	3,000	59.10	62	29	13	3,000	59.10	62	29	13	0.00
<i>Vasco</i>											
Walnut to Marsh Creek	20,000	67.09	218	101	47	20,300	67.16	221	102	48	0.07
Marsh Creek to Fairview	29,400	68.77	283	131	61	31,900	69.12	298	138	64	0.35
Walnut to Camino Diablo	22,000	70.01	329	153	71	23,300	70.26	342	159	74	0.25
<i>Concord</i>											
Fairview to Walnut	2,900	58.96	60	28	13	3,100	59.25	63	29	14	0.29
Walnut to Sellers	800	53.36	26	12	6	1,000	54.33	30	14	6	0.97
<i>Fairview</i>											
North of Balfour	18,000	66.76	204	95	44	19,000	67.00	211	98	45	0.24
Balfour to Concord	13,000	65.35	164	76	35	14,000	65.67	172	80	37	0.32
Concord to Marsh Creek	3,500	59.77	68	32	15	6,000	62.11	98	45	21	2.34
<i>Foothill</i>											
North of Balfour	14,400	65.41	176	82	38	15,400	66.21	184	85	40	0.80
<i>E. Country Club</i>											
South of Balfour	14,400	65.79	176	81	38	15,400	66.09	184	85	40	0.30
<i>SR 4 Bypass</i>											
North of Balfour	60,500	72.15	457	212	98	63,000	72.32	470	218	101	0.17

**TABLE 3.6-11
65 CNEL CONTOUR PROJECTIONS
(FUTURE PLUS ANNEXATION)**

Roadway Segment	Future (Year 2025)				Future (Year 2025) + Annexation				Difference in dBA @100 Feet from Roadway		
	ADT	dBA @ 100 Feet from Roadway Centerline	Feet from Roadway Centerline to:			ADT	dBA @ 100 feet from Roadway Centerline	Feet from Roadway Centerline to:			
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour			60 CNEL Noise Contour		65 CNEL Noise Contour	70 CNEL Noise Contour
Balfour to Fairview	29,400	68.51	283	131	61	29,400	68.51	283	131	61	0.00
<i>Sellers</i>											
SR 4 Bypass to Marsh Creek	1,500	56.09	39	18	8	2,100	57.55	49	23	10	1.46
<i>John Muir</i>											
Balfour to E. Country Club	7,900	63.19	118	55	25	8,200	63.35	121	56	26	0.16
E. Country Club to Fairview	1,700	56.39	42	20	9	3,000	58.85	62	29	13	2.46

Source: Modeled results calculated using the Federal Highway Administration's Highway Noise Prediction Model (FHWA RD-77-108) together with several roadway and site parameters.

IMPACT 3.6-E. Stationary Noise Impacts – Vineyards Project: Implementation of the proposed Vineyards Project would result in the generation of on-site noise associated with retail commercial activities that include loading/unloading activities, operation of mechanical equipment (e.g., air conditioning units) and activities occurring in parking lots. Stationary source impacts would result in a less than significant impact. (Less Than Significant Impact).

Noise typically associated with operation of commercial uses would be generated by the following sources:

- ❖ Mechanical equipment (air conditioners, trash compactors, emergency generators, etc.);
- ❖ Trucks traveling on the site, to and from loading docks;
- ❖ Activities at loading docks (maneuvering and idling trucks, banging and clanging of equipment);
- ❖ Typical parking lot activities (i.e., parking lot traffic);
- ❖ Landscape maintenance; and
- ❖ Activities at the Recreation Center.

Existing and/or developing residential uses are located to the north and east (Summerset and Deer Ridge residential developments), but are protected from Vineyards Project noise by an existing soundwall (Summerset) and a buffer (Deer Ridge). In addition, the Vineyards Project includes its own soundwall inside the northern boundary of the project site. Because the nearest off-site residences would be separated from Vineyards Project stationary-source noise by two soundwalls, John Muir Parkway, and the SR 4 Bypass, stationary-source noise from the Vineyards Project would not be significant at those residences. Therefore, this analysis focuses on the possibility for Vineyards Project residents to be exposed to excessive stationary-source noise from the Vineyards Project itself.

As described above, the City's Noise Ordinance specifies the maximum duration for which different noise levels cannot be exceeded at residential and commercial uses. As noise levels increase, the time permitted for these noise levels decreases. For events lasting 1 minute in any hour, the maximum noise levels allowed are 75 and 60 dBA during daytime and nighttime hours, respectively. For events lasting more than 5 minutes in any hour, the maximum noise levels allowed are 70 and 55 dBA, respectively, during daytime and nighttime hours. For events lasting 15 minutes in any hour, the maximum noise levels allowed are 65 and 50 dBA, respectively, during daytime and nighttime hours.

Although several noise sources would be introduced on the Vineyards Project site, such as delivery truck movements, trash compactors, and parking lot sweepers, many of them would operate for only brief time periods. These types of sources usually do not operate concurrently. Other noise sources, such as air conditioning equipment, parking lot traffic, and loading dock activities, operate for comparatively longer periods of time. The effects of these types of noise sources are described below. It should be noted that the following projected noise levels do not account for noise attenuation due to existing or planned walls, berms, intervening structures or topography.

Mechanical Equipment

Mechanical equipment, such as generators, trash compactors, heating, ventilation and air conditioning (HVAC) units would be included as part of the Vineyards Project. Mechanical equipment would typically be utilized in commercial areas including the winery/hotel/spa.

Typically, equipment noise is 55 dBA at 50 feet from the source. Vineyards residences would either not be in close proximity to these noise sources or shielded from them by sound walls that are included in the project design. In addition, equipment would be selected to reduce noise and would be installed with proper acoustical shielding. For these reasons, mechanical equipment associated with commercial uses would not cause a significant noise impact at residential receptors.

Slowly Moving Trucks (Deliveries)

It is anticipated that truck deliveries would occur at the proposed commercial uses and the winery, as described above. The winery is anticipated to require a total of four delivery trucks a day during the grape harvest season, which runs for approximately three months, from mid August through mid November. The maximum noise levels of slow moving heavy and small trucks range between 73 and 70 dBA, respectively, at 50 feet. Although they would be slow moving, these trucks would pass by any given residence in less than one minute. Thus, the Noise Ordinance standards of 80 dBA instantaneous noise and 75 dBA for one minute in any hour would not be exceeded at any receptor. Delivery truck traffic is not of sufficient volume to exceed community noise standards that are based on a time averaged scale, such as the CNEL scale. In addition, the Noise Ordinance requires compliance with the maximum allowed noise levels for all delivery activities (Section 9.32.030(B)).

Loading Docks

Noise sources at loading docks may include maneuvering and idling trucks, truck refrigeration units, fork lifts, banging and clanging of equipment (i.e., hand carts and roll-up doors), noise from P.A. systems and voices of truck drivers and employees. The maximum noise level associated with loading docks is typically 73 dBA at 75 feet.⁴ The proposed Vineyards Project includes commercial uses and a winery that may require use of loading docks, but loading docks would be located far from residential receptors and residences near commercial areas would be protected by soundwalls. Therefore, noise generated by loading docks would be less than significant.

Parking Areas

The proposed commercial, residential and winery/hotel uses would include development of parking areas. Traffic associated with parking lots is of insufficient volume to exceed community noise standards based on a time averaged scale of CNEL. However, the instantaneous maximum sound levels generated by a car door slamming, an engine starting-up, and car passing by may be an annoyance to adjacent sensitive receptors. Conversations in parking areas may also be an annoyance to adjacent sensitive receptors. Sound levels of speech typically range from 33 dBA at 48 feet for normal speech to 50 dBA at 50 feet for very loud speech.⁵ Vineyards residences would either not be

⁴ Per conversation between Eddie Torres of RBF Consulting and Jim Buntin of Brown-Buntin Associates, Inc., July 2002.

⁵ "Handbook of Noise Control," Cyril M. Harris, 1979.

in close proximity to these noise sources or shielded from them by sound walls that are included in the project design. Therefore, parking-area noise would be less than significant.

Landscape Maintenance

Development of the proposed uses would introduce new landscaping areas requiring periodic maintenance. Noise generated by gas lawnmowers is estimated to be approximately 70 dBA at a distance of 5.0 feet from the source. Therefore, at 20 feet, noise from a gas lawnmower would be 58 dBA and would meet City noise standards even if – as is unlikely – the lawnmower were operated near the same sensitive receptor for a full hour. For each doubling of distance from a point noise source (i.e. lawnmower), the sound level will decrease by 6 dBA. Additionally, walls attenuate noise at an average of 9 dBA. Although maintenance activities would operate during daytime hours for brief periods of time and would increase ambient noise levels in the Vineyards project, the gas lawnmower noise levels would not constitute a significant impact.

Activities at the Vineyards Project Recreation Center

The Vineyards Project includes a proposed recreation center to be situated east of Fairview Avenue and open to residents of the active-adult community. The recreation center would be open from dawn to dusk. Members would be able to rent out the recreation center for private parties, which may extend its operational hours. Activities at the recreation center could expose surrounding receptors to noise impacts from events at these facilities, primarily from crowd noise. As indicated above, people shouting/laughing generate peak maximum noise levels of 65 dBA at 50 feet from the source. Furthermore, recreational users would be subject to compliance with all the City's Noise Ordinance. Thus, this impact would be less than significant.

Mitigation 3.6-E. Stationary Noise Impacts – Vineyards Project: The proposed Vineyards Project would result in less than significant stationary noise impacts, therefore no mitigation is required. (Less Than Significant Impact).

IMPACT 3.6-F. Stationary Noise Impacts – Annexation Sites: Approval of the Annexation Sites would result in annexation of the two properties into the City of Brentwood and general plan designations allowing for potential future improvements on the John Marsh Home site and the community college site. Only minor changes are contemplated on the John Marsh Home property. Plans could be developed and approved for a new community college on the community college site. Potential development of a future college could potentially result in a substantial increase in stationary-source noise, but the college is not near sensitive receptors. (Less Than Significant Impact).

The annexation and General Plan Amendments proposed regarding the Annexation Sites would allow for future developments of the sites. Minimal development is anticipated on the John Marsh Home site, therefore the introduction of stationary noise sources on this site is expected to be minimal. The potential future development of the community college site would have the potential to introduce new stationary noise sources such as mechanical equipment, landscape maintenance, parking lots, dormitories and loading/unloading areas. However, the community college site is not located within close proximity to existing or future vineyards residences and other sensitive receptors. thus, stationary source noise from the community college is not anticipated to be significant.

Mitigation 3.6-F. Stationary Noise Impacts – Annexation Sites: The project would result in less than significant stationary-source noise impacts. Therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.6-G. Impacts of External Noise on Vineyards Project: Implementation of the proposed Vineyards Project would result in exposure of project residents and users to traffic noise and “blowdown” noise from the Brentwood Terminal. Because the project includes a soundwall to protect the site from the SR 4 Bypass noise and loud “blowdown” noise is infrequent, this impact would be less than significant. (Less Than Significant Impact).

CEQA addresses the impacts of a proposed project on the environment, not the impacts of the environment on a proposed project. However, both the CEQA Guidelines Initial Study Checklist and the Brentwood General Plan, which are the bases for the significance criteria in this EIR, suggest that a project’s potential to “expose persons” to excessive noise, not just to *cause* excessive noise, be analyzed. For residents and users of the Vineyards project, the only potentially significant external traffic noise source is the SR 4 Bypass outside the northern project boundary. Table 3.6-12, 65 CNEL Contour Projections (Future Plus Project Plus Annexation), shows that SR 4 Bypass traffic adjacent to the Vineyards site would cause noise of 70 dBA Ldn/CNEL at 105 feet from the centerline and 65 dBA Ldn/CNEL at 226 feet from the centerline. The nearest receptor at the Vineyards site would be approximately 300 feet from the centerline of the nearest Bypass lane. Therefore, the residents located at the northern portion of the project site would experience a noise level of less than 65 dBA as a result of Vineyards Project traffic along the SR 4 Bypass. In addition, the proposed project includes a 6-8-foot soundwall inside the northern site boundary. This soundwall would reduce noise at the northern residences by approximately 7 to 9 dBA Ldn/CNEL.⁶ Since traffic noise experienced by the nearest sensitive receptors would be less than the maximum allowed by the City’s General Plan (65 dBA with mitigation or 60 dBA without), the proposed project would have a less than significant impact in this regard.

As is discussed under Existing Noise Environments above, PG&E Brentwood Terminal “blowdown” noise is occasional. The loudest blowdown noises are scheduled in advance and occur at most once or twice per year. Vineyards project residents, like other nearby residents, will hear these noises, despite an intervening buffer zone and berm and soundwalls. Because these events are so infrequent, this impact is less than significant.

⁶ In addition, the General Plan provides: “Where is it not possible to reduce noise in outdoor activity areas to 60 Ldn/CNEL or less using a practical application of the best available noise reduction measures, an exterior noise level of up to 65 Ldn/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table. [45 Ldn/CNEL].”

Recommended Mitigation 3.6-G. Impacts of External Noise on Vineyards Project: Exposure of Vineyards residents to external noise is a less-than-significant impact, therefore no mitigation is required. However, the following is a recommended mitigation measure:

- ❖ As part of its real estate sale disclosures, the applicant shall notify all prospective purchasers of the property's of their potential exposure to PG&E Brentwood Terminal blowdown noise.

(Less Than Significant Impact)

IMPACT 3.6-H: Impacts of External Noise on Annexation Sites: No significant noise sources are near the Annexation Sites, thus no significant impact would occur. (Less Than Significant Impact).

Both the community college site and the John Marsh Home are not in close proximity to significant noise sources other than the Brentwood Terminal (see Impact 3.6-G above), thus, users of those sites would not experience significant noise from external sources.

Mitigation 3.6-H. Impacts of External Noise on Annexation Sites: Exposure of Annexation Sites users to external noise is a less-than-significant impact, therefore no mitigation is required. (Less Than Significant Impact).

IMPACT 3.6-I. Cumulative Noise Impacts: Noise impacts resulting from development of cumulative projects may impact existing sensitive receptors. Cumulative impacts as a result of project implementation would be less than significant. (Less Than Significant Impact).

Vineyards and Annexation Sites

Cumulative construction noise impacts of the Vineyards and Annexation Sites projects are not expected to be significant. Even if portions of the Vineyards site were under construction simultaneously with construction at the John Marsh Home or the community college, the sites are distant enough from each other, and the Annexation sites are distant enough from sensitive receptors, that combined construction noise would not likely affect any sensitive receptor to any greater extent than would the Vineyards construction alone.

Cumulative traffic noise impacts from the two projects are shown in Table 3.6-12, 65 CNEL Contour Projections (Future Plus Project Plus Annexation). According to Table 3.6-12, cumulative noise levels at a distance of 100 feet from centerline would range from approximately 54 to 72 dBA. Similar to the "2025 Without Project" scenario, the highest noise levels would occur along SR 4 Bypass north of Balfour Road. Noise levels along this roadway segment would be 72.6 dBA at 100 feet from the roadway centerline. The lowest noise levels would occur along Concord Avenue extending east of Walnut Boulevard to Sellers Avenue. Noise levels along this roadway segment would be 55.5 dBA at 100 feet from the roadway centerline.

**TABLE 3.6-12
65 CNEL CONTOUR PROJECTIONS
(FUTURE + PROJECT + ANNEXATION)**

Roadway Segment	Future (Year 2025)				Future (Year 2025) + Project + Annexation				Difference in dBA @100 Feet from Roadway		
	ADT	dBA @ 100 Feet from Roadway Centerline	Feet from Roadway Centerline to:			ADT	dBA @ 100 feet from Roadway Centerline	Feet from Roadway Centerline to:			
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour			60 CNEL Noise Contour		65 CNEL Noise Contour	70 CNEL Noise Contour
<i>Balfour Road</i>											
Deer Valley to W. Country Club	16,000	65.87	188	87	41	17,500	66.26	200	93	43	0.39
W. Country Club to Foothill/E. Country Club	16,000	65.87	188	87	41	17,500	66.26	200	93	43	0.39
Foothill/E. Country Club to John Muir	33,000	69.01	305	142	66	33,000	69.01	305	142	66	0.00
John Muir to SR 4 Bypass	33,000	69.01	305	142	66	33,000	69.01	305	142	66	0.00
SR 4 Bypass/Concord to Fairview	38,800	69.97	340	158	73	38,800	69.97	340	158	73	0.00
Fairview to Minnesota	38,800	69.97	340	158	73	38,800	69.97	340	158	73	0.00
Minnesota to Griffith	38,800	69.97	340	158	73	38,800	69.97	340	158	73	0.00
Griffith to Walnut	28,200	68.33	275	128	59	29,000	68.45	280	130	60	0.12
<i>Deer Valley</i>											
North of Balfour	16,000	66.12	188	87	41	17,500	66.51	200	93	43	0.39
Balfour to Marsh Creek	4,000	60.1	75	35	16	4,000	60.1	75	35	16	0.00
<i>Marsh Creek</i>											
Deer Valley to Camino Diablo	4,500	60.86	81	38	17	5,300	61.57	90	42	19	0.71
Camino Diablo to Fairview	7,500	63.08	114	53	24	8,300	63.52	122	56	26	0.44
Fairview to Vasco	4,000	59.70	75	35	16	16,500	64.60	192	89	41	4.90
Vasco to Walnut	20,000	67.34	219	101	47	25,000	68.40	257	119	55	1.06
Walnut to Sellers	17,400	66.74	199	92	43	20,200	67.38	220	102	47	0.64
<i>Walnut</i>											
SR 4 Bypass to Balfour	10,900	64.59	146	68	31	13,600	65.55	169	78	36	0.96

**TABLE 3.6-12
65 CNEL CONTOUR PROJECTIONS
(FUTURE + PROJECT + ANNEXATION)**

Roadway Segment	Future (Year 2025)				Future (Year 2025) + Project + Annexation				Difference in dBA @100 Feet from Roadway		
	ADT	dBA @ 100 Feet from Roadway Centerline	Feet from Roadway Centerline to:			ADT	dBA @ 100 feet from Roadway Centerline	Feet from Roadway Centerline to:			
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour			60 CNEL Noise Contour		65 CNEL Noise Contour	70 CNEL Noise Contour
Balfour to Concord	10,400	64.38	141	66	30	13,100	65.38	165	77	36	1.00
Concord to Marsh Creek	7,600	63.02	115	53	25	10,300	64.34	140	65	30	1.32
Marsh Creek to Vasco	5,200	61.37	89	41	19	5,200	61.37	89	41	19	0.00
Vasco to Camino Diablo	2,300	57.83	52	24	11	2,300	57.83	52	24	11	0.00
<i>Camino Diablo</i>											
Marsh Creek to Walnut	3,000	59.10	62	29	13	3,000	59.10	62	29	13	0.00
<i>Vasco</i>											
Walnut to Marsh Creek	20,000	67.09	218	101	47	21,300	67.37	228	106	49	0.28
Marsh Creek to Fairview	29,400	68.77	283	131	61	35,400	69.57	320	148	69	0.80
Walnut to Camino Diablo	22,000	70.01	329	153	71	23,300	70.26	342	159	74	0.25
<i>Concord</i>											
Fairview to Walnut	2,900	58.96	60	28	13	3,400	59.65	67	31	14	0.69
Walnut to Sellers	800	53.36	26	12	6	1,300	55.47	35	16	8	2.11
<i>Fairview</i>											
North of Balfour	18,000	66.76	204	95	44	21,000	67.43	226	105	49	0.67
Balfour to Concord	13,000	65.35	164	76	35	16,000	66.25	188	87	41	0.90
Concord to Marsh Creek	3,500	59.77	68	32	15	10,500	64.54	142	66	31	4.77
<i>Foothill</i>											
North of Balfour	14,400	65.41	176	82	38	16,900	66.49	195	91	42	1.08
<i>E. Country Club</i>											

**TABLE 3.6-12
65 CNEL CONTOUR PROJECTIONS
(FUTURE + PROJECT + ANNEXATION)**

Roadway Segment	Future (Year 2025)				Future (Year 2025) + Project + Annexation				Difference in dBA @100 Feet from Roadway			
	ADT	dBA @ 100 Feet from Roadway Centerline	Feet from Roadway Centerline to:			ADT	dBA @ 100 feet from Roadway Centerline	Feet from Roadway Centerline to:				
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour			60 CNEL Noise Contour		65 CNEL Noise Contour	70 CNEL Noise Contour	
South of Balfour	14,400	65.41	176	81	38	16,900	66.49	195	91	42	1.08	
<i>SR 4 Bypass</i>												
North of Balfour	60,500	72.15	457	212	98	66,500	72.56	487	226	105	0.41	
Balfour to Fairview	29,400	68.51	283	131	61	29,400	68.51	283	131	61	0.00	
<i>Sellers</i>												
SR 4 Bypass to Marsh Creek	1,500	56.09	39	18	8	3,000	59.10	62	29	13	3.01	
<i>John Muir</i>												
Balfour to E. Country Club	7,900	63.19	118	55	25	8,900	63.71	127	59	27	0.52	
E. Country Club to Fairview	1,700	56.39	42	20	9	5,200	61.24	89	41	19	4.85	

Source: Modeled results calculated using the Federal Highway Administration's Highway Noise Prediction Model (FHWA RD-77-108) together with several roadway and site parameters.

The highest noise increase would occur along Marsh Creek Road extending from Fairview Avenue to Vasco Road, which would have a noise increase of 4.9 dBA. Under the “2025 Without Project” scenario, this roadway segment would be 59.7 dBA at 100 feet from the roadway centerline. As such, projected noise levels do not exceed the established criteria/threshold levels, resulting in less than significant impacts in this regard.

In addition, the two projects are distant enough from each other that their stationary-source noise would not combine. Thus, the cumulative noise impacts of the Vineyards and Annexation Site Projects would not be significant.

REGIONAL CUMULATIVE IMPACTS

Regional cumulative impacts were addressed in the General Plan Update EIR (2001) and found to be less than significant.

Mitigation 3.6-I. Cumulative Noise Impacts: The project would have a less than significant cumulative noise impact, therefore no mitigation is required. (Less Than Significant Impact).

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3.7 VISUAL RESOURCES

3.7.1 ENVIRONMENTAL SETTING

Regional Setting

The City of Brentwood is located in Contra Costa County, which is one of nine counties in the San Francisco Bay Area. Contra Costa County extends from the eastern banks of the San Francisco Bay to the San Joaquin Delta and the Central Valley. It is the ninth most populous county in California. The City of Brentwood is located in the eastern portion of the County and is approximately 50 miles east of San Francisco and 50 miles west of Sacramento. The City is located on the banks of the San Joaquin River and near the entrance to the agriculturally rich San Joaquin Delta (Refer to Exhibits 2-1 and 2-2). The City of Brentwood encompasses an area of approximately 64 square miles, including lands outside of the city limits but within the City's planning area. The City's population is approximately 24,385 people (ABAG, 2002).

The San Joaquin River and San Joaquin Delta region is located to the north and northeast of the City of Brentwood. The City of Antioch lies to the northwest of Brentwood. The city of Oakley is located to the north, and the unincorporated communities of Discovery Bay and Byron are located to the east of the City. Unincorporated lands of Contra Costa County lie to the south and west of the City.

The region transitions from the relatively flat terrain of the Central Valley to gently sloping hills west and southwest of the City approaching the foothills of the Diablo Range. Mount Diablo rises to an elevation of 3,849 feet above sea level, providing a dominant visual feature to the west of the City.

The City is surrounded by agricultural lands and large open fields, which largely define Brentwood's visual character. These agricultural lands and the expansive open space of the Diablo Range to the west of the City creates a visual separation between the City and neighboring communities and contributes to a rural "small-town" character.

The downtown area of the City reflects the history of the area and its agricultural past. A mix of historic buildings, local-serving uses, and civic buildings such as the City Hall makes up the downtown area. Moving outward from the Downtown area a more contemporary and suburban appearance can be found with broad arterial streets, modern shopping centers, and residential subdivisions.

Local Setting and Visual Character

Vineyards Project

The proposed Vineyards project site is approximately 481 acres and consists of undeveloped rolling hills with grasslands and scattered oak trees. To the north and northeast of the site is the Summerset active adult residential community. To the south is the potential site for a community college and scattered rural residential properties. The John Marsh Home is located to the south of the site.

Unincorporated lands of Contra Costa County lie to the west, and are largely undeveloped and characterized by rolling grasslands with scattered trees.

The planned Segment 3 of the State Route 4 (SR4) Bypass will flank the Vineyards project site's northeastern boundary. The purpose of the Bypass is to ease traffic congestion in Brentwood and Oakley and to provide access to the growing areas of southeast Antioch and western Brentwood.

Annexation Sites

The community college site that will be considered for annexation by the City of Brentwood is currently vacant land consisting of non-native grasses. The community college site is located south of the Vineyards project site. The topography of the site is generally flat with no distinguishing visual features or landmarks.

The John Marsh Home site will also be considered for annexation by the City of Brentwood and is located to the southwest of the Vineyards project site. The John Marsh Home is a registered historic landmark and dates back to 1856. The home is currently in a state of disrepair. The California State Parks and the John Marsh Home Trust/Board has the desire to restore the home and make it available for park uses. The site being considered for annexation includes the John Marsh Home and surrounding area. The site has scattered oak trees and is flanked on the north by Marsh Creek and associated riparian habitat.

Relevant Goals Objectives and Policies

Brentwood General Plan, 2001-2021

The Brentwood General Plan contains a number of policies that direct the future and long-term use of the Vineyards project site and the Annexation Sites. Other General Plan policies relevant to other environmental issues are incorporated into those sections of this EIR and are not duplicated in the aesthetics/visual resources discussion. Goals and policies relevant to aesthetics and visual resources are found in the Community Design Element of the General Plan. Among the policies relevant to the aesthetics/visual resources discussion are the following:

Goal 1 – High Design Standards

The High Design Standards goal of the Community Design Element seeks to “promote the highest standards of architecture and site design for all development projects, both public and private.” The specific policies to accomplish this goal that are applicable to the proposed project are listed below.

- ❖ Policy 1.2 – Well-Defined Neighborhoods: Residential neighborhoods should be well defined with park recreation facilities, schools, open space, and neighborhood commercial land uses that incorporate unifying landscape and architectural themes.
- ❖ Policy 1.3 – Quality Landscaping and Design: Encourage quality landscape and design.
- ❖ Policy 1.4 – Character of Streets: Create streets, which are pedestrian friendly and provide views of abutting neighborhoods.

Goal 2 – Views of Natural Features

The Views of Natural Features goal of the Community Design Element seeks to “preserve and enhance the views of dominant natural features (i.e., Mt. Diablo, the Foothills and local open space).” The specific policies to accomplish this goal that are applicable to the proposed project are listed below.

- ❖ Policy 2.1 – Preserve Views: Preserve views of the surrounding countryside, landmarks, and significant natural features such as Mount Diablo, nearby hills and ridge lines and view shed corridors within developments.

Goal 3 – Small Town Identity:

The Small Town Identity goal of the Community Design Element seeks to, “Attempt to create a sense of “place” for the community by preserving and enhancing the identity and small town rural character of Brentwood.” The specific policies to accomplish this goal that are applicable to the proposed project are listed below.

- ❖ Policy 3.1 – Maintain Rural Character: Maintain and enhance the architectural character and rural heritage of the existing down town area and the Brentwood community as a whole.

3.7.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Significant impacts related to aesthetics and visual resources were determined from criteria stated in *Appendix G of the State CEQA Guidelines*. For the purposes of this analysis, an aesthetics/visual resource impact is considered significant if the project would:

Thresholds of Significance

- ❖ Substantially degrade the existing visual character or quality of the site and its surroundings.
- ❖ Have a substantial adverse effect on a scenic vista.
- ❖ Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway.
- ❖ Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

IMPACT 3.7-A. Degradation of Visual Character - Vineyards Project: The City of Brentwood has a rural, small-town atmosphere that defines its visual character and is an important asset to its residents. The proposed Vineyards project has been designed with this in mind and with substantial public input to minimize degradation of the visual character and to maintain the small-town rural character of the City. However, the Vineyards project would result in a change to the visual character of the site as seen by neighboring residences and those passing by the site on the SR4 Bypass. (Significant Impact).

The City of Brentwood is a fairly small city surrounded by open space and agricultural lands. In recent decades the Eastern Contra Costa region has seen a substantial amount of population growth. To the northwest of Brentwood are the cities of Antioch and Pittsburg, which have both grown considerably in recent years. The region's proximity to employment centers of the Bay Area, relatively moderately priced homes, and suburban or rural feel has driven much of this growth.

The City's core downtown district reflects Brentwood's past agricultural and rural heritage. Contemporary developments that have occurred on the outer edges of the City are of a more suburban character.

The proposed Vineyards project would take place on approximately 481 acres of undeveloped land in the southeast area of the City of Brentwood. The Vineyards project would be visible from the planned SR4 Bypass, Concord Avenue, and Marsh Creek Road as well as from some residential properties to the north and northwest of Vineyards project site. The Vineyards project would also potentially be visible from publicly accessible recreation lands of Mount Diablo State Park to the west and the John Marsh Home new state park directly to the south.

Views of the Vineyards project site from the planned SR4 Bypass would be altered from that of open space to urbanized land uses. Much of the discussion during the workshops that were held revolved around the design issues of the project. One of the themes developed was to build upon the successes of other development in the City and to improve on design aspects such as streetscapes and landscape choices. The portions of the Vineyards project site most likely to be visible from the SR4 Bypass would be the single-family residences and the active adult units as they are located along the Bypass frontage.

The Vineyards project plans include incorporation of extensive landscaping and berming in a manner to reduce or avoid substantial changes to views of the Vineyards project site. In addition, the Brentwood Municipal Code requires the preparation of a landscaping and tree-planting plan for new Planned Development zones (Brentwood Municipal Code, §17450.006).

The view corridor looking south on Fairview Avenue towards the foothills would be minimally altered through development of the Vineyards project (Exhibit 3.7-1). The existing view looking towards the site is of the foothills of the Diablo Range with rooftops of the Summerset Active Adult Residential Community visible along the lower elevations. The change as a result of development of the Vineyards project would not be substantial and would primarily consist of more rooftops at the lower elevations. The increase in the amount of rooftops visible from this vantage point is largely indiscernible from existing conditions. The project would be developed below the ridgelines and rooftops largely out of view and the views of the hillsides beyond would remain intact (refer to Exhibit 3.7-1). In addition, street trees along both sides of Fairview Avenue that were planted as a part of the neighboring Summerset Active Adult Residential Community will be mature within ten years. These mature trees would largely screen any view of rooftops when looking south on Fairview Avenue and would thereby prevent any substantial adverse impact.

The view from Fairview Avenue looking south towards Concord Avenue (Exhibit 3.7-2) would primarily be altered by the construction of an overpass for Concord Avenue that is required for construction of a new SR4 Bypass; which is not a change that would result from the Vineyards project. The existing view primarily consists of the lower elevation foothills of the Diablo Range. An overpass



Existing



Proposed



Proposed at 10 years

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Visual Simulation Fairview Avenue Looking South



Existing



Proposed



Proposed at 10 years

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Visual Simulation Fairview and Concord Looking South

would be constructed at Concord Avenue, the future SR4, to permit Fairview Avenue to continue onto the Vineyards project site. The existing view would be altered by the introduction of this overpass and rooftops from the single-family residences planned along the northern extent of the project boundary. Planned site landscaping would substantially screen the rooftops from offsite views, but would not obstruct views of the hills or any designated scenic resource (Exhibit 3.7-2).

Views to the west along Concord Avenue would also be altered by the Vineyards project (Exhibit 3.7-3). Properties east of the Vineyards project site can see views of Mt. Diablo and the surrounding foothills, as well as the undisturbed grasslands of the proposed Vineyards project site. Through the proposed Vineyards project, these grasslands would be developed. The view west along Concord Avenue would be altered through the proposed project by the introduction of structures on these lower elevation grasslands. A substantial amount of rooftop developed by the proposed project would be visible. Landscaping would serve to provide some screening of the rooftops and break up the visual massing when seen from this vantage point, but would not completely screen them from view. Because the development would be occurring on the lower elevations of these grasslands and foothills and the views of the foothills, ridgelines, and Mt. Diablo would remain undisturbed, development of the proposed project would not result in a substantial degradation of scenic views in this area.

Rooftops of the proposed project would also be visible from Marsh Creek Road looking north (Exhibit 3.7-4). Currently, when viewing the proposed Vineyards project site from Marsh Creek Road to the north, the undisturbed foothills of the Vineyards project site and a PG&E powerline are visible. Views to the north from Marsh Creek Road do not extend beyond the proposed Vineyards project site. Upon development of the proposed project, this view would be altered by the introduction of rooftops and building profiles. Landscaping would screen much of these buildings and disrupt the massing of the residential homes. However, the landscaping would not screen all of the rooftops. Views of the foothills and Mount Diablo to the northwest of the Vineyards project site would remain undisturbed and unobstructed. Vantage points that may be affected by the project would primarily be those of travelers going eastbound on Marsh Creek Road. The road is flanked on both sides by the newly acquired state park, thus there are very few residences that would be affected by this change in view (refer to Exhibit 2-2). Because few people would be affected by this change, because the prominent visual features in the area such as Mt. Diablo and the foothills would remain undisturbed, and because landscaping would be employed to screen much of the project, the proposed Vineyards project would result in a less than significant impact.

The Vineyards project would alter views of the Vineyards project site when looking northwest from the John Marsh Home (Exhibit 3.7-5). This view was discussed during the community workshops and the point of another theme that was developed to guide the project's design. The project has incorporated into its design the theme to respect the significance and importance of the John Marsh Home. Current views of the proposed Vineyards project site from the John Marsh Home are of the grasslands that characterize the site. No ridgelines or substantial topographic features are visible beyond the Vineyards project site. As proposed, the view would be altered by the introduction of building profiles and rooftops at the Vineyards site. The areas of the Vineyards project site with the greatest potential to alter views from the John Marsh Home would be the village center, the winery and the extension of Fairview Avenue. Upon maturity, landscaping and landscaping planted on a berm along Concord Avenue would serve to effectively screen the vast majority of the buildings on the proposed Vineyards project site. It is anticipated that the proposed landscaping would reach a



Existing



Proposed



Proposed at 10 years

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Visual Simulations Concord Avenue Looking West



Existing



Proposed



Proposed at 10 years

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Visual Simulations Marsh Creek Road Looking North



Existing



Proposed



Proposed at 10 years

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Visual Simulations From John Marsh House Looking Northwest

level of maturity capable of screening the majority of the proposed project within ten years, thus, the proposed project would result in a less than significant impact.

From Concord Avenue, across from the PG&E compressor station, looking west towards the Vineyards project site, the view would be altered by the construction of the single-family residences and site grading (Exhibit 3.7-6). Currently, from this vantage point looking towards the Vineyards project site, the nearest foreground hills are visible. The ridgelines of the foothills beyond the site are barely visible and do not represent a prominent visual feature from this location. Upon development of the Vineyards project, the views of grasslands and small hills of the Vineyards project site would be replaced with building profiles and a berm that would be developed along the site's border. People most affected by this change in view would primarily be those passing by the site on Concord Avenue and the residences on the opposing side of Concord Avenue. Through the incorporation of landscaping and the development of the berm, the bulk of the buildings would be screened, resulting in a less than significant impact.

This area of Concord Avenue is also the right-of-way for the planned SR4 Bypass. The SR4 Bypass, once developed, will serve as a major visual barrier between the residences on the eastern side of the right-of-way and the proposed Vineyards project. Furthermore, view of the affected residences is currently obstructed with a large (approximately 8-foot high) wall lining Concord Avenue to subdue road noise from the residences.

The view from these residences along Concord Avenue is currently obstructed, and would be further obstructed by development of the SR4 right-of-way. Those affected by the change in view from this vantage point currently do not have unobstructed views of the site. Also, there are no visually prominent features that would be obstructed by development of the Vineyards project. Furthermore, the SR4 Bypass would serve as a greater visual impediment than the proposed project. Therefore, views from the eastside of Concord Avenue in the proximity of the Vineyards project site would not be impacted to a degree that would result in an adverse significant impact (Exhibit 3.7-6).

The residential portions of the proposed project would be developed in a manner that builds upon the recent contemporary developments and seeks to expand upon them. The project also includes an agricultural landscape theme in recognition of the City's agricultural heritage. The Summerset Active Adult Residential Community is located adjacent to the site to the north, on the other side of the State Highway 4 Bypass right of way. The Vineyards project would be developed with a similar visual character and the two neighborhoods would be visually compatible. Visual consistency between the two neighborhoods would be reviewed during the City's Design Review process.

The commercial center of the development is planned in a manner reminiscent of historic village centers that were common throughout California. The project has been designed with substantial public input, including the desire to have the winery and commercial areas of the project compliment the John Marsh Home without replicating its architecture (refer to § 2.3). The project would be subject to the City's Design Review process where implementation of the project's design objectives will be verified.

It can be reasonably anticipated that the winery would include a staging area for agricultural operations and equipment storage and that the commercial areas will include storage, loading, and disposal areas. These areas should be screened from the view of offsite residences and roadways.



Existing



Proposed



Proposed at 10 years

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Visual Simulations

View from PG&E Station Looking South

The development would result in a permanent change in the onsite visual character. The site is currently open space and with the proposed project would be committed to urban development. The change in visual character would have the potential to result in significant adverse impacts. The site would be rezoned as Planned Development (PD), and upon annexation the site would have a PD zoning. As the proposed project would result in a permanent change in the visual character of the site, the proposed Vineyards project should be subject to design review to minimize significant adverse environmental impacts.

Mitigation 3.7-A.1 Degradation of Visual Character - Vineyards Project: The project proponent shall prepare a landscaping plan that will be reviewed and approved by the City of Brentwood's Planning Commission prior to approval of the Planned Development zone. The plan shall be prepared by a licensed landscape architect and shall pay special attention to screening portions of the development that may be considered visually unappealing and inharmonious from view of the John Marsh Home and surrounding State Park. Any industrial portions of the Village Center and winery shall be screened from offsite residences and roadways. Agricultural staging areas and equipment storage areas shall also be screened from the view of offsite residences, the John Marsh Home, and roadways. The plan shall be in substantial conformance with the parameters established in the Brentwood Municipal Code § 17.630.010. (Less Than Significant Impact).

Mitigation 3.7-A.2 Degradation of Visual Character - Vineyards Project: The City of Brentwood Planning Commission shall perform design review on the Vineyards project prior to issuance of building permits. The Planning Commission shall review the proposed project to ensure that it: represents a well-composed urban design that is harmoniously related to adjacent developments; has a high quality exterior design with regard to lighting, building heights, site layout, building materials, color, and landscaping; is of a quality that serves to protect the value of private and public investments in the vicinity; and meets the provisions and criteria established in the Brentwood Municipal Code Chapter 17.820 and the Brentwood Design Guidelines. (Less Than Significant Impact).

IMPACT 3.7-B. Degradation of Visual Character – Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Potential development of a community college, however, would result in a change in the visual character of the site from its currently undeveloped state to an urbanized land use. This change would have the potential to result in a degradation of the visual character on the site. This potential effect would result in a significant impact. (Potentially Significant Impact).

The annexation of the two sites being contemplated by the City of Brentwood would not result in any change to the visual character of the sites. No specific development proposals are being considered at this time that would result in any change to the visual character of the site. The two sites currently have a General Plan designation of Business Park.

The site for the John Marsh Home General Plan designation would be changed to Park. The intent is to restore the John Marsh Home and to further open the area to the public. The plan envisioned for this site would ultimately enhance and preserve the existing visual character of the site by preserving the John Marsh Home and providing public access.

The community college site General Plan designation would be changed from Business Park to School-Community College. Both the existing and proposed General Plan designations would permit developments that would result in a permanent change in the visual character of the site. It is anticipated that a community college of approximately 5,000 students may be developed on the site. The development of a community college of this size would represent a permanent change in the visual character of the site. The site is currently vacant land that is predominately flat with no visually substantial features.

Incorporation of design guidelines, and visual analysis during the project level environmental review, would limit the change in visual character but would still be a substantial change, resulting in a significant adverse visual impact.

Mitigation 3.7-B.1. Degradation of Visual Character – Annexation Sites: Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or the addition of an interpretive center inside the Home. These potential improvements would result in less than significant impacts, which do not require mitigation. (Less Than Significant Impact).

Mitigation 3.7-B.2. Degradation of Visual Character – Annexation Sites: Potential development of a community college would result in potentially significant impacts with regard to degradation of the site’s visual character. These impacts would be reduced with the following mitigation measures (Less Than Significant Impact).

- ❖ When and if plans are developed for the community college site, further environmental review shall be conducted by the Contra Costa Community College District and include a visual assessment to identify the change in the site’s visual character and potential adverse impacts to on- or off-site views. Moreover, the visual assessment shall incorporate measures to minimize the development’s impact on visual resources. Measures to mitigate project effects of any future community college shall include, but are not limited to, incorporation of landscaping to serve as screening, orientation of buildings to limit obstruction of existing views from sensitive viewpoints, and use of aesthetically pleasing design features and building materials. (Potentially Significant Impact).
- ❖ When and if plans are developed for the community college site, the Contra Costa Community College District should present the project to the State Architect for review and approval. The State Architect shall review the proposed project to ensure that it represents a well-composed urban design that is harmoniously related to adjacent developments; has a high quality exterior design with regards to lighting, building heights, site layout, building materials, color, and landscaping; and is of a quality that serves to protect the

value of private and public investments in the vicinity. (Less Than Significant Impact).

IMPACT 3.7-C. Effect on Scenic Vistas - Vineyards Project: The proposed Vineyards project would alter views of the site from the surrounding roadways, intersections, adjacent residential properties, and publicly accessible properties. Substantial consideration has been given to the Vineyards project effects on scenic vistas during the conceptual design and planning process. The project would result in a substantial visual change to undeveloped, rural lands that make up the proposed Vineyards project site. However, it would have a minimal effect on scenic resources and vistas beyond the boundaries of the Vineyards project site. The changes to the Vineyards project site would not result in any adverse effects to scenic vistas. (Less Than Significant Impact).

As discussed below and in Impact 3.7-A, the proposed Vineyards project would not have an adverse impact on scenic vistas.

The proposed project has had a substantial amount of public involvement and input during its design. Four separate community workshops were held from April to July, 2003 to gather public input on the issues and opportunities presented by development of the site. Among the issues and opportunities discussed at public workshops related to the project's visual and aesthetic effects. The workshops were attended by members of interested and affected government agencies, citizens groups, historic and environmental groups, businesses, and residents of the community.

During the workshops, the attendees participated in a number of exercises designed to assess what visual characteristics should be maintained and developed into the project design. A number of themes were developed which guided the project's design. The themes relevant to the project's effects on visual resources and aesthetics included: protecting the ridgelines that provide a backdrop to the property and are a visual resource for the City of Brentwood; optimizing and enhancing the adjacent open space as both a community element and lifestyle resource; building on the success of previous developments in the City and improving on design aspects; and respecting the significance of the John Marsh Home and the views and character of the experience that will be had while visiting the historical site.

Most relevant to the discussion of the project's effects on scenic vistas is the theme of protecting the ridgelines that serve as a backdrop to the Vineyards project site and visual resource for the entire City. The base of the hill slope forms the western boundary of the Vineyards project. Elevations of the ridgelines range from approximately 370 to 390 feet above sea level. To protect ridgelines, the project structures have been designed to maintain an approximate 95-foot vertical distance from rooftops to the ridgeline. By designing the project in a manner that avoids development on ridgelines and keeping rooftops below the horizon, the natural contours of the ridgelines visible from the project area would be retained and ridgelines in the southwestern portion of the City of Brentwood would not be substantially and adversely affected by development of the Vineyards project.

The Vineyards project would also construct a 4 MG water tank on the north-facing slope in the southwestern portion of the proposed Vineyards project site. The project requires only ½ half of this capacity. This city is using the available elevation to accommodate further planned capacity in the water zone. The preliminary plans call for a 4-million gallon water tank that will be about 150 feet in diameter and 30 feet high. A pad will be cut into the hill to accommodate this above ground steel tank. A soil nail wall will more sensitively support the hillside behind the water tank. A soil nail wall is designed to imitate natural elements such as a rock outcrop (Exhibit 3.7-7). The tank pad would be set out elevation 320 to correspond to the City's existing Zone II water system. The elevation of the hilltop just beyond the water tank would remain at to 420 feet. The proposed water tank would not alter the natural contours of the existing highest ridgeline and would be located 500 feet north of the highest ridgeline on the slope face. The natural grade of this slope would be altered. The change in the slope between the finished grade and natural grade may be visible from some viewpoints. Landscaping around the water tank and glimpses of the soil nail wall will create the view of a rock escarpment shaded by vegetation. If for some reason the City decides not to build the additional capacity at this time, a 2 million gallon tank will be constructed in the same location as proposed for the 4 MG tank. This 2 MG tank would be at the same elevation, be 30 feet high and approximately 75 feet in diameter. The City is additionally investigating the viability of constructing a buried concrete water tank in place of the steel tank. If this change were to be implemented, the view of the ultimate facility would be further minimized and the soil nail wall would not be necessary.

Mitigation 3.7-C. Effect on Scenic Vistas – Vineyards Project: The proposed Vineyards project would not result in a significant adverse effect to scenic vistas; therefore no mitigation is necessary. However, Mitigation Measures 3.7-A.1 and 3.7-A.2 would further reduce this already less than significant impact through design review and landscaping requirements. (Less Than Significant Impact).

IMPACT 3.7-D. Effect on Scenic Vistas - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. Development of a potential community college would result in less than significant impacts to scenic vistas because the site is located at a relatively low elevation in the City and the site is nearly level with no potential to disturb ridgelines and/or substantially obstruct views of offsite ridgelines. Improvements to the John Marsh Home would result in less than significant impacts to scenic vistas because improvements to the John Marsh Home are anticipated to be minimal including, restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. These improvements would have little potential to result in significant adverse effects on scenic vistas. (Less Than Significant Impact).

The potential community college is envisioned to ultimately serve up to 5,000 students. The effects on scenic vistas of the anticipated development would be similar to that of the proposed Vineyards



project. The structures on the community college site would be visible from the SR4 Bypass. However, the community college site is primarily flat and development on the site would not have the potential to disrupt contours of the ridgelines of the surrounding hillsides or views of Mt. Diablo. Thus, the potential future development of the community college site would not adversely affect scenic vistas.

No new development is envisioned for the John Marsh Home, aside from what is needed to provide services for park visitors. The small structures and onsite improvements necessary to accommodate visitors at the park would not have a significant impact on scenic vistas because they would not obstruct existing vistas.

No specific development proposals are being considered at this time for the two sites proposed for annexation. Project level environmental review would be required by the CCCCD for any specific development at the community college site and may be required for plans at the John Marsh Home.

Mitigation 3.7-D. Effect on Scenic Vistas - Annexation Sites: Potential future development of the Annexation Sites would not result in an adverse effect on scenic vistas, therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.7-E. Damage to Scenic Resources - Vineyards Project: The Vineyards project is located in the vicinity of scenic resources that have been identified as being of local, regional, and/or statewide importance such as the foothills of the Diablo Range, Mount Diablo, and the John Marsh Home. While these resources are not located on the Vineyards project site, the proposed project would have the potential to alter views to these resources. However, substantial consideration of the project's potential to degrade scenic resources has been given during the conceptual design and planning phases. Through design parameters (e.g., buildings placed below ridgelines) and incorporation of landscaping, the proposed Vineyards project would have a less than significant impact on offsite scenic resources. (Less than Significant Impact).

Scenic resources in the vicinity of the Vineyards project site include the vast agricultural and open space found throughout the area, the Diablo Range, and the John Marsh Home. The project would not result in a substantial change to views of the John Marsh Home from residences in the area as the John Marsh Home site is already visually obstructed by topography and the PG&E facility (i.e., Brentwood Terminal) located on Concord Avenue.

The visual quality of the proposed Vineyards project, and its associated effects, have been at the forefront of the discussion concerning this project and have been discussed in a number of forums including the community workshops that were held. As described in the discussion under Impact 3.7-A, a number of themes were developed during public workshops that help guide the design of the proposed project. Most pertinent to the potential damage to scenic resources impact would be the themes regarding protecting the ridgelines, enhancing the adjacent open space, and respecting the historic significance of the John Marsh Home (refer to § 2.3).

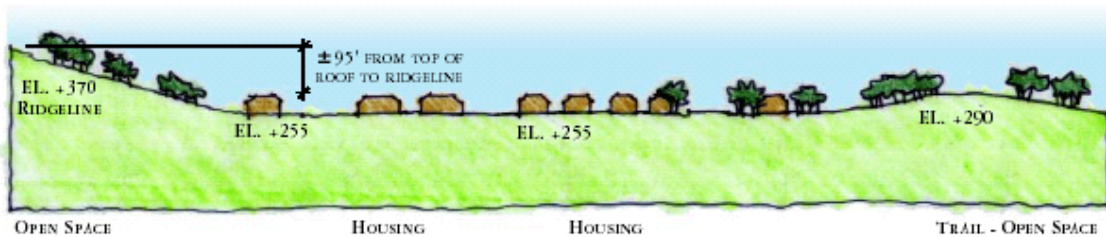
As described under the discussion pertaining to the project's effects on scenic vistas, the project would be limited to developing on lands with an elevation of 270 feet or less and to maintain a vertical distance of at least 95 feet from the rooftops to the ridgeline. These design themes would limit the

impacts from the Vineyards project to offsite views of the ridgelines and would maintain the natural horizon and views of the Diablo Range, Mt. Diablo, and the foothills that provide a backdrop for the City (Exhibit 3.7-8).

**EXHIBIT 3.7-8
SITE SECTIONS-VINEYARDS PROJECT**



Section AA



Section BB



Section CC

Source: Hart Howerton, 2003

The winery would be developed on an elevated pad that affords views to and from the open space of the recently created state park. It would be located in the south of the site and adjacent to the John Marsh Home. During the workshops, the public consensus was to allow the winery in the local public view. The public indicated an interest in having the winery developed with quality architecture and have the winery become a scenic point of reference. Even though the building would be designed to be publicly visible, landscaping would still be incorporated pursuant to the City’s Municipal Code and Mitigation Measure 3.7-A to screen the associated winery building from offsite properties. Special attention including berming and landscaping has been proposed to further obstruct the view of the facility from the John Marsh Home.

The winery would be visually obstructed from view from offsite properties due to its location on the southern side of the Vineyards project site and the intervening single-family residences and planned

landscaping as well as the SR4 Bypass. Visitors to the winery would still have views of the vast open space surrounding the Vineyards project site. This would provide opportunities to increase visitor's exposure to the natural beauty of area and the John Marsh Home. Increased exposure of the area would in turn potentially generate interest in the further protection of the scenic resources existing in the region.

Publicly accessible recreation lands in the project vicinity that would potentially be affected by the proposed project may include Mount Diablo State Park, East Bay Parks and Recreation District lands in the Diablo Range Foothills, and would include the John Marsh Home and surrounding state park. Views of the site from these publicly accessible lands would be altered through the urbanization of the site. The change in views from public lands, however, would not result in a significant adverse impact. Because the proposed Vineyards project site is located adjacent to large scale residential developments (i.e., the Summerset Active Adult Residential Community) and would be flanked along its northeastern boundary by the SR4 Bypass, the urbanization of the Vineyards project site would be indiscernible from adjacent developments from the aforementioned locations.

The development of the 4-million gallon water tank on the western portion of the Vineyards project site would result in development occurring on a hillside on the site. The grading required and the water tank itself would result in a change to views of this particular hillside when viewed from residences on Concord Avenue. The hillside behind the water tank would be supported by a soil nail wall, which looks like a rock escarpment and would be aesthetically comparable to natural landscape features (refer to Exhibit 3.7-7). The water tank would not result in an obstruction of views beyond the Vineyards project site and would be constructed below the ridgeline in a manner that would not disrupt the contours of the horizon. Landscaping has been required, as well as design review by the City of Brentwood, to minimize adverse visual impacts (refer to discussion of Impact 3.7-A). If for some reason the City decides not to build the additional capacity at this time, a 2 MG tank will be constructed in the same location as proposed for the 4 MG tank. This 2 MG tank would be at the same elevation, be 30 feet high and approximately 75 feet in diameter.

The proposed Vineyards project would be in the southeastern portion of the City, adjacent to existing residential developments. The SR4 Bypass is planned in this area as well. As required by the City's Municipal Code and Mitigation Measures 3.7-A.1 and 3.7-A.2, landscaping would be incorporated into the project and the final design would be reviewed by the City of Brentwood. Views of the site from publicly accessible recreation lands would not be substantially and adversely affected due to the adjacent urbanized developments and the design features and landscaping that would be incorporated.

Mitigation 3.7-E. Damage to Scenic Resources -Vineyards Project: The Vineyards project would not significantly affect scenic resources; therefore no mitigation is necessary. However, Mitigations 3.7-A.1 and A.2 would further reduce this already insignificant impact. (Less Than Significant Impact).

IMPACT 3.7-F. Damage to Scenic Resources - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. Development of a potential community college would result in less than significant impacts to scenic resources because the site is relatively level, at a low elevations, and has no visually significant features. Improvements to the

John Marsh Home site could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. These improvements would have little potential to result in significant adverse effects on scenic resources. (Less Than Significant Impact).

Development on the community college site would not result in the disturbance of any scenic resources. The site is relatively level and void of any visually significant trees, vegetation, rock outcrops, or other features. The site is low with an average elevation of approximately 145 feet. Development of the community college site would result in a less than significant impact on scenic resources.

The John Marsh Home was built in the 1850's. The John Marsh Home is both a historic and visually prominent feature for the region. Currently, the home is in a state of disrepair and is not open to the public. Efforts are currently underway to raise funds to restore the home and open the area to the public. The site is currently owned by the California Department of Parks and Recreation. No specific development proposals are being considered at this time that would result in any damage to scenic resources.

The annexation of the John Marsh Home site would enable the City to provide and maintain water, wastewater, solid waste and storm water as well as police and fire services. In addition, annexation into the City will allow the City to use municipal park funds and taxes to maintain and enhance the park. This will help facilitate restoration of the John Marsh Home and ultimately result in a beneficial visual change by opening the facility for public viewing.

The annexation of the two sites being contemplated by the City of Brentwood would not result in any damage to scenic resources. No specific development proposals are being considered at this time that would result in an impact to scenic resources. There are no visually distinguishing scenic resources located on the community college site and no development is being considered or is anticipated on the John Marsh Home site that would result in damage to scenic resources.

Mitigation 3.7-F. Damage to Scenic Resources - Annexation Sites: The Annexation Sites would have a less than significant impact on scenic resources and, therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.7-G. Light and Glare - Vineyards Project: The proposed Vineyards project would introduce new sources of light and glare to a property that is currently undeveloped. The project's generation of light and glare would have the potential to result in a degradation of atmospheric night-sky conditions and could potentially result in safety hazards to passing motorists on the planned SR4 Bypass. (Significant Impact).

The Vineyards project has the potential to generate a substantial amount of light and glare. Currently, the Vineyards project site is vacant with no light-generating sources. Adjacent sources of light consist of low-level security lighting for the PG&E facility (Brentwood Terminal) directly beyond the northeast corner of the Vineyards project site and residential and street lighting from the housing subdivisions and rural properties located to the north, northeast, and east of the site.

The portion of the proposed Vineyards project with the greatest potential to result in a substantial adverse contribution of light and glare would be in and around the Village Center. Light and glare generated by residences is typically low-level and is a minimum amount necessary for security or convenience. The potential impacts associated with the generation of light and glare also includes potential degradation of atmospheric night-sky conditions, and potential introduction of light sources causing nuisance or inconvenience.

The increase in atmospheric lighting has the potential to reduce the clarity and visibility of stars as viewed from ground-level in the area. There is an existing atmospheric effect from lights north of Brentwood in the Cities of Antioch and Pittsburg, and to a lesser extent in the City of Brentwood itself. The proposed Vineyards project site is located in the southeastern portion of the City. Further south, vast expanses of open space and agricultural lands exist, and do not include lighting sources.

Drivers passing by on the planned SR4 Bypass and other nearby roadways, visitors/users of local businesses, and residents of the adjacent housing subdivisions would view the incremental increase in nighttime lighting levels. Light sources for the Vineyards project would be security lighting on buildings, parking lot lighting, signage, street lamps and automobile headlights. Lighting that is excessive and improperly placed and/or screened could cause a nuisance or inconvenience for users, passers-by on local roadways, and/or adjacent neighborhoods.

Specific attention should be paid in the Vineyards project to utilizing the minimum amount of lighting necessary for security purposes, casting light in a direction that does not improperly shine upon or spillover onto adjacent uses, screening lights, and avoiding placing sources of lights (e.g., signs, parking lot lights) directly adjacent to neighboring uses.

The following mitigations shall be incorporated into the project to reduce potential light and glare effects to a less than significant level.

Mitigation 3.7-G.1. Light and Glare - Vineyards Project: The project proponent shall prepare a lighting plan that shall be part of the review and approval by the Brentwood Planning Commission. To minimize potential disturbance that may be caused by outdoor lighting to the maximum extent possible, and to avoid excessive contributions to atmospheric night sky conditions, outdoor lighting shall include the following standards:

- ❖ **Parking lot and exterior building lighting shall be installed to the approval of the Community Development and Police Departments.**
- ❖ **All lighting shall be shielded from abutting properties.**
- ❖ **No lighting shall be of the type or in a location such that it constitutes a hazard to vehicular traffic, either on private property or on abutting streets.**
- ❖ **The spacing and height of the standards and luminars shall be such that a maximum of seven foot candles and a minimum of one foot candle of illumination are obtained on all vehicle access ways and parking areas.**
- ❖ **The height of light standards shall not exceed 20 feet.**

- ❖ To prevent damage from automobiles, standards shall be mounted on reinforced concrete pedestals or otherwise protected.
- ❖ Under canopy lighting elements shall be recessed or concealed in such a manner as not to be directly visible from a public street.
- ❖ Lighting shall be installed around the perimeter of the building and be vandal resistant.

(Less Than Significant Impact).

Mitigation 3.7-G.2. Light and Glare - Vineyards Project: To minimize glare generated by the proposed project, the project proponent shall design the project with non-reflective glass and construction materials to the extent feasible. The glass and building materials shall be part of the review and approval by the Planning Commission. (Less Than Significant Impact).

IMPACT 3.7-H. Light and Glare - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Potential development of a community college, however, would result in the introduction of light and glare generating sources to a site that is currently undeveloped. This potential effect would result in a potentially significant impact. (Potentially Significant Impact).

The Annexation of the John Marsh Home site and the community college sites would not result in any physical changes on these properties. No specific development proposals are being considered at this time that would introduce new sources of light and glare to the two sites.

The anticipated development at the John Marsh Home could include minor improvements necessary to renovate the Home and to accommodate visitors on the site and would not likely result in substantial new sources of light and glare.

The anticipated development on the community college site could result in the introduction of new sources of light and glare through facility lighting, and security lighting. During the project-level environmental review, visual impacts with regard to light and glare should be assessed. In addition, a lighting plan should be prepared.

Mitigation 3.7-H.1 Light and Glare – Annexation Sites: Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. These potential improvements would result in less than significant impacts, which do not require mitigation.

Mitigation 3.7-H.2 Light and Glare – Annexation Sites: Potential development of a community college would result in potentially significant light and glare impacts.

These impacts would be reduced to a less than significant level with application of the following mitigation measure(s):

If any development plans are proposed for the community college site, the Contra Costa Community College District shall conduct an environmental review that includes an assessment of the project's visual impacts with regard to light and glare generation. If significant impacts are identified, mitigation measures shall be required to reduce these impacts to a less than significant level. Prior to the approval of any development plans for the community college, the development plans shall incorporate mitigation measures required in the environmental review. Such measures to consider shall include, but not be limited to, the following:

- ❖ Parking lot and exterior building lighting shall be installed to the approval of the Community Development and Police Departments.
- ❖ All lighting shall be shielded from abutting properties.
- ❖ No lighting shall be of the type or in a location such that it constitutes a hazard to vehicular traffic, either on private property or on abutting streets.
- ❖ The spacing and height of the standards and luminars shall be such that a maximum of seven foot candles and a minimum of one foot candle of illumination are obtained on all vehicle access ways and parking areas.
- ❖ The height of light standards shall not exceed 20 feet.
- ❖ To prevent damage from automobiles, standards shall be mounted on reinforced concrete pedestals or otherwise protected.
- ❖ Under canopy lighting elements shall be recessed or concealed in such a manner as not to be directly visible from a public street.
- ❖ Lighting shall be installed around the perimeter of the building and be vandal resistant.

(Less Than Significant Impact).

IMPACT 3.7-I. Consistency with General Plan Community Design Policies - Vineyards Project:

The proposed Vineyards project has been the subject of a number of recent public workshops. A substantial amount of discussion centered on the project's visual and aesthetic effects, resulting in a project that is consistent with the General Plan's Community Design Policies. In addition, pursuant to City Code requirements, the site would be hydro-seeded after grading and would, therefore, be consistent with General Plan Policy 2.1 of the Community Design Element. (Less Than Significant Impact).

As described previously, the City of Brentwood has a rural small-town atmosphere that is considered a desirable aspect among its residents. The preservation and enhancement of this atmosphere is an important objective of the Brentwood General Plan Community Design Element. Among the objectives in the Community Design Element is the preservation of the views of natural features, encouraging high design standards, and maintaining the small town identity. The applicable goals and

policies are described earlier in the this section (see page 3.7-2). Analysis of the proposed Vineyards project with the goals and policies of the Community Design Element is presented below. The proposed Vineyards project would be consistent with the General Plan designations proposed for the sites, and would, therefore, be consistent with the General Plan and SPA J policies relating to visual resources (refer to Section 3.1, Land Use). Potential future development of the Annexation Sites also is likely to be consistent with the General Plan's community design policies. However, because no development plans have been prepared, it is not possible to assess site design at this time.

Goal 1-High Design Standards

Goal 1 of the Community Design Element is to promote the highest standards of architecture and site design for all development projects. The policies applicable to this project are Policies 1.2 through 1.5. Policy 1.1 is not applicable to the discussion of visual resources and aesthetics as it addresses the protection of the Downtown and development that would detract from the economic viability of the Central Business District.

Policy 1.2 - Well-Defined Neighborhoods

Policy 1.2 of the Community Design Element seeks to have well-defined neighborhoods with park and recreation facilities, schools, open space, and neighborhood commercial land uses that incorporate unifying landscape and architectural themes.

- ❖ Vineyards Project: The proposed Vineyards project would be consistent with Policy 1.2 of the Community Design Element. As previously described, the project has been the subject of a number of community workshops where issues such as neighborhood design were discussed. The proposed Vineyards project would include approximately 100 acres of open space and park and recreation facilities. A recreation center is also planned for use by residents as are trails that would also provide linkages to the state park to the south of the site and throughout the project's open space. Multi-use paths would also be developed that allow pedestrian, bike, and golf-cart use throughout the project, and providing linkages to other neighborhoods such as the Summerset active adult residential community. An amphitheatre would also be provided at the winery that is anticipated to host cultural events for the entire community. The project includes a Village Center consisting of residential uses, neighborhood commercial, hotel, and assisted care facilities that would all be developed with complimentary architectural styles and landscaping. The proposed project has been planned in accordance with the goals and policies of the General Plan and would be consistent with Policy 1.2 of the Community Design Element.

Policy 1.3 - Quality Landscaping and Design

Policy 1.3 of the Community Design Element seeks to encourage quality landscaping and design as part of the goal to attain high design standards for all new development within the City.

- ❖ Vineyards Project: As previously discussed, the design of the project has been the subject of numerous public workshops. At these workshops, the Vineyard's project design was discussed and community input was received that guided the design of the project in a manner that meets the City's goal of having new projects developed with high-quality architecture. Landscaping was also discussed. Mitigation 3.7-A.1 and 3.7-A.2 and the

City's Municipal Code require the preparation and implementation of a landscaping plan. The plan would be reviewed and approved by the City prior to approval. Moreover, the Vineyards project would be required to undergo design review by the City's Planning Commission prior to project approval. The Planning Commission would review the project's design and landscaping to maximize consistency with neighboring land uses, General Plan policies, and to make recommendations as needed.

Policy 1.4 - Character of Streets

Policy 1.4 directs that streets be designed to be pedestrian friendly and to provide views of abutting neighborhoods. The proposed project would create small private residential streets and cul-de-sacs as well as extending Fairview Avenue beyond its current terminus on Concord Avenue.

- ❖ Vineyards Project: The proposed project would be consistent with Policy 1.4. Fairview Avenue would be extended from its current terminus on Concord Avenue through the Vineyards project site. This road would be a striped, two-lane road with a 42-foot parkway on both sides. An 8-foot multi-use path would be constructed within this parkway, on both sides. Bike lanes would also be provided adjacent to both lanes. The provision of multi-use paths and bike lanes would allow for a range of transportation options to be employed throughout the Vineyards project site. The substantial landscaping, street tree planting, and agricultural planting planned also provides for a buffer between pedestrians and roadways as well as providing a more visually appealing setting. The interior roads would also be two lanes without striping. Sidewalks on one side would be provided as well as planting strips separating sidewalks and roadways on the spine street. The streets are planned in a manner that would provide views of abutting neighborhoods and surrounding open space, would be visually appealing, and would be consistent with Policy 1.4 of the Community Design Element.

Goal 2 – Views of Natural Features

Goal 2 of the Community Design Element seeks to preserve and enhance views of natural features throughout the Brentwood Planning Area including Mount Diablo, the foothills, and local open spaces.

Policy 2.1 – Preserve Views

Policy 2.1 seeks to preserve views of the surrounding countryside, landmarks, natural features, and hills and ridgelines. This policy includes action programs such as avoiding any development on hillsides and ridgelines, and restricting height of structures, and revegetation of graded slopes.

- ❖ Vineyards Project: The proposed project would be consistent with Policy 2.1. The preservation of views was a point of considerable discussion at public workshops held regarding the design of the Vineyards project. Elevations of building pads would be limited to prevent unnecessary development on hillsides and to avoid development on ridgelines. A minimum vertical distance of 95 feet would be maintained between the height of the buildings and the ridgelines that form the immediate backdrop. The Vineyards project site would be graded at one time, while the actual construction of the structures and infrastructure would occur over a prolonged period of time. Pursuant to City code the project site would be hydro-seeded.

Goal 3 – Small Town Identity

Goal 3 of the Community Design Element directs the City to attempt to create a sense of place for the community by preserving and enhancing the identity and small town rural character of Brentwood. The City has a history of being a rural small town community, with a Downtown reflective of its past. Developments that have occurred outward from the Downtown area have occurred in a more contemporary manner. The City wishes to preserve the small town feel of Brentwood through certain design standards, clear urban boundaries, streetscapes and similar architectural, engineering, and planning methods. Policy 3.2 was excluded from analysis in this section of the EIR in that it pertains to existing neighborhoods and is not applicable to the proposed Vineyards project or Annexation Sites.

The Small Town Identity Goal and the policies described to achieve the goal were not adopted for the purpose of avoiding or mitigating an environmental effect as required by State CEQA Guidelines, however, the Small Town Identity Goal and Policy 3.1 would be relevant to the proposed Vineyards project and the following discussion is provided for information purposes only.

Policy 3.1 – Maintain Rural Character

Policy 3.1 of the Community Design Element seeks to maintain and enhance the architectural character and rural heritage of the existing downtown area as well as other areas of Brentwood. The action plans applicable to the proposed Vineyards project and Annexation Sites used to achieve this include conducting an inventory of historically significant buildings and areas within the Brentwood area and conducting design review to ensure architectural compatibility.

- ❖ Vineyards Project: The proposed project would be consistent with Policy 3.1 of the Community Design Element. There are no historic structures located on the proposed Vineyards project site. The Vineyards project site is located adjacent to the John Marsh Home. Among the themes developed during the public workshops conducted regarding the project was to respect the significance of the John Marsh Home. The proposed Vineyards project would be developed in a manner that would minimize impacts on views from the John Marsh Home and proposes architecture that would be complimentary to the historic structure without attempting to replicate it (refer to Exhibit 3.7-5). Furthermore, trails are being provided to the John Marsh Home State Park that would increase access and recreational opportunities to this park. The architecture of the proposed project has also been discussed extensively and is proposed to take the best of Brentwood and to build upon it. Measures have been identified in this EIR to ensure that the design and landscaping of the Vineyards project meets the standards of the City (refer to discussion of Impact 3.7-A).

Mitigation 3.7-I. Consistency with General Plan Community Design Policies – Vineyards Project: The Vineyards project would be consistent with the General Plan’s Community Design Policies and General Plan Policy 2.1; therefore no mitigation is required. (Less Than Significant Impact).

IMPACT 3.7-J. Cumulative Impacts – Degradation of Visual Character: The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present, and probable future projects in the City of Brentwood as contemplated in the City’s General Plan, would change the visual character of the area. (Significant Cumulative Impact).

The Vineyards project would change the visual character of the site as seen by neighboring residences and those passing by the site on the SR4 Bypass. With regard to the Annexation Sites, no development plans currently exist for the community college site, but potential future development of that site could result in further changes to the visual character of the area. The combination of development on the Vineyards project site and any potential development on the community college site would together result in a cumulative change in the visual character in this southwestern portion of the City of Brentwood. With mitigation for the Vineyards project and Annexation Sites, this impact would be reduced to a less than significant level. Potential future improvements to the John Marsh Home site are anticipated to be minor and are not expected to result in any significant visual impacts.

With respect to impacts from other projects, the SR4 Bypass is a planned cumulative project that would affect the same visual area as the Vineyards project and that could have significant visual impacts. Moreover, the 2001 EIR for the City of Brentwood General Plan Update explained that the development contemplated by the General Plan would change the visual character of the City and effect its small-town rural community character. The General Plan Update EIR determined that by following the goals and policies in the 1993 General Plan, and through the adoption of new goals policies in the General Plan Update, these cumulative impacts would be less than significant. As explained above, the Vineyards project has been designed in a manner to be consistent with General Plan policies relating to aesthetics and visual resources.

Mitigation 3.7-J. Cumulative Impacts – Degradation of Visual Character: Implementation of project-specific mitigation for impacts on the visual character of the area (see Mitigation Measures 3.7-A.1, 3.7-A.2 and 3.7-B.2) would reduce the project’s contribution to cumulative visual impacts to a less-than-significant level. (Less Than Significant Cumulative Impact).

IMPACT 3.7-K. Cumulative Impacts – Light and Glare: The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present, and probable future projects in the City of Brentwood, would introduce new sources of light and glare in the area. (Significant Cumulative Impact).

The Vineyards project would introduce new sources of light and glare to a property that is currently undeveloped. Mitigation would reduce the impact to a less than significant level. This mitigation consists of the development of a lighting plan, adherence to specific lighting standards, and the use of non-reflective glass. Potential future development of the Annexation Sites could also result in a significant impact in terms of light and glare; this impact would similarly be mitigated to a less than significant level.

The Vineyards project and the potential future development of the Annexation Sites would contribute to sources of glare and light, and the resulting visual impacts, caused by past, present, and probable future projects in the City of Brentwood, including the planned development of the SR4 Bypass. With mitigation, however, the incremental contribution of the actions evaluated in this EIR to the

cumulative visual impacts caused by sources of light and glare throughout the City would be less than significant.

Mitigation 3.7-K. Cumulative Impacts – Light and Glare: The implementation of project-specific mitigation (see Mitigation Measures 3.7-G.1, 3.7-G.2 and 3.7-H.2), would reduce the project’s contribution to cumulative visual impacts caused by sources of light and glare throughout the City of Brentwood to a less than significant level. (Less Than Significant Cumulative Impact).

IMPACT 3.7-L. Cumulative Impacts – Impacts on Scenic Vistas and Scenic Resources: The Vineyards project and the potential future development of the Annexation Sites would not contribute to significant cumulative impacts on scenic vistas and scenic resources. (Less Than Significant Cumulative Impact).

The Vineyards project and the potential future development of the Annexation Sites would not have a significant effect on scenic resources or scenic vistas. By designing the Vineyards project in a manner that avoids development on ridgelines and that keeps rooftops below the horizon, the natural contours of the ridgelines visible from the project area would be retained and ridgelines in the southwestern portion of the City would not be substantially affected. Mitigation would further reduce this already less than significant impact. With respect to the Annexation Sites, the potential future improvements to the John Marsh Home are expected to be minimal and would not have a significant impact on visual resources. The development of the potential community college site, which is relatively level, also would not have any significant impacts on scenic vistas or resources.

The EIR for the City of Brentwood’s General Plan Update explained that the cumulative development contemplated by the General Plan would not have substantial adverse impacts on scenic vistas and visual natural resources. In sum, cumulative visual impacts on scenic resources and vistas would be less than significant.

Mitigation 3.7.L. Cumulative Impacts – Impacts on Scenic Vistas and Scenic Resources: Cumulative impacts on scenic vistas and scenic resources are less than significant, therefore, no mitigation is required. (Less Than Significant Cumulative Impact).

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3.8 BIOLOGICAL RESOURCES

This section evaluates the biological resources known to occur and to potentially occur on the Vineyards at Marsh Creek project site and to describe the types of biological resources that may occur on the Annexation Sites. *Unless specifically otherwise noted*, the description of the biological resources in Section 3.8 is made for the Vineyards project.

Vineyards Project

This section describes potential impacts to biological resources on the Vineyards project site, and identifies measures to eliminate or to substantially reduce those impacts. Existing plant communities, wetlands, wildlife habitats, and potential for special-status species and communities are discussed.

The biological resources discussion for the Vineyards project is based on biological surveys conducted by Sycamore Associates biologists on the proposed project site from November 2002 through June 2003. The biological resources report was subsequently peer-reviewed by H.T. Harvey & Associates on behalf of the City of Brentwood for use in this EIR. H.T. Harvey & Associates' peer-review included overview surveys of the project site to verify site conditions and site conditions described in the Sycamore Associates reports. Impacts and mitigation measures were written by H.T. Harvey & Associates. In addition to biological surveys conducted by Sycamore Associates, the following existing information was reviewed:

- ❖ Section 404 Jurisdictional Delineation (Zentner and Zentner 2002)
- ❖ Jurisdictional Delineation Map (Zentner and Zentner 2003)
- ❖ Tree Survey, Assessment, and Protection Recommendations (Levison 2003)
- ❖ Focused Botanical Surveys for the Vineyards at Marsh Creek Project Site (Sycamore 2003g)
- ❖ Biological Assessment for the Vineyards at Marsh Creek Project (Sycamore 2003a)
- ❖ Vernal Pool Crustacean Wet Season Survey (Entomological Consulting Services, Ltd. 1998)
- ❖ Vernal Pool Crustacean Habitat Assessment Update (Entomological Consulting Services, Ltd. 2003)
- ❖ California Tiger Salamander Focused Survey for the Vineyards at Marsh Creek Project (Sycamore 2003e)
- ❖ Site Assessment for the California Red-legged Frog, Vineyards at Marsh Creek Project (Sycamore 2003h)
- ❖ California Red-legged Frog Focused Survey for the Vineyards at Marsh Creek Project (Sycamore 2003d)
- ❖ Burrowing Owl Habitat Assessment and Winter Focused Survey for the Vineyards at Marsh Creek Project (Sycamore 2003b)
- ❖ Burrowing Owl Nesting Season Focused Survey for the Vineyards at Marsh Creek Project (Sycamore 2003c)

- ❖ Early Evaluation for the San Joaquin Kit Fox, Vineyards at Marsh Creek Project (Sycamore 2003f)
- ❖ City of Brentwood General Plan Update EIR (EIP *et al.* 2001)

Sycamore Associates also conducted additional surveys for special status plant species in September of 2003. No new (previously unidentified) special-status plant species or additional acreage of previously identified special status plant species were found during those surveys.

Nomenclature used throughout this report conforms to Hickman (1993) for plants except where noted. Nomenclature for special-status plant species conforms to California Department of Fish and Game (CDFG) (2003a,b) and California Native Plant Society (CNPS) (2001); nomenclature for special-status animals conforms to CDFG (2003c,d); nomenclature for special-status natural communities conforms to CDFG (2003e). Nomenclature for wildlife conforms to Sibley (2000) for birds, Stebbins (1985) for reptiles and amphibians, and Jameson Jr. and Peeters (1988) for mammals.

Additional information, including the definition of special-status species and natural communities and the results of focused surveys for special-status species, is provided in the following sections.

Annexation Sites

A discussion of the potential biological resources that may occur on the Annexation Sites is also incorporated into this section and is based on studies previously conducted for the Cowell Ranch project by LSA Associates. These reports are not considered sufficiently current to act as a data base to be relied upon for an inventory of what exists on the Annexation Sites today, but is a guide to the types of resources that could be expected on the Annexation Sites. Should the CCCCDC proceed with development plans for a new community college, or the State Department of Parks and Recreation develop improvement plans for the John Marsh Home, new biological resources data base will need to be developed and site surveys will need to be conducted for biological resources. Therefore, these reports are being used to identify the types of biological resources that may occur on the Annexation Sites and the types of mitigation measures that are available to avoid or reduce potentially significant impacts that may occur with potential future development on the Annexation Sites.

An overall inventory of biological resources that potentially occur or were sighted on the Cowell Ranch project site in 1993 is documented in the *Biological Resources, Cowell Ranch, Contra Costa County* (LSA Associates, Inc. [LSA], 1993). A *Supplemental Rare Plant Survey, No. 2* was conducted by LSA Associates, Inc., and provides further site-specific late-season, rare plant surveys of the Cowell Ranch property (LSA, 1994). A *Draft Habitat Management Plan, Cowell Ranch* (LSA, 1996) provides further data regarding the resources that occurred/potentially occurred on the larger Cowell Ranch in the mid-1990's. In some instances, given the Annexation Sites' proximity to the Vineyards project site and the similarity in site character, some assumptions have been made as to the potential for biological resources that may occur on the Annexation Sites.

3.8.1 ENVIRONMENTAL SETTING

The Vineyards project site consists of approximately 481 acres (194.65 hectares) of mostly undeveloped ranch land in eastern Contra Costa County. Concord Avenue borders the project site to the north, Marsh Creek to the east, and Cowell Ranch State Park to the south and west. Briones

Valley Road crosses through the northernmost portion of the site and Marsh Creek Reservoir and the historic John Marsh Home lie immediately to the south. Other structures within and adjacent to the property boundaries include: high-tension towers bordering the eastern property boundary, portions of a concrete channel running through the eastern part of the site, a PG&E substation south of Concord Avenue (excluded from the project development boundary), and the associated gas pipeline extending south from the substation through the property and across Marsh Creek to the reservoir site.

Elevation ranges from 125 to 390 feet above mean sea level. The easternmost portions of the site are relatively flat while rolling hills characterize the remainder of the site. Livestock currently graze the site, which is dominated by non-native annual grasslands typical of the region. Surrounding land use consists of orchards east of Marsh Creek, suburban residential development and a golf course to the north, and undeveloped lands grazed by livestock to the west and south (recently acquired by Department of California State Parks).

Vegetation Communities and Wildlife Habitats

Vineyards Project

The predominant vegetation community found on site is non-native annual grassland with scattered mature blue oaks (*Quercus douglasii*) and valley oaks (*Quercus lobata*) (Exhibit 3.8-1). Small amounts of freshwater marsh vegetation are associated with on-site hydrologic features, which include four stock ponds, several seasonal wetlands, and four ephemeral drainages that flow from west to east across the site. Alkali meadow, grassland, and scalds are also present in isolated locations along the drainages and are associated with some of the seasonal wetlands. A small portion of Marsh Creek and associated riparian vegetation is located within the northeastern project boundary. The vegetation communities provide habitat for a diverse assemblage of wildlife species.

Annexation Sites

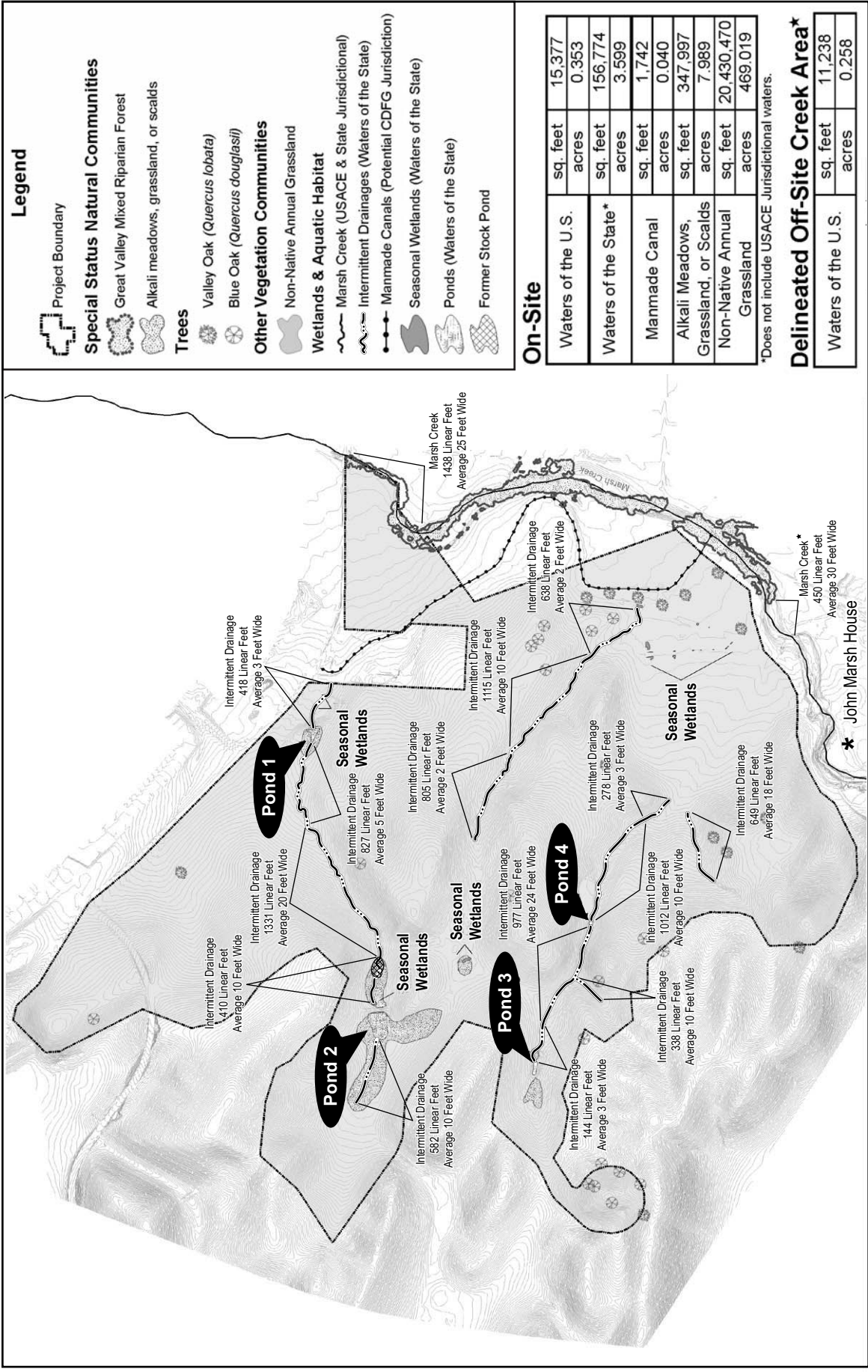
The majority of the previous Cowell Ranch site "...supports a cover of non-native grassland and it grazed by cattle. Valley sink scrub, northern claypan vernal pool, and blue oak woodland habitats are scattered throughout the site as are numerous man-made stock ponds... Riparian and freshwater marsh habitat surrounds the reservoir and riparian woodland is found along Marsh Creek. An apple orchard is present in the eastern portion of the site adjacent to Walnut Boulevard." (LSA, 1993, p.1). Blue oak woodlands were identified to exist on and near the community college site. (LSA, 1993, Fig. 3).

During 1993 surveys conducted by LSA Associates, at least one and up to 4 stockponds existed on, or near, the community college site (LSA, 1993, Fig. 4).

Non-native Annual Grassland

Vineyards Project

Non-native annual grassland is generally found in open areas in valleys and foothills throughout coastal and interior California (Holland 1986). It typically occurs on fine-textured loams or clays that are somewhat poorly drained. This vegetation type is dominated by annual grasses and weedy forb species, mostly of Mediterranean origin, that have replaced native perennial grasslands and scrub



Legend

Project Boundary

Special Status Natural Communities

- Great Valley Mixed Riparian Forest
- Alkali meadows, grassland, or scalds

Trees

- Valley Oak (*Quercus lobata*)
- Blue Oak (*Quercus douglasii*)

Other Vegetation Communities

- Non-Native Annual Grassland

Wetlands & Aquatic Habitat

- Marsh Creek (USACE & State Jurisdictional)
- Intermittent Drainages (Waters of the State)
- Manmade Canals (Potential CDFG Jurisdiction)
- Seasonal Wetlands (Waters of the State)
- Ponds (Waters of the State)
- Former Stock Pond

On-Site

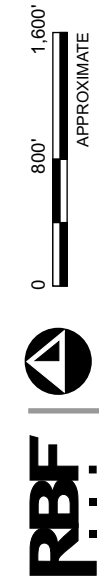
Category	sq. feet	acres
Waters of the U.S.	15,377	0.353
Waters of the State*	156,774	3.599
Manmade Canal	1,742	0.040
Alkali Meadows, Grassland, or Scalds	347,997	7.989
Non-Native Annual Grassland	20,430,470	469.019

*Does not include USACE Jurisdictional waters.

Delimited Off-Site Creek Area*

Category	sq. feet	acres
Waters of the U.S.	11,238	0.258

Source: Sycamore Associates (2003)



11/12/03 JUN 35-100230

primarily as a result of human disturbance. Scattered native wildflower species, representing remnants of the original vegetation, may also be common.

Characteristic non-native annual grasses commonly found on site include wild oats (*Avena fatua* and *Avena barbata*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), wild barley (*Hordeum* spp.), and Italian ryegrass (*Lolium multiflorum*), among others. Common non-native forbs include yellow star thistle (*Centaurea solstitialis*), long-beaked storkbill (*Erodium botrys*), bristly ox-tongue (*Picris echioides*), hedge parsley (*Torilis arvensis*), common vetch (*Vicia sativa*), bur-clover (*Medicago polymorpha*), bellardia (*Bellardia trixago*), and black mustard (*Brassica nigra*), among others. Native species include gumplant (*Grindelia camporum*), blue dicks (*Dichelostemma capitatum*), chick lupine (*Lupinus microcarpus*), and common fiddleneck (*Amsinckia menziesii* var. *intermedia*), among others. Non-native annual grassland conforms to the California annual grassland series as described in Sawyer and Keeler-Wolf (1995), and would be classified as an upland, following Cowardin *et al.* (1979).

Grassland habitats, both native and non-native, attract reptiles and amphibians such as alligator lizard (*Gerrhonotus* spp.), western fence lizard (*Sceloporus occidentalis*), and Pacific slender salamander (*Batrachoseps attenuatus*), which feed on invertebrates found within and beneath fallen logs in the vegetation community. This habitat also attracts seed-eating and insect-eating species of birds and mammals. California Quail (*Callipepla californica*), Mourning Doves (*Zenaida macroura*), and Western Meadowlarks (*Sturnella neglecta*) are a few granivores that nest and forage in grasslands. Insectivores such as the Western Scrub-jay (*Aphelocoma californica*), Barn Swallow (*Hirundo rustica*), and Northern Mockingbird (*Mimus polyglottos*) use the habitat for foraging only. Grasslands are important foraging grounds for insectivorous bats such as myotis (*Myotis* spp.) and pallid bats (*Antrozous pallidus*).

A large number of other mammal species such as the California vole (*Microtus californicus*), deer mouse (*Peromyscus maniculatus*), Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Spermophilus beecheyi*), and black-tailed hare (*Lepus californicus*) also forage and nest within grasslands. Small rodents attract raptors (*i.e.*, birds of prey) such as owls, which hunt at night, as well as day-hunting raptors such as the Red-tailed Hawk (*Buteo jamaicensis*) and Red-shouldered Hawk (*Buteo lineatus*), among others. Black-tailed deer (*Odocoileus hemionus californicus*) also use grasslands for grazing and mammals such as the coyote (*Canis latrans*), California ground squirrel, black-tailed hare, and house mouse (*Mus musculus*) have been observed within grasslands on the subject site. Amphibian species observed inhabiting grasslands on site include the western toad (*Bufo boreas*) and Pacific treefrog (*Hyla regilla*). Numerous bird species have been observed foraging within grassland habitats on site as well.

Annexation Sites

The majority of the Annexation Sites is also covered by non-native annual grasslands (LSA, 1993).

Alkali Meadow and Grassland

Alkali meadow is typically a sparse to densely vegetated plant community consisting of relatively few, low-growing plant species. It occurs on fine-textured, seasonally or permanently moist alkaline soils. When dominated by annual grasses or forbs, such areas are sometimes referred to as alkali grassland.

Alkali meadow or grassland is distributed in poorly drained valley bottoms and on the lower edges of alluvial slopes east of the Cascades and the Sierra Nevada as well as throughout the Sacramento and San Joaquin valleys and into the Livermore Valley. Although not specifically described in Holland (1986), features commonly referred to as alkali scalds are frequently associated with alkali meadow or grassland. Alkali scalds are relatively barren areas with a saline or alkaline crust on the soil surface, supporting little or no vegetation.

Within the project area, alkali meadows, grasslands, and scalds occur in small, isolated locations associated with some of the ponds, seasonal wetlands, and along the intermittent drainages of the property (refer to Exhibit 3.8-1). Characteristic plant species of alkali meadows, grasslands, or scalds occurring on the project site include saltgrass (*Distichlis spicata*), alkali heath (*Frankenia salina*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), sand-spurrey (*Spergularia* sp.), and alkali-mallow (*Malvella leprosa*), among others. Locally uncommon species, including alkali peppergrass (*Lepidium dictyotum* var. *acutidens*), are also associated with this habitat type on the site. San Joaquin spearscale (*Atriplex joaquiniana*), recorded from the site during earlier surveys (Botanical Research Group 1993), is also likely to be associated with this vegetation community.

On the project site, alkali meadow does not correspond to any specific vegetation association as described in Sawyer and Keeler-Wolf (1995). Portions of this plant community would be classified as a palustrine emergent persistent seasonally flooded wetland as described by Cowardin *et al.* (1979).

Several species of birds use the alkali meadows and grassland throughout the year. Savannah Sparrows (*Passerculus sandwichensis*), Western Meadowlarks and Killdeer (*Charadrius vociferus*) may build their nests directly on the ground in these grasslands. Seeds produced by grasses provide food for migrating and wintering songbirds, such as Lesser Goldfinches (*Carduelis psaltria*) and White-crowned Sparrows (*Zonotrichia leucophrys*).

California voles, California ground squirrels, and other small rodents use grass seeds and stalks as food sources. Raptors, such as the White-tailed Kite (*Elanus caeruleus*) and Red-tailed Hawk that nest and roost in nearby habitats, also hunt in these grasslands. Some amphibian species that breed in adjacent wetlands or ponds also aestivate (or spend the summer) in small mammal burrows within portions of these habitats on the site.

Freshwater Marshes and Seeps

Freshwater marshes and seeps consist of areas with permanently or seasonally saturated soils supporting few to several perennial and annual herbaceous hydrophytic plant species. These aquatic vegetation communities are generally found in areas that typically lack flowing surface water. Such communities are usually found where the water table is at or near the surface, or where subsurface seepage collects near the surface, such as along the toe of stream banks, on the lower portions of steep slopes, along fault lines or geological contacts, or at the heads of small swales. Hydrological features are identified in Exhibit 3.8-1.

Vegetation characterized by dense cattails (*Typha* sp.) was observed in a stock pond located in the west central portion of the project site, stock pond 3 (refer to Exhibit 3.8-1). Similar vegetation can be expected to develop in other stock ponds where standing water remains for sufficient periods, if

grazing pressure is not too severe. Small, scattered stands of freshwater marsh vegetation were also observed along the channel of Marsh Creek, where they are associated with riparian woodland.

Freshwater marsh vegetation is poorly developed on the subject site, and at the time of the present surveys, was limited to a single stock pond. It would conform to the cattail series as described by Sawyer and Keeler-Wolf (1996). Following Cowardin *et al.* (1979) this plant community would be classified as a palustrine emergent wetland.

Freshwater marsh emergent vegetation on the site may support breeding passerines such as Marsh Wrens (*Cistothorus palustris*), Song Sparrows (*Melospiza melodia gouldii*) and Red-winged Blackbirds (*Agelaius phoeniceus*).

Seasonal Wetlands

Although not specifically described in Holland (1986), seasonal wetlands consist of annual and perennial native and non-native wetland indicator species. This plant association typically resembles a wetland community only following the wet season; it dries up rapidly in the summer and the wetland indicator species go dormant. During the dry season, such sites may not be readily recognizable as wetlands because wetland species go to seed and typical upland grasses and forbs become established.

Seasonal wetlands occur in four distinct locations on the project site, immediately east of ponds 1 and 2, and in the low-lying area just south of pond 2 (refer to Exhibit 3.8-1). A large group of several seasonal wetlands is located in the flat area northwest of Marsh Creek along the PG&E pipeline that extends south from the substation across the site. Plant species found associated with seasonal wetlands on site include natives such as dwarf peppergrass (*Lepidium latipes* var. *latipes*), stipitate popcorn-flower (*Plagiobothrys stipitatus* var. *micranthus*), and dense willow-herb (*Epilobium densiflorum*), as well as non-native species such as rabbitsfoot grass (*Polypogon monspeliensis*), brass buttons (*Cotula coronopifolia*), swamp grass (*Crypsis schoenoides*), Mediterranean barley, and loosestrife (*Lythrum hyssopifolia*), among others.

Additional lands showing some wetland characteristics were observed immediately adjacent to a concrete-lined irrigation canal in the southeast portion of the project site. Small cracks in the canal allow sufficient seepage to support various-sized patches of hydrophytic vegetation, the largest of which spans approximately 500 square feet. Dominant hydrophytes observed within these wetlands include flatsedge (*Cyperus* sp.), curly dock (*Rumex crispus*), and saltgrass (*Distichlis spicata*). These areas are presumed to be artificial and not sustainable with natural hydrology. Seasonal wetland habitat does not conform to any specific series as classified by Sawyer and Keeler-Wolf (1995); it would be classified as palustrine seasonally flooded wetland following Cowardin *et al.* (1979).

Wildlife typically associated with seasonal wetlands in the area potentially includes terrestrial amphibians, such as the western toad, Pacific treefrog, and arboreal salamander (*Aneides lugubris*). A variety of passerine birds can also be expected, including Black Phoebes (*Sayornis nigricans*), Red-Winged Blackbirds, and others.

Great Valley Mixed Riparian Forest

Great Valley mixed riparian forest is a tall, dense winter-deciduous forest, typically with a relatively closed canopy. It consists of any of a number of tall riparian trees with an understory of shade-tolerant shrubs and lianas. It occurs on low gradient floodplains with fine-textured alluvium, usually away from active river channels but subject to periodic flooding. It is distributed on depositional streams throughout the Great Central Valley below 500 feet in elevation. It was once extensive in the Sacramento and San Joaquin Valleys, where it has since been cleared for agriculture, flood control and urban expansion.

Great Valley mixed riparian forest occurs along the banks of Marsh Creek within the eastern portion of the project site and off the site, adjacent to the eastern property boundary (refer to Exhibit 3.8-1). It is comprised of such tree species as Fremont cottonwood (*Populus fremontii*), western sycamore (*Platanus racemosa*), valley oak, red willow (*Salix laevigata*), and arroyo willow (*Salix lasiolepis*). Northern California black walnut (*Juglans californica* var. *hindsii*), here presumed to be waifs from agricultural stock, are also present in scattered locations. The understory is composed of shrubs such as Himalayan blackberry (*Rubus discolor*), California sagebrush (*Artemisia californica*), mugwort (*Artemisia douglasiana*), mule fat (*Baccharis salicifolia*), and blue elderberry (*Sambucus mexicana*), among others. Minor amounts of emergent freshwater marsh vegetation such as umbrella sedge (*Cyperus eragrostis*) and rush (*Juncus* spp.) are also found along the creek channel.

Great Valley mixed riparian forest within the project site most closely conforms to the red willow series as described in Sawyer and Keeler-Wolf (1995) and would be classified as a palustrine forested or shrub-scrub wetland following Cowardin *et al.* (1979).

The Marsh Creek riparian corridor provides valuable habitat for many wildlife species including common bird, mammal, reptile, amphibian, and invertebrate species. The large trees are likely used for nesting and cover by many bird species and may be utilized as roosting and foraging habitat for some bat species. Shrubs and fallen logs provide cover for smaller mammals, reptiles, and amphibians that may forage among the vegetation and leaf litter.

Valley Sink Scrub

Valley sink scrub is a low, open to dense, succulent shrubland dominated by alkali-tolerant members of the Chenopodiaceae family. An understory is generally lacking, although a sparse herbaceous cover may develop. This habitat type is found in heavy, saline or alkaline clays on old lakebeds or playas. Soil surfaces often have a brilliant white, salty crust over dark, sticky clay. Valley sink scrub formerly surrounded the large lakes of the San Joaquin Valley including Kern, Buena Vista, Tulare, and Goose Lakes. It extended north along the trough of the valley through Merced County to the Sacramento Valley, from Solano to Glenn Counties west of the Sacramento River. This habitat type has been extirpated from many of these areas due to flood control, agricultural or urban development, groundwater pumping, or other changes to hydrology or surface topography.

Within the project area, one area of valley sink scrub was identified during earlier surveys as occurring in the eastern portion of the northernmost drainage (Botanical Research Group 1993, LSA 1993a). The area is near the present location of stock pond 1 (refer to Exhibit 3.8-1) and was described as

valley sink scrub based on the presence of plant species such as saltgrass and alkali heath. However, this plant community more closely resembles alkali meadow and is treated as such in this report.

Special-status Biological Resources

Certain natural communities, as well as plant and wildlife species, are afforded special status by federal, state, or local laws, resource conservation agencies or organizations due to their overall rarity, restricted distribution, and/or unique habitat requirements. The following sections define special-status natural communities and plant and wildlife species that have potential to occur within the project site.

Prior to conducting biological surveys, the California Natural Diversity Data Base (CNDDDB) (CDFG 2002) was reviewed for the most recent distribution information for special-status plant and animal species within the Brentwood and eight adjacent quadrangles.

Information on special-status plant species was compiled through a review of the CNPS' *Inventory of Rare and Endangered Plants of California* (CNPS 2001), the CDFG's *State and Federally Listed Endangered, Threatened, and Rare Plants of California* (CDFG 2003a) and *Special Vascular Plants, Bryophytes, and Lichens List* (CDFG 2003b), and the U.S. Fish and Wildlife Service's (USFWS) *Endangered and Threatened Plant and Animal Taxa; Proposed Rule* (USFWS 1996a, 1999a). Also reviewed were *Status of Rare, Threatened and Endangered Vascular Plants in Alameda and Contra Costa Counties* (Olson 1994) and *Unusual and Significant Plants of Alameda and Contra Costa Counties* (Lake 2001).

Information on special-status animal species was compiled through a review of the CNDDDB (CDFG 2002), CDFG's *State and Federally Listed Endangered and Threatened Animals of California* (CDFG 2003c) and *Special Animals List* (CDFG 2003d), and USFWS's *Endangered and Threatened Wildlife and Plants* (USFWS 1996a, 1999a).

Sensitive Natural Communities

Sensitive natural communities are those that are identified in local or regional plans, policies or regulation or by the CDFG or USFWS (see, e.g., section 404 of the Clean Water Act and sections 1600 *et seq.* of the California Fish and Game Code). In addition, the CNDDDB has designated a number of communities as rare; these communities are given the highest inventory priority (Holland 1986, CDFG 2003e). Three types of sensitive natural communities exist on the project site.

Wetlands

Wetlands serve significant biological functions by providing nesting, breeding, foraging, and spawning habitat for a wide variety of resident and migratory animal species. Wetlands also provide for the movement of water and sediments, ground-water recharge, water purification, storage of storm runoff, and recreation and transport.

Based upon the delineation, the project site supports a total of 1.18 acres (48 hectares) of wetlands and other aquatic features (includes 0.93 acre (0.38 hectare) of ponds, 0.21 acre (0.08 hectare) of seasonal wetlands, and a 0.04-acre (0.02 hectare) manmade channel) in addition to 9,524 linear feet (2.46 acres) of intermittent drainage. U. S. Army Corps of Engineers (USACE) jurisdictional waters (Marsh

Creek) within the project boundaries total 0.35 acre (0.14 hectare). A portion of Marsh Creek outside of the property boundary totaling 0.26 acre (0.11 hectare) was also delineated and verified as falling under the jurisdiction of USACE (refer to Exhibit 3.8-1).

Riparian Forest

Great Valley mixed riparian forest is also found on site along Marsh Creek. Riparian forest is considered a sensitive natural community by the CDFG.

Alkali Meadow

Alkali meadow is a terrestrial natural community that is recognized by CDFG's CNDDDB as rare or having a high priority for inventory (Todd Keeler-Wolf, Pers. Comm.). Within the project area, alkali meadows, grasslands, and scalds occur in small, isolated locations associated with some of the ponds, seasonal wetlands, and intermittent drainages of the property.

Special-Status Plants

Vineyards Project

Special-status plant species include those listed as Endangered, Threatened, Rare or those species proposed for listing by the USFWS (1996a, 1999a), the CDFG (2003a,b) and the CNPS (2001). The CNPS listing is sanctioned by the CDFG and serves essentially as their list of "candidate" plant species. CNPS List 1B and List 2 species are considered eligible for state listing as endangered or threatened under the California Fish and Game Code. Such species should be fully considered during preparation of environmental documents subject to the California Environmental Quality Act (CEQA). CNPS List 3 and List 4 species are considered to be either plants about which more information is needed or are uncommon enough that their status should be regularly monitored. Such plants may be eligible or may become eligible for state listing, and CDFG and CNPS strongly recommend that these species be evaluated for consideration during the preparation of CEQA documents.

Based on a literature review and a familiarity with the flora within the project region, 45 special-status plant species were considered to have at least some potential to occur within the region or have been recorded historically in the project vicinity. Suitable or marginally suitable habitat is present on site for 32 of these special-status plant species. Most of these species are associated with non-native annual grassland and alkali grassland found on site. LSA Associates and the Botanical Research Group conducted focused plant surveys for the 4,907-acre (1,985.8 hectares) Cowell Ranch project, which included the current 481-acre (194.65-hectare) project area, in 1993 and 1994. During these surveys, two special-status plant species, San Joaquin spearscale (CNPS List 1B), and crownscale (*Atriplex coronata* var. *coronata*), (CNPS List 4), were found on the northern portion of the project site (LSA 1994, Botanical Research Group 1993).

During 2003, Sycamore Associates conducted focused surveys for potentially occurring special-status plant species. These surveys were timed so that they coincided with the flowering periods of the 32 potentially occurring special-status plant species on the project site.

They detected 2 populations of crownscale, totaling approximately 500-800 plants; 1 individual of spearscale within alkali areas along some of the on-site drainages; a population of 11 stinkbells (*Fritillaria agrestis*; CNPS List 4); and a population of approximately 100 hogwallow starfish (*Hesperovax caulescens*; CNPS List 4). During the 2003 surveys, Sycamore Associates did not find any of the remaining 29 special-status species potentially occurring on the project site. All 29 of these species are presumed absent from the project site.

Annexation Sites

Surveys conducted by LSA Associates in 1994 (LSA, 1994) indicate that big tarplant (*Blepharizonia plumosa* ssp. *Plumose*) had been present on the community college site. Surveys were conducted for other special-status species on the state park (previous Cowell Ranch). While found in other locations on the state park, the special status plants of San Joaquin spearscale (*Altriplex joaquiniana*), brittle scale (*A. depressa*), crownscale (*A. voronata* ver. *coronata*) and heartscale (*A. cordulata*) were not observed on either of the Annexation Sites.

Special-Status Wildlife

Special-status animal species include those listed by the USFWS under the federal Endangered Species Act (USFWS 1996a, 1999a) and by the CDFG under the California Endangered Species Act (CDFG 2003c,d). The USFWS officially lists species as either Threatened, Endangered, or as Candidates for listing. Additional species receive federal protection under the Bald Eagle Protection Act (e.g., Bald Eagle [*Haliaeetus leucocephalus*], Golden Eagle [*Aquila chrysaetos*]), and the Migratory Bird Treaty Act (MBTA). All birds, except European Starlings (*Sturnella neglecta*), English House Sparrows (*Passer domesticus*), and Rock Doves (i.e., feral pigeons; *Columba livia*), are protected under the MBTA. In addition, many other species are considered by the CDFG to be Species of Special Concern; these are listed in Remsen (1978), Williams (1986), and CDFG (2003d). Although such species are afforded no official legal status, they may receive special consideration during the CEQA review process. The CDFG further classifies some species under the following categories: "Fully Protected," "Protected birds" (CDFG Code §3511), "Protected mammals" (CDFG Code §4700), "Protected amphibian" (CDFG Code §5050 and Chapter 5, §41), "Protected reptile" (CDFG Code §5050 and Chapter 5, §42), and "Protected fish" (CDFG Code §5515). The designation "Protected" indicates that a species may not be taken or possessed except under special permit from CDFG; "Fully Protected" indicates that a species can be taken for scientific purposes by permit only (CDFG 2003d). The California Fish and Game Code §§3503 and 3505 prohibit the take, destruction, or possession of any bird, nest, or egg of any bird unless express authorization is obtained from CDFG.

Under CEQA, a species that is not identified for protection under any other statute may be considered "endangered, rare or threatened" if: (1) its survival and reproduction in the wild are in immediate jeopardy from one or more causes including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors; (2) although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens, or; (3) the species is likely to become endangered within the foreseeable future throughout all or a portion of its range. See 14 Cal. Code Regs. § 15380.

Based on a literature review and a familiarity with the fauna within the project region, a total of 54 special-status animal species were considered to have at least some potential to occur within the region or have been recorded historically in the project vicinity. Special-status wildlife species associated with habitats not present on site are not discussed in this report. A complete list of wildlife species, including their potential to occur on site, their legal status and their habitat affinities, reviewed for the assessment, is included in Table 3.8-3 provided at the end of this chapter. Those species that have been detected on site, have a moderate or high potential to occur on site, and/or are prominent in today's regulatory environment are discussed herein.

The Alameda whipsnake (*Masticophis lateralis euryxanthus*), state and federally listed as Threatened, was not included in the evaluation because suitable habitat is not present on site (Sycamore 2003a).

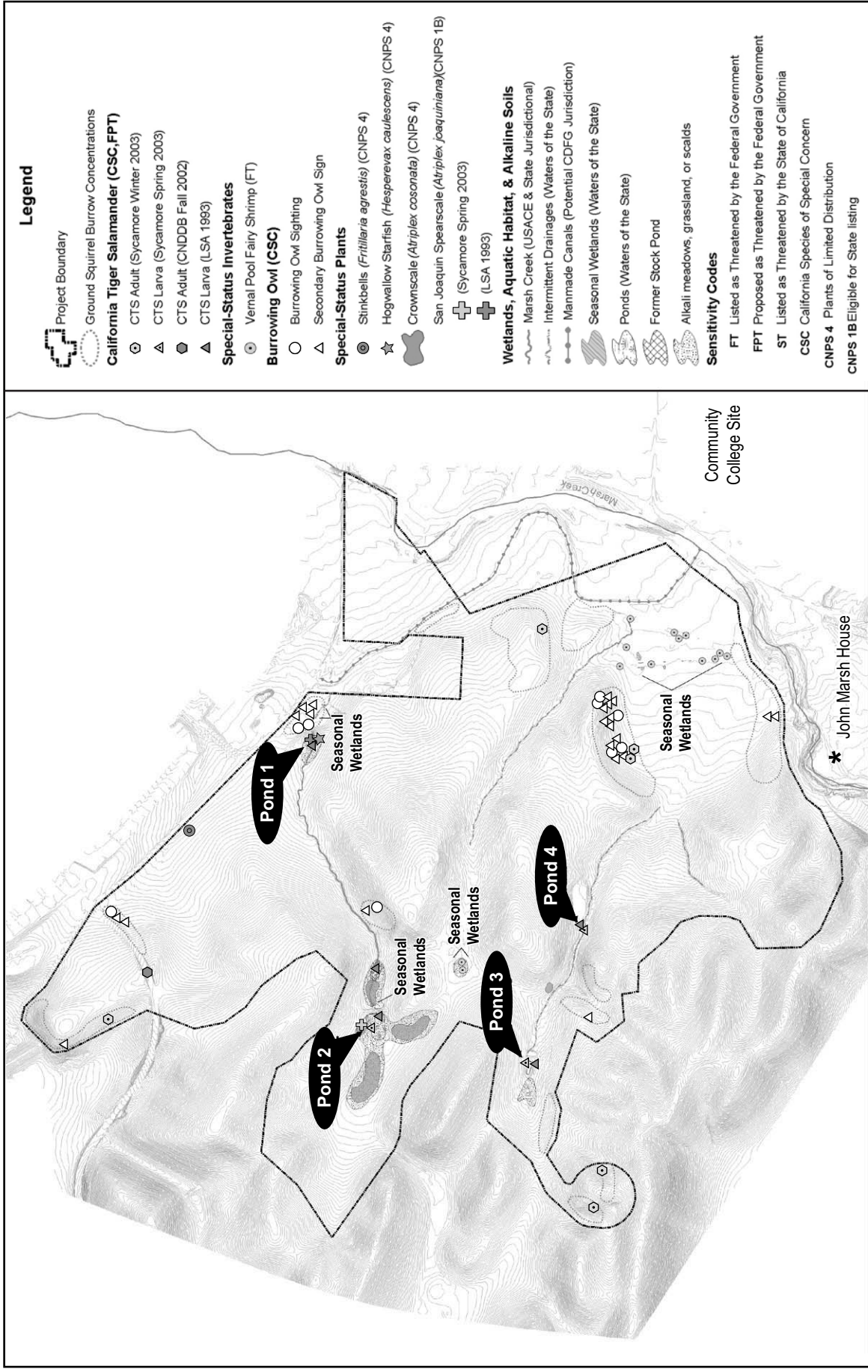
Vernal Pool Fairy Shrimp

Fairy shrimp are aquatic crustaceans associated with vernal pools, grassy swales and other temporarily inundated bodies of water in California such as seasonal wetlands. As a taxonomic group, they are referred to as brachiopods. Most brachiopods are small freshwater organisms with limited specialization of their appendages as compared to other crustacean groups.

Vernal pools and seasonal wetlands form in regions with Mediterranean climates where shallow depressions fill with water during fall and winter rains, which evaporate in the spring (Holland and Jain 1988). Fairy shrimp are ecologically dependent upon these seasonal fluctuations in their environment. After pools become inundated with water, these crustaceans hatch from eggs that have been dormant in the soil from previous wet seasons. The eggs are highly tolerant of heat, cold, and prolonged desiccation. In general, two to three weeks of inundation are required for eggs to hatch and for completion of development, although this time period varies by species. When the pool dries, the eggs survive as cysts among the soil and detritus at the bottom of the pool. Generally, there is one generation per rainy season, but in some locations and in some years, depending on weather patterns and rainfall amounts, conditions may permit two or more generations to complete their development. Egg cysts are dispersed from one pool to another via wind, water, anthropogenic means, or animals such as birds that may ingest them or carry them on their plumage, or cattle that may pick them up on their feet.

Fairy shrimp are found in vernal pools, seasonal wetlands, and swales of various sizes ranging from small puddles to Boggs Lake (40 ha [98.84 acres]), 90 miles (144.84 kilometers) north of San Francisco. The water chemistry characteristics (pH, turbidity, total dissolved solids, conductivity, and alkalinity) of these habitats vary widely as well (Eng *et al.* 1990). Generally, fairy shrimp have a broad tolerance range for physical and chemical attributes.

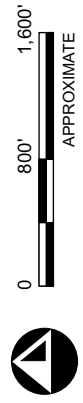
Suitable habitat for vernal pool fairy shrimp is present in the seasonal wetlands and stock ponds on site (refer to Exhibit 3.8-1). Dr. Dick Arnold conducted wet season surveys for vernal pool brachiopods according to the USFWS *Interim Survey Guidelines for Vernal Pool Brachiopods* (1996b). He surveyed the site during the 1996-1997 and 1997-1998 wet seasons (Entomological Consulting Services 1998) and found suitable habitat on site for the longhorn fairy shrimp (*Branchinecta longiantenna*), federally-listed as Endangered and the vernal pool fairy shrimp (*Branchinecta lynchi*), federally-listed as Threatened. *B. lynchi* was found in two of the seasonal wetland groups on site during the surveys (Exhibit 3.8-2). *B. longiantenna* was not found.



Legend

- Project Boundary
- Ground Squirrel Burrow Concentrations
- California Tiger Salamander (CSC, FPT)**
- CTS Adult (Sycamore Winter 2003)
- CTS Larva (Sycamore Spring 2003)
- CTS Adult (CNDDB Fall 2002)
- CTS Larva (LSA 1993)
- Special-Status Invertebrates**
- Vernal Pool Fairy Shrimp (FT)
- Burrowing Owl (CSC)**
- Burrowing Owl Sighting
- Secondary Burrowing Owl Sign
- Special-Status Plants**
- Stinkbells (*Fritillaria agrestis*) (CNPS 4)
- Hogwallow Starfish (*Hesperex caulescens*) (CNPS 4)
- Crownscale (*Atriplex cosonata*) (CNPS 4)
- San Joaquin Spearscale (*Atriplex joaquiniana*) (CNPS 1B)
- (Sycamore Spring 2003)
- (LSA 1993)
- Wetlands, Aquatic Habitat, & Alkaline Soils**
- Marsh Creek (USACE & State Jurisdictional)
- Intermittent Drainages (Waters of the State)
- Manmade Canals (Potential CDFG Jurisdiction)
- Seasonal Wetlands (Waters of the State)
- Ponds (Waters of the State)
- Former Stock Pond
- Alkali meadows, grassland, or scalds
- Sensitivity Codes**
- FT Listed as Threatened by the Federal Government
- FPT Proposed as Threatened by the Federal Government
- ST Listed as Threatened by the State of California
- CSC California Species of Special Concern
- CNPS 4 Plants of Limited Distribution
- CNPS 1B Eligible for State listing

Source: Sycamore Associates (2003)



10/20/03 JIN 35-100230

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Special-Status Species

Exhibit 3.8-2

However, during the Arnold surveys, California linderiella (*Linderiella occidentalis*), a Federal Species of Concern, was found in seasonal wetlands less than one mile (1.6 kilometer) from the proposed project site (Entomological Consulting Services 1998).

Dr. Dick Arnold conducted a habitat assessment update for the project site on 20 January, 2003. He concluded that habitat conditions have not changed appreciably since protocol surveys were conducted and the seasonal wetlands and stock ponds on site continue to provide suitable habitat for *B. lynchi*. During the habitat assessment update, Dr. Arnold observed individuals presumed to be *B. lynchi* in a pool located in a portion of the project site where this species was observed to occur in 1997 and 1998. *B. longiantenna* are known to occur in grassy pools, however, they were not observed on site during previous protocol surveys. This species has been observed primarily in rock pools at other locations within southeastern Contra Costa County. This type of habitat is not present on the project site (Entomological Consulting Services 2003).

The midvalley fairy shrimp (*Branchinecta mesovalliensis*), a Federal Species of Concern, is a newly-described species that inhabits pools in only a few counties within the Great Central Valley, including Sacramento, Solano, Merced, Madera, San Joaquin, Fresno, and Contra Costa Counties (Eriksen and Belk 1999, Belk and Fugate 2000). They are found in small shallow vernal pools and swales (Helm 1998) and occasionally in roadside ditches or puddles along roadways adjacent to natural habitat (Belk and Fugate 2000). They have been recorded approximately 3.5 miles (5.63 kilometers) east of the project site between Brentwood and Byron (CDFG 2002) and have a low potential to occur on site.

Critical Habitat was designated by the USFWS in August 2003 for federally listed vernal pool crustaceans (USFWS 2003). Portions of the project site are within Critical Habitat Unit 19A for the vernal pool fairy shrimp.

Bridge's Coast Range Shoulderband Snail

Bridge's Coast Range shoulderband snail (*Helminthoglypta nickliniana bridgesi*) (BCRS), a Federal Species of Concern, is known from Contra Costa and Alameda Counties from Berkeley and San Pablo to the eastern base of Mount Diablo. The nearest reported location is within Marsh Creek Canyon near Marsh Creek Springs, approximately 6 miles (9.66 kilometers) due west of the project site (Roth 1999). It is typically found in moist, often riparian areas under rocks, logs, woody debris, or accumulations of leaf mould. The grassy hills of the project site are considered atypical habitat for BCRS, however, the snail has at least some potential to occur on site near rocky outcrops or in the riparian area along Marsh Creek.

Curved-Foot Hygrotus Diving Beetle and Molestan Blister Beetle

The curved-foot hygrotus diving beetle (*Hygrotus curvipes*) and molestan blister beetle (*Lytta molesta*), both Federal Species of Concern, typically inhabit seasonal ponds, pools, streams, and drainages. They are usually found in temporary wetlands characterized by salt-tolerant plant species such as saltgrass. LSA Associates conducted surveys for the curved-foot hygrotus diving beetle in 1993 and found several individuals in three of the stock ponds on site. This species still has the potential to occur on site (LSA 1993b). The molestan blister beetle has been reported less than one mile (1.6 kilometer) west of the project site (CDFG 2002) and has a low potential to occur on site.

Special-Status Fish

Several special-status fish species, including: steelhead (*Oncorhynchus mykiss*, Central Valley ESU) federally-listed as Threatened, and chinook salmon (*Oncorhynchus tshawytscha*), winter-run, federally- and state-listed as Endangered; Central Valley fall/late fall-run, a federal Candidate species and California Species of Special Concern; and spring-run, federally- and state-listed as Threatened, may have historically used Marsh Creek for spawning and rearing (Hanson, Pers. Comm. 2001), and both steelhead and chinook are known to occur below the lower Marsh Creek drop-structure (California Department of Water Resources [CWDR] 2003). Current degraded creek conditions and the presence of the drop-structure limit the use of this stream by these native fishes as well as many others (Hanson, Pers. Comm. 2001). Therefore, these species are considered to have a very low potential for occurrence in Marsh Creek.

Sacramento perch (*Archoplites interruptus*) a federal Species of Concern and California Species of Special Concern, Delta smelt (*Hypomesus transpacificus*) federally- and state-listed as Threatened, and Sacramento splittail (*Pogonichthys macrolepidotus*) a California Species of Special Concern, have been documented in the Sacramento-San Joaquin River Delta close to the confluence of these waters with Marsh Creek as recently as 1994, but are considered to have a very low to low potential to occur in Marsh Creek (Hanson, Pers. Com. 2001; Urquhart, Pers. Com. 2001; CDFG 2002).

Farther upstream from the confluence, habitat conditions in Marsh Creek are so degraded due to channelization, etc. that the aforementioned species are not likely to occur, although, in high flow years there is some potential for them to move upstream from the confluence (Hanson, Pers. Comm. 2003). However, it should also be noted that portions of Marsh Creek are being restored to create more suitable habitat conditions for native fish species (Hanson, Pers. Comm. 2003). Included in proposed restoration is removal or remodeling of the lower Marsh Creek drop-structure (CWDR 2003), which acts as a barrier to upstream migration. It should also be noted that despite the poor habitat quality in the lower reaches of Marsh Creek, Robins and Cain (2002) report that multiple areas of suitable spawning habitat for fall-run chinook salmon exist in the seven miles (11.27 kilometers) of stream between Marsh Creek Dam and the lower Marsh Creek drop-structure, an area that includes the portion of Marsh Creek adjacent to the project site. Therefore, if, contrary to current expectations, removal of the drop-structure were to occur before the onset of construction, fall-run chinook salmon and possibly steelhead could begin to spawn in the portion of Marsh Creek adjacent to the project site and further analysis would be required.

Nevertheless, due to the current lack of suitable habitat, the presence of the drop-structure, and lack of documented occurrences, special-status fish species are not expected to occur in the portion of Marsh Creek adjacent to the project area.

California Tiger Salamander

Vineyards Project

The California tiger salamander (*Ambystoma californiense*) (CTS), federally proposed as Threatened and a California Species of Special Concern, is a relatively large, often terrestrial salamander that inhabits grasslands and oak savanna habitats in the valleys and low hills of central and northern California (Storer 1925, Stebbins 1985, Barry and Schaffer 1994). CTS have been recorded from all

of the nine Bay Area Counties at elevations ranging from approximately 10 to 3,500 feet above mean sea level (Shaffer and Fisher 1991). CTS appear to be in the initial stages of population decline, owing to habitat fragmentation (Fisher and Shaffer 1996). CTS require vernal pools, ponds (natural or man-made), or semi-permanent calm waters (where standing water is present for a minimum of three to four months) for breeding and larval maturation, and adjacent upland areas that contain small mammal burrows or other suitable refugia for aestivation.

Adult CTS spend most of their lives underground in small mammal burrows, typically those of California ground squirrels (Loredo *et al.* 1996). Adults emerge from underground retreats to feed, court and breed during warm winter rains typically from November through March. Adults may migrate long distances, up to a kilometer or more, to reach pools for breeding and egg laying (Jennings and Hayes 1994). The eggs are attached singly or in small groups of 2-4 to vegetation under water or directly on the bottom of the pool if emergent vegetation is sparse or nonexistent (Storer 1925, Jennings and Hayes 1994). After hatching in about 10-14 days the larvae continue to develop in the pools for several months until they metamorphose, which takes a minimum of 10 weeks (Anderson 1968, Feaver 1971).

Following metamorphosis, juvenile salamanders seek refugia, typically mammal burrows, and sometimes travel distances of 1 mile (1.6 km) or more from their breeding sites (Austin and Shaffer 1992) in which they may remain until they emerge during a subsequent breeding season. Trenham *et al.* (2000) found that most individuals did not reach sexual maturity for 4-5 years. After completion of breeding, adult CTS retreat to underground burrows. Loredo *et al.* (1996) found that on average adult CTS travel a few hundred feet from breeding to aestivation sites, however, the average initial travel distance of juveniles from breeding to aestivation sites was shorter than that of adults. During some years in which the conditions are sub-optimal, adult females have been known to forego reproduction completely (Loredo and Van Vuren 1996; Trenham *et al.* 2000). CTS populations and breeding are vitally influenced by environmental conditions including seasonal rainfall and pond duration (Loredo and Van Vuren 1996). CTS are dependent on the integrity of both breeding ponds and adjacent upland habitat, especially long-lasting seasonal pool and pond complexes (Jennings and Hayes 1994). The alteration of either habitat component through the introduction of exotic predators or the construction of barriers, *e.g.* roads, berms and certain types of fences, which fragment habitat and reduce connectivity can be detrimental to the survival of CTS (Jennings and Hayes 1994).

There are several reported occurrences of adult and larval CTS in the vicinity of the project site (CDFG 2002). Suitable breeding habitat for CTS is present within three of the stock ponds on site and several concentrations of ground squirrel burrows which provide suitable aestivation habitat for CTS are also present (Exhibit 3.8-2).

Adult CTS have been found in four different portions of the project site during protocol-level nocturnal surveys (CDFG 1997) conducted by Sycamore during the 2002-2003 wet season (Sycamore 2003e). CTS larvae were found in stock ponds 2, 3, and 4 during protocol-level aquatic surveys conducted by Sycamore in March 2003 (Sycamore 2003e) (Exhibit 3.8-2). CTS larvae were found in five stock ponds located on site during aquatic surveys conducted in 1993 by LSA Associates (LSA 1993a) (refer to Exhibit 3.8-2), however, one of these ponds is no longer present due to a berm failure during a year of high rains following 1993 surveys. The berms of stock ponds 1 and 2 also failed at this time. Although water collects there in winter months, stock pond 1 no longer collects water of a

sufficient depth or for a sufficient length of time to allow for CTS breeding and larval maturation in most years (Sycamore 2003e).

Annexation Sites

At least one, and up to four, stock ponds existed on or near the community college site in 1993 (LSA, 1993, Figure 4). California tiger salamander larvae were captured in twenty-nine water bodies on the state park, including the four ponds that occur on, or near, the community college site.

California Red-Legged Frog

Optimal habitat for the federally-listed Threatened and California Species of Special Concern California red-legged frog (*Rana aurora draytonii*) (CRF) includes ponds, stream courses, permanent pools (Storer 1925) and intermittent streams fed by drainage areas no larger than 115.83 square miles (300 km²) (Hayes and Jennings 1988) between sea level and 5,000 feet (1,500 meters) in elevation (Bulger *et al.* 2003). Habitat characteristics include water depth of at least 2.5 feet (0.7 meters), largely intact emergent or shoreline vegetation, *e.g.*, cattails, tules (*Scirpus* spp.) or willows, and absence of competitors and predators such as bullfrogs (*Rana catesbeiana*) and largemouth bass (*Micropterus salmoides*) (Hayes and Jennings 1988). However, according to Jennings (Pers. Comm. 2003b), CRF will use a wide variety of habitats, including temporary pools and streams, permanent watercourses, wells, and ponds.

Outside of an ideal habitat, CRF have been found in concrete-lined pools, isolated wells, stock ponds absent of shoreline vegetation, and in refuse piles near ponds. In order to survive, CRF need permanent ponds nearby and neighboring aquatic habitat that lasts for at least 6 months a year. Less optimal habitat is most likely used during wet periods, but a permanent water source is essential to the survival of the population.

Adults are highly aquatic and are most active at night (Storer 1925). However, CRF do make use of terrestrial habitat, especially after precipitation events, for non-migratory forays into upland habitats and migratory overland movements between aquatic sites. CRF typically remain within 16 feet (5 meters) of aquatic habitat during dry periods, but will move into upland habitat as far as 426 feet (130 meters) during summer rains (Bulger *et al.* 2003). In a study conducted by Bulger *et al.* (2003) at a coastal site in northern Santa Cruz County, 90 percent of non-migratory CRF remained within 196 feet (60 meters) of aquatic habitat following the onset of winter rains.

Bulger *et al.* (2003) demonstrated that CRF migrations to breeding ponds were often precipitated by rain events in excess of 25 mm. Migratory routes were often highly oriented toward the nearest pond and were typically traversed in direct, point-to-point movements with little to no preference or avoidance toward topography or habitat. Migratory activity was conducted over several days, followed by several sedentary days. CRF were documented to migrate between aquatic sites at distances up to 2 miles (approximately 3,200 meters).

Breeding typically begins between November and mid-December and lasts through April in most years, but is dictated by winter rainfall (Stebbins 1985, Jennings and Hayes 1994, Bulger *et al.* 2003). As spawning occurs, CRF cease using terrestrial uplands farther than 20 feet (60 meters) from the water (Bulger *et al.* 2003).

At the breeding sites, males call in groups of 3 to 7 individuals to attract females (Jennings and Hayes 1994). During amplexus, females deposit an egg mass on emergent vegetation (Storer 1925, Jennings and Hayes 1994). Larvae hatch in 6-14 days and metamorphosis is completed in 4-5 months (Jennings and Hayes 1994). Males and females attain sexual maturity at 2 and 3 years, respectively (Jennings and Hayes 1994). In some cases, tadpoles overwinter and metamorphose the following spring (Storer 1925).

Marsh Creek Reservoir, immediately south of the site, is a perennial water body encompassing an area of 100 acres (40.47 hectares) that may have historically provided breeding habitat for CRF. However, American bullfrogs are now prevalent. This does not preclude CRF from occurring in the reservoir; however, it is not likely to support significant populations (Jennings, Pers. Comm. 2003a). CRF were not observed on site during previous biological survey work conducted in support of the 1993 biological resources report prepared for the 4,907-acre (1,985.8-hectare) Cowell Ranch Project by LSA Associates, which included the current project area (LSA 1993a).

No CRF were observed on site or within Marsh Creek during focused surveys conducted according to the USFWS protocol (USFWS 1997) in May 2003 (Sycamore 2003d). Surveys focused on aquatic habitats on site and the portion of Marsh Creek adjacent to the site. The closest reported occurrence of CRF is approximately 1.6 miles (2.57 kilometers) southwest of the site (LSA 1993a). Even though the CRF Site Assessment conducted by Sycamore in December 2002 concluded that potential breeding habitat is present on site within three of the stock ponds and the remainder of the site provides potential dispersal and refugia habitat for CRF, the findings of the focused survey were negative (Sycamore 2003a,d).

Western Pond Turtle

The western pond turtle (*Clemmys marmorata*), a California Species of Special Concern and formerly a federal Species of Concern, originally inhabited many of the Pacific drainage basins in California (Stebbins 1985). This medium sized turtle ranges in size to just over 8 inches (21cm) with a low carapace that is generally olive, brownish or blackish (Stebbins 1985, Jennings and Hayes 1994). Primary habitats include permanent water sources such as ponds, streams and rivers. This turtle is often seen basking on logs, mud banks, or mats of vegetation, although wild populations are wary and individuals will often flee after detecting movement from a considerable distance. Although it is an aquatic species with webbed feet, it can over-winter on land or in water or remain active during the winter, depending on environmental conditions (Rathbun *et al.* 1993, Jennings and Hayes 1994). Females travel from aquatic sites into open, grassy areas to lay eggs in a shallow nest 6.56 - 1,312 feet (2-400 meters) or more away from water bodies from April through June (Holland 1992, Rathbun *et al.* 1992, Jennings and Hayes 1994). It appears that most hatchlings overwinter in the nest (Holland 1994, Jennings and Hayes 1994), and placing nests away from watercourses makes young less susceptible to death by flood events that commonly occur during the winter weather year (Rathbun *et al.* 1994). Additional explanations for placing nests away from watercourses include avoidance of predators such as raccoons (*Procyon lotor*) and gender, which is environmentally determined embryonically by temperature (Rathbun *et al.* 1992).

Western pond turtles may live for 40 years or more (Jennings and Hayes 1994), and are therefore sometimes found in degraded areas. Adults appear to be able to persist for several years in poor aquatic habitat without any successful recruitment. Nests are difficult to locate as the females

excavate a hole in which to lay the eggs; the hole is then filled in with vegetation and soil after eggs are deposited.

Western pond turtles have been observed in Marsh Creek approximately one mile (1.6 kilometer) south of the project site, upstream of Marsh Creek Reservoir (LSA 1993a). Suitable habitat is present within Marsh Creek Reservoir year round and within the portion of Marsh Creek adjacent to the project site when water is present. The stock ponds on site provide suitable aquatic habitat and the non-native annual grasslands on site provide suitable nesting habitat. The western pond turtle has a moderate potential to occur on site.

Raptors

Vineyards Project

Suitable foraging and nesting habitat is present on site for many raptor species. Several mature oak trees are scattered throughout the grassland areas and mature cottonwoods, valley oaks, and sycamore trees line the banks of Marsh Creek. Several special-status raptor species have been observed using on-site habitats for shelter and foraging, including the following California Species of Special Concern: Cooper's Hawk (*Accipiter cooperii*), Golden Eagle, Ferruginous Hawk (*Buteo regalis*), Northern Harrier (*Circus cyaneus*), White-tailed Kite, Merlin (*Falco columbarius*), Prairie Falcon (*Falco mexicanus*), and Osprey (*Pandion haliaetus*).

Swainson's Hawks (*Buteo swainsoni*), state-listed as Threatened, have a high potential to occur on site. They are known to occur in the Brentwood area (CDFG 2002), and on 16 April 2003, H. T. Harvey & Associates' biologists observed several Swainson's Hawks flying over the site. In addition, a probable nest of this species was located immediately offsite along Marsh Creek, adjacent to the northeastern project boundary. Dry-land pasture is considered one of the foraging habitats for Swainson's Hawks (CDFG 1994) and the pasture present on site provides suitable foraging despite the rolling topography. The large trees along Marsh Creek provide potential nesting habitat.

A habitat assessment has been conducted for Burrowing Owls (*Athene cunicularia hypugea*), a California Species of Special Concern, in addition to protocol-level (CDFG 1995, California Burrowing Owl Consortium 1997) winter and nesting season focused surveys, in which a total of nine Burrowing Owls were observed on the site (Sycamore 2003b,c) (Exhibit 3.8-2). Ground squirrel burrow concentrations were mapped in thirteen areas on the site. Burrowing Owl sign was found in seven of the 13 areas during winter surveys. One breeding pair was observed during the nesting season surveys in the area near stock pond 1 (Sycamore 2003c).

All raptors are protected under the Federal Migratory Bird Treaty Act and California Fish and Game Code. The nesting period for raptors is between December 1 and August 31. Red-tailed Hawk, White-tailed Kite, and American Kestrel (*Falco sparverius*) have been observed nesting in trees on site during the spring of 2003. Other raptor species observed on site include Great Horned Owl (*Bubo virginianus*), Turkey Vulture (*Cathartes aura*), Red-shouldered Hawk, and Common Barn Owl (*Tyto alba*).

Annexation Sites

Suitable habitat for burrowing owls was identified to exist throughout the state park. A single burrowing owl was observed on, or near, the community college site. (LSA, 1993. Figure 5).

Passerines and Non-Passerine Landbirds

Passerines (perching birds) are a taxonomic grouping that consists of several families including swallows (*Hirundinidae*), larks (*Alaudidae*), crows, ravens, and jays (*Corvidae*), shrikes (*Laniidae*), vireos (*Vireonidae*), finches (*Fringillidae*) and emberizids (*Emberizidae*; warblers, sparrows, blackbirds, *etc.*), and others. Non-passerine land birds are a non-taxonomic grouping typically used by ornithologists to categorize a loose assemblage of birds. Families grouped into this category include kingfishers (*Alcedinidae*), woodpeckers (*Picidae*), swifts (*Apodidae*), hummingbirds (*Trochilidae*) and pigeons and doves (*Columbidae*), among others. Habitat, nesting and foraging requirements for these species are wide ranging, therefore outlining generic habitat requirements for this grouping is difficult. These species typically use most habitat types and are known to nest on the ground, in shrubs and trees, on buildings, under bridges, and within cavities, crevices and manmade structures. Many of these species migrate long distances and all species except European starlings, English House Sparrows, and rock doves are protected under the Federal Migratory Bird Treaty Act. The nesting period for passerines and non-passerine land birds occurs between February 1 and August 31.

Suitable nesting and foraging habitat is present on site for special-status passerines found in open habitats such as California Horned Lark (*Eremophila alpestris actia*) and Loggerhead Shrike (*Lanius ludovicianus*). Both species are California Species of Special Concern and have been observed on site. The riparian habitat along Marsh Creek, a small portion of which is within the project boundaries, provides potential nesting habitat for the Yellow Warbler (*Dendroica petechia brewsteri*), a California Species of Special Concern that prefers deciduous riparian habitats characterized by willows, alders, and cottonwoods for nesting. Other passerine and non-passerine landbird species observed on site include Yellow-rumped Warbler (*Dendroica coronata*), Western Scrub-jay, Savannah Sparrow (*Passerculus sandwichensis*), Say's Phoebe (*Sayornis saya*), Belted Kingfisher (*Ceryle alcyon*), Great Blue Heron (*Ardea herodias*), Northern Flicker (*Colaptes auratus*), Ruby-crowned Kinglet (*Regulus calendula*), and Black Phoebe, among others.

San Joaquin Pocket Mouse

The San Joaquin pocket mouse (*Perognathus inornatus*), Federal Species of Concern, inhabits grassland and scrub habitats of the Central and San Joaquin Valleys. They are associated with friable soils, and inhabit burrows that they dig. Small mammal trapping was conducted during previous biological survey work conducted in support of the 1993 biological resources report prepared for the 4,907-acre (1,985.8-hectare) Cowell Ranch Project by LSA Associates, which included the current project area (LSA 1993a). One pocket mouse was captured approximately one mile (1.6 kilometers) southwest of the currently proposed project site. Thus, they have a moderate potential to occur on site.

Special-Status Bats

Mature trees scattered throughout the grassland and found along the banks of Marsh Creek provide potential roosting habitat for many special-status bat species. These species include the pallid bat, a California Species of Special Concern, Townsend's big-eared bat (*Corynorhinus (Plecotus) townsendii*

townsendii), a federal Species of Concern and California Species of Special Concern, small-footed myotis bat (*Myotis ciliolabrum*), a federal Species of Concern, long-eared bat (*M. evotis*), a federal Species of Concern, fringed myotis bat (*M. thysanodes*), a federal Species of Concern, and long-legged myotis bat (*M. volans*), a federal Species of Concern, which have a low potential to occur on site. There are no old or abandoned buildings within the project boundaries that provide suitable roosts for maternal colonies, however, there is a moderate potential that the John Marsh Home or associated buildings south of the site provide this type of habitat to bat species. In addition, pallid bats occasionally form maternal colonies in hollow trees, thus there is a low potential for them to occur on site. The project site also provides potential foraging habitat for bats.

San Joaquin Kit Fox

Vineyards Project

The San Joaquin kit fox (*Vulpes macrotis mutica*), federally-listed as Endangered and state-listed as Threatened, the smallest North American canid (member of the dog family, Canidae), is one of seven subspecies of kit fox and is considered the most genetically distinct (Mercure *et al.* 1993). Historically, the San Joaquin kit fox occurred extensively throughout California's Central Valley and parts of the Salinas and Santa Clara Valleys. San Joaquin kit fox currently inhabit some areas of suitable habitat on the San Joaquin Valley floor, and in the surrounding foothills of the coastal ranges, Sierra Nevada, and Tehachapi Mountains, from southern Kern County north to Contra Costa, Alameda, and San Joaquin Counties on the west, and near La Grange, Stanislaus County on the east side of the Valley. They also inhabit some of the larger scattered areas of natural land on the Valley floor in Kern, Tulare, Kings, Fresno, Madera, and Merced Counties (taken from the *Recovery Plan for Upland Species of the San Joaquin Valley*, USFWS 1998). San Joaquin kit fox sightings in the most northern portion of their range are rare and have been increasingly so. The locations of source populations for this area are not known (H. T. Harvey & Associates 1997).

San Joaquin kit fox prefer habitats of open or low vegetation with loose soils. In the northern portion of their range, they may occupy grazed grasslands and, to a lesser extent, valley oak woodlands. In the southern and central portion of the Central Valley, San Joaquin kit fox are found in valley sink scrub, valley saltbrush scrub, upper Sonoran subshrub scrub and annual grassland (USFWS 1998). San Joaquin kit fox are also found in grazed grasslands, urban settings and in areas adjacent to tilled or fallow fields (USFWS 1998). Bell (1994) identified three limited habitat characteristics to associate San Joaquin kit fox in their northern range: 1) the percentage of grassland being greater than 50 percent, 2) clay soils, and 3) a history of previous San Joaquin kit fox sighting within 0.93 miles (1.5 km).

San Joaquin kit fox are predominantly nocturnal; hunting and most other activities are restricted to after dark (Egoscue 1956). In their northern range, San Joaquin kit fox prey predominantly upon California ground squirrels, but other prey species include kangaroo rats (*Dipodomys sp.*), black-tailed jackrabbits, desert cottontails (*Sylvilagus audubonii*), deer mice, Burrowing Owls, Meadowlarks, lizards, and crickets (Egoscue 1956).

The San Joaquin kit fox requires underground dens to raise pups, to avoid predators (Golightly and Ohmart 1984), to regulate temperature and to avoid other adverse environmental conditions. In the northern portion of their range, burrowing mammals, primarily ground squirrels, usually provide these

burrows. Dens are usually located on loose-textured soils, on slopes less than 40 degrees (O'Farrell 1980). Natal pupping dens are generally found on slopes of less than 6 degrees (O'Farrell and McCue 1981). Dens have been recorded at the elevation of 1,200 feet (363 meters) (Grinnell *et al.* 1937; USFWS 1983; USFWS 1998). Pairs may share home ranges all year but may use different dens (USFWS 1998).

Dens usually have more than one entrance; Egoscue (1962) noted anywhere from two to seven, although three and four-entrance dens were most common. One or more tunnels are often used as latrines, littered with refuse and scat. Scat is also found along trails, at dens, and occasionally near objects such as bones or animal remains (Egoscue 1962).

The project site is at the extreme northern limit of the San Joaquin kit fox range. Dr. Susan E. Townsend and Sycamore conducted a formal Early Evaluation for San Joaquin kit fox following the protocol recommended by the USFWS (USFWS 1999b) for the project site. Twenty-six holes dug by burrowing mammals that could be used by kit foxes as potential dens were identified on site, however no kit fox or sign of kit fox were detected. The Early Evaluation concluded the closest recorded kit fox sightings to the project site are from the early 1970's and late 1980's between 1.8 and 2.6 miles (2.9 and 4.18 kilometers) east of the project site. In addition, kit fox have been observed in the East Bay Regional Park District's (EBRPD) Black Diamond Mines Regional Preserve approximately 5.5 miles northwest of the site during 1996, 1997, and 1999. (EBRPD, unpublished data). Kit foxes also have been observed at Bethany Reservoir in 1998, about 9 miles southeast of the subject property, at Vasco Caves during 2001 and 2002, about 5 miles southeast of the Vineyards property, and at Brushy Peak during 2002, about 8 miles south-southeast. Because the site is at the northern limit of the kit fox range, and because observations in the area are widely separated both temporarily and spatially, there is a low potential for kit fox to occur on the project site.

Annexation Sites

LSA did not conduct protocol surveys for kit fox on the Annexation Sites. Nonetheless, given historical occurrences on the state park property at that time, LSA concluded that San Joaquin kit fox "probably occur" on the state park property. LSA, 1993, p. 42). This conclusion is based upon earlier studies than the more recent evaluation of the Vineyards project site.

California Horned Lizard

The California horned lizard (*Phrynosoma coronatum frontale*), a state of California species of Special Concern, occupies loose sandy loam and alkaline soils in a variety of habitats including chaparral, grasslands, saltbush scrub, coastal scrub, and clearings in riparian woodlands. They primarily eat insects such as ants and beetles. They once inhabited much of the Central Valley but have disappeared from much of their former range. Their population decline is mainly attributed to conversion of land for agricultural purposes. The human introduction of non-native Argentine ants, which are inedible to horned lizards and tend to displace the native carpenter ants, is another factor in their decline. California horned lizards have been reported in locations south of the subject site by several miles, but are not known on the site.

San Joaquin Whipsnake

The San Joaquin whipsnake (*Masticophis flagellum ruddocki*) is a subspecies of the coachwhip, which is related to the group of snakes known as racers. The San Joaquin whipsnake is a California Species of Special Concern, and occurs on the west side of the San Joaquin Valley and on the Valley floor in Kern County in sparse grasslands and saltbush scrub communities with little or no trees (Jennings and Hayes 1994). They require the presence of mammal burrows for refuge, temperature regulation, and possibly egg-laying. San Joaquin whipsnakes have been reported in locations south of the subject site by several miles, but are not known on the site.

Wildlife Movement Corridors

Wildlife movement includes migration (usually one direction per season), inter-population movement (long-term genetic exchange), and small travel pathways (daily movement corridors within an animal's territory). While small travel pathways usually facilitate movement for daily home range activities such as foraging or escape from predators, they also provide connection between outlying populations and the main corridor, permitting an increase in gene flow between populations.

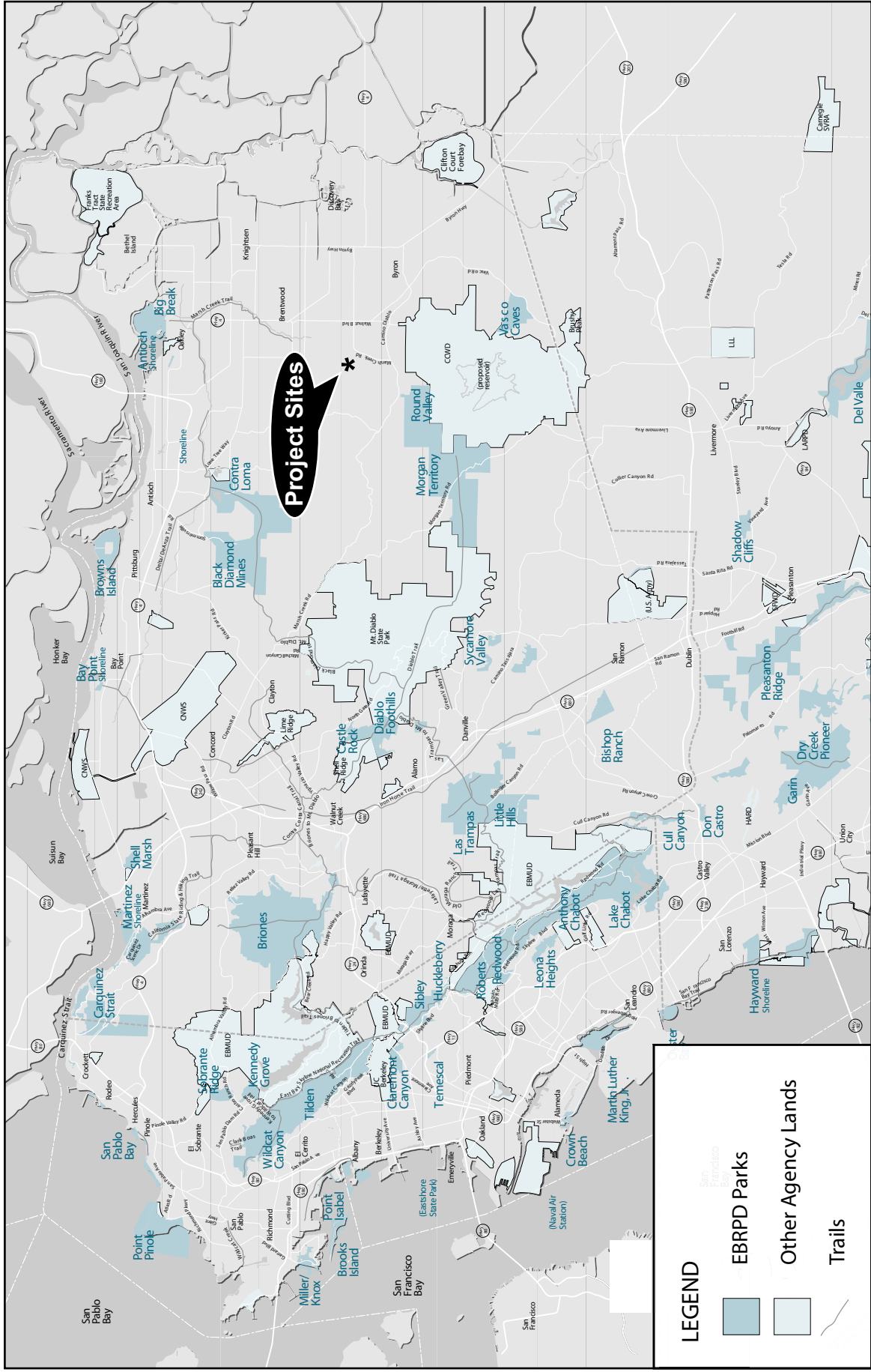
These linkages between habitat types can extend for miles between primary habitat areas and occur on a large scale throughout California. Habitat linkages facilitate movement between populations located in discrete areas and populations located within larger habitat areas. The mosaic of habitats found within a large-scale landscape results in wildlife populations that consist of discrete sub-populations comprising a large single population, often referred to as a meta-population.

Lands and hydrologic features to the north and east of the project site are less suitable for many special-status wildlife species such as CRF, CTS, and San Joaquin kit fox due to agricultural practices and suburban development. However, undeveloped lands and hydrologic features that lie west, south, and southeast of the project site provide suitable habitat for the aforementioned species in addition to many other wildlife species. There is a high potential that some wildlife species utilize the project site for movement to and from the surrounding undeveloped areas. For example, coyotes have been observed moving through the site. However, the acquisition of the 3,942-acre (1,788.72-hectare) Cowell Ranch land by the state park system, which encompasses some of these undeveloped areas, has allowed, and will continue to allow, the maintenance of large areas adjacent to the project site that are likely to be utilized as movement corridors. Exhibit 3.8-3 illustrates the connectivity of State Park to other designated open space lands in the region.

REGULATORY CONTEXT

A number of federal, state and local laws, regulations and policies provide the regulatory framework that guides the protection of biological resources. The following discussion summarizes those laws that are most relevant to biological resources in the vicinity of the project site.

Riparian areas, wetlands, waters of the U.S., and special-status species and communities are considered sensitive biological resources and fall under the jurisdiction of several regulatory agencies. Impacts to these resources often require federal, state, and/or local permits or agreements.



Source: East Bay Regional Park District, Master Plan (1997)



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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Regional Open Space

Exhibit 3.8-3

The permits required vary depending upon the location of the project and the type and extent of impacts. However, prior to the issuance of any permit for actions that would result in impacts to wetlands, waters, or special-status species or communities, notification to all or some of the following agencies may be required:

- ❖ U.S. Army Corps of Engineers (USACE)
- ❖ California Department of Fish and Game (CDFG)
- ❖ California Regional Water Quality Control Board (RWQCB)
- ❖ U.S. Fish and Wildlife Service (USFWS)
- ❖ National Oceanic and Atmospheric Administration (NOAA Fisheries, formerly NMFS)

An overview of the jurisdiction, application requirements and permit programs for each of the above-listed agencies is provided in the following sections.

Federal Jurisdiction – United States Army Corps of Engineers (USACE)

Section 404 of the Clean Water Act (CWA) of 1972 regulates activities that result in the discharge of dredged or fill material into waters of the United States, including wetlands. The primary intent of the CWA is to authorize the United States Environmental Protection Agency (EPA) to regulate water quality through the restriction of pollution discharges, which includes sediments. The USACE has the principal authority to regulate discharges of dredged or fill material into waters of the United States. However, the EPA has oversight authority over the USACE and retains veto power over the USACE's decision to issue permits.

Federal Jurisdiction – United States Fish and Wildlife Service (USFWS)

The Federal Endangered Species Act (FESA) prohibits “take” of federally-listed Threatened or Endangered wildlife species. The FESA defines “take” to mean “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or attempt to engage in any such conduct.” 16 U.S.C. §1532(19). The FESA requires that actions authorized, funded or carried out by federal agencies do not jeopardize the continued existence of a federally-listed species or adversely modify designated Critical Habitat for such species. If a federal agency determines that a proposed federal action (*i.e.*, issuance of a CWA Section 404 permit for wetland fill) “may affect” a listed species and/or designated Critical Habitat, the agency must consult with the USFWS (and/or NOAA Fisheries (formerly known as the National Marine Fisheries Service)) for protected marine and anadromous fish species) in accordance with Section 7 of the FESA. If take of a federally-listed species may occur, the applicant may be required to obtain an Incidental Take Permit from the USFWS. Such take authorization is available through the Section 7 consultation process for projects involving a federal action, or through the Section 10 process (requiring development of a Habitat Conservation Plan) for other projects. The Incidental Take Permit allows taking of federally-listed species if the take is “incidental to and not the purpose of, the carrying out of an otherwise lawful activity” 16 U.S.C. §1539(a)(1)(B).

The Migratory Bird Treaty Act

Pursuant to the MBTA (16 U.S.C. §703 *et seq.*), it is unlawful to pursue, take, capture, or kill any migratory bird or attempt to do so, absent regulations permitting such acts (such as legal hunting). In addition to migratory birds and their parts, the prohibition applies to nests and eggs (*Id.*, 50 C.F.R. §10.12). The list of migratory birds includes raptors (50 C.F.R. §10.13), and thus the protection of the MBTA extends to hawks, eagles, owls, and falcons. Violators of the Act are subject to arrest, fines, and/or imprisonment.

California Department of Fish and Game (CDFG)

The CDFG exercises jurisdiction over wetland and riparian resources associated with rivers, streams, and lakes under California Fish and Game Code Sections 1600 to 1607. The CDFG has the authority to regulate work that will:

1. Divert, obstruct, or change the natural flow of a river, stream, or lake;
2. Change the bed, channel, or bank of a river, stream, or lake, or;
3. Use material from a streambed.

CDFG asserts that its jurisdictional area along a river, stream or creek is usually bounded by the top-of-bank or the outermost edges of riparian vegetation. Typical activities regulated by CDFG under Sections 1600-1607 authority include installing outfalls, stabilizing banks, creek restoration, implementing flood control projects, constructing river and stream crossings, diverting water, damming streams, gravel mining, logging operations and jack-and-boring.

CDFG Codes that Protect Birds

Under California law, it is unlawful to “take, possess, or needlessly destroy the nest or eggs of any bird” except as otherwise provided under law (Cal. Fish & Game Code, §3503). Specific to raptors, it is unlawful to take, possess, or destroy individuals in the order Falconiformes or Strigiformes (all birds of prey) (Cal. Fish and Game Code, §3503.5.). The prohibition applies to the nest or eggs of any such bird (*Id.*). Finally, it is unlawful to take any nongame bird (which includes raptors) except as provided by the Fish and Game Code (*Id.* §3800). Persons found guilty of violating section 3503.5 are subject to a fine of up to \$5,000 or imprisonment of up to one year or both (*Id.* §12010).

Regional Water Quality Control Board (RWQCB)

Pursuant to Section 401 of the CWA, any Section 404 authorization from the USACE for the discharge of dredged or fill material into a water of the United States must, to be effective, be accompanied by a certification from the state that the activity will not violate state water quality standards. The RWQCB provides this certification.

Under the Porter-Cologne Water Quality Control Act (Cal. Water Code §§13000-14920), the RWQCB is authorized to regulate the discharge of waste that could affect the quality of the State’s waters. Therefore, even if a project does not require a federal permit (*i.e.*, a NWP from the USACE), it may still require review and approval of the RWQCB.

When reviewing applications, the RWQCB focuses on ensuring that projects do not adversely affect the “beneficial uses” associated with waters of the State. Generally, the RWQCB defines beneficial uses to include all of the resources, services and qualities of aquatic ecosystems and underground aquifers that benefit the State. In most cases, the RWQCB seeks to protect these beneficial uses by requiring the integration of water quality control measures into projects that will result in discharge into waters of the State. For most construction projects, RWQCB requires the use of construction and post-construction Best Management Practices (BMPs).

Additional requirements of the RWQCB are discussed in the hydrology section of this report.

City of Brentwood General Plan

Goal 7: - Natural Resources: Protect the Brentwood Planning Area’s Natural Resources

Policy 7.2 – Preserve vegetation: Preserve vegetation and associated wildlife habitat in the Brentwood Planning Area.

- 7.2.1 – New Development: Encourage new development to consider effects on the ecosystem in their plans and propose mitigation to potential effects on the biological environment.
- 7.2.2 – Habitat Preservation: Utilize Specific Plans and Natural Preserve areas to preserve wildlife habitat.
- 7.2.3 – Landscape Buffers: Incorporate natural landscape buffers into the project design at the urban/rural interface.
- 7.2.4 – Setbacks: Require setbacks for structures along the edges of biological habitats.
- 7.2.5 – Restoration: Restore riparian habitat values.
- 7.2.6 – Habitat Conservation Plan: Require a Habitat Conservation Plan to be prepared and adopted prior to a General Plan Amendment.

Policy 7.3 – Waterways: Maintain and improve wildlife and plant values along waterways and within flood control facilities.

- 7.3.1 – Channel Restoration: Restore creek channels to their natural condition.
- 7.3.2 – Bank stabilization: Use natural techniques, including restoration of riparian vegetation to stabilize banks.
- 7.3.3 – Ordinance: Prepare and adopt a stream modification ordinance.
- 7.3.4 – Master Plan: Implement the Brentwood Creek Trail and Revegetation Master Plan.

Goal 8 – Open Space: Preserve and enhance natural open space in and around the Brentwood Planning Area.

Policy 8.2 – Tree Protection: Protect mature trees and areas of natural vegetation

8.2.1 – Tree Ordinance: Prepare and adopt a tree preservation ordinance that establishes guidelines for the planting, care and removal of trees.

City of Brentwood Tree Protection

The City of Brentwood General Plan Policy 8.2 provides for the protection of mature trees and areas of natural vegetation. The City policy with regard to replacement values for mature trees requires equal replacement of the lost tree based upon their diameter (pers. comm. Jeff Zilm, 18 September 2003). For example, if the tree being removed is a 40-inch diameter valley oak (measured at 4.5 feet above grade), the cumulative diameters of the in-kind replacement trees would equal 40 inches.

3.8.2 IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Impacts to biological resources would normally be considered significant if the project would:

- ❖ 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.
- ❖ 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 U.S. Fish and Wildlife Service.
- ❖ 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.
- ❖ 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.
- ❖ Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- ❖ Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Method of Analysis for Vineyards Project

This biological analysis is based on a review of documents pertaining to the natural resources of the project area as listed above, examination of aerial photography, biological resources, vegetation maps, and field investigations as described above. The evaluation of whether or not an impact on biological resources would be substantial considers both the resource itself and how that resource fits into a regional or local context. Significant impacts would occur when loss of a resource would diminish, or result in the loss of, an important biological resource, or when such a loss would conflict with local,

state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not deemed significant. The reason for this apparent discrepancy is that, although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish, or result in the permanent loss of, an important resource on a population-wide or region-wide basis.

This section was produced by H. T. Harvey & Associates and is based on biological surveys conducted by Sycamore Associates' biologists upon review of information provided in their reports:

- ❖ Biological Assessment for the Vineyards at Marsh Creek Project (Sycamore 2003a)
- ❖ Vernal Pool Crustacean Habitat Assessment Update (Entomological Consulting Services, Ltd. 2003)
- ❖ California Tiger Salamander Focused Survey for the Vineyards at Marsh Creek Project (Sycamore 2003e)
- ❖ Site Assessment for the California Red-legged Frog, Vineyards at Marsh Creek Project (Sycamore 2003h)
- ❖ California Red-legged Frog Focused Survey for the Vineyards at Marsh Creek Project (Sycamore 2003d)
- ❖ Burrowing Owl Habitat Assessment and Winter Focused Survey for the Vineyards at Marsh Creek Project (Sycamore 2003b)
- ❖ Burrowing Owl Nesting Season Focused Survey for the Vineyards at Marsh Creek Project (Sycamore 2003c)
- ❖ Early Evaluation for the San Joaquin Kit Fox, Vineyards at Marsh Creek Project (Sycamore 2003f).

Infeasibility of Habitat Avoidance as a Mitigation Measure on Vineyards Project Site

A commonly proposed mitigation measure for a project's footprint impacts on biological resources is avoidance of those resources. Alternative 4, discussed in Chapter 6, depicts maximum avoidance of biological resources throughout the project site and discusses feasibility of such an approach. This impact analysis subsection of the EIR does not further address avoidance as a potential mitigation measure for two main reasons.

First, the impact analysis evaluates the proposed project. The Vineyards Project proposes development of the entire 481-acre site, with limited exception of the land above the pipelines traversing the site. The proposed project would avoid trees on the site, to the extent feasible. However, the project does not include sufficient quantities of undeveloped land to avoid other sensitive biological resources, even if the project were reconfigured. As described in the project history section of the Project Description, the Cowell Foundation initially proposed substantial development of much of its 4,907-acre Cowell Ranch for residential, retail and office uses. Opposition to that proposal led to a revision to the County's Urban Limit Line which precluded development of almost 4,000 acres of the Cowell Ranch, and carved out only 448 acres for urban development within the Urban Limit Line. Subsequently, the Cowell Foundation sold, at a below-market price, the land outside of the Urban Limit Line to the Trust for Public Lands for conveyance to

the State Park system. Thus, almost 4,000 acres of land, having similar biological resources to the Vineyards Project site, has been protected. The acreage that remains inside the Urban Limit Line, and available for urban development, was selected by the County for urban development because that acreage was the most appropriate for urban development; this acreage is near existing services and the planned Highway 4 Bypass. Thus, the proposed project includes development of the entire property inside the urban limit line.

The second reason avoidance is not proposed is biological. Preservation of isolated fragments of habitat such as those present on the Vineyards Project site would not be sufficient mitigation for the sensitive species that inhabit the site. For example, preserving a breeding pond for the California tiger salamander without preserving substantial upland habitat for aestivation would not adequately protect the species. In addition, human encroachment upon isolated habitat fragments would limit the functional value of the habitats for special status species.

Mitigation Program Attributes

Several of the mitigation measures proposed for consideration below would require the acquisition, preservation and enhancement of suitable habitat to compensate for loss of habitat on the project site, or would require the acquisition of credits in an approved mitigation bank. Just as the project site provides habitat for a variety of species and contains various sensitive natural communities, mitigation land (and the land within an approved mitigation bank) also may provide habitat suitable for a variety of species and may contain various sensitive natural communities. Thus, the same land or credits acquired for mitigation of one impact may, if also suitable for another species or community, be used to mitigate an impact to another species or sensitive natural community. These mitigation measures are not intended to be mutually exclusive, and may overlap to a substantial extent depending upon the characteristics of the land or credits acquired for mitigation.

In addition, with regard to some of the impacts described below, it is anticipated that the applicant may request, through a Section 7 consultation process between the Army Corps of Engineers and the U.S. Fish & Wildlife Service, a biological opinion and incidental take permit. The Army Corps of Engineers and US Fish & Wildlife Service are not bound by the mitigation measures contained in this EIR, and may conclude that other mitigation measures should be required. If different requirements are imposed through the permitting processes than are imposed by the City when it approves the project, then the applicant may request that the City amend its conditions of approval to adhere more closely to the permitting requirements. In that case, the City would need to determine whether the revised conditions would be sufficient to mitigate impacts to a Less Than Significant Impact level. Upon such a finding, the City could amend its conditions of approval.

**IMPACTS TO
SPECIES IDENTIFIED AS A CANDIDATE, SENSITIVE, OR SPECIAL-STATUS SPECIES**

IMPACT 3.8-A. Seasonal Wetlands - Vernal Pool Brachiopods, Curved-Foot Hygrotus Diving Beetle, and Molestan Blister Beetle – Vineyards Project: Within the project area, 22 seasonal wetlands totaling 0.21 acre (0.08 hectare) provide actual or potential habitat for the vernal pool fairy shrimp, a federally-listed threatened species, as well as other special-status brachiopods. Additionally, these features have at least some potential to support the curved-foot hygrotus diving beetle and the molestan blister beetle. The proposed project will fill both seasonal-wetland groups occupied by vernal pool fairy shrimp. Therefore, the proposed project will have a significant impact on vernal pool crustaceans. (Significant Impact).

Within the project area, 22 seasonal wetlands totaling 0.21 acre (0.08 hectare) provide actual or potential habitat for the vernal pool fairy shrimp, a federally-listed threatened species, as well as other special-status brachiopods. Additionally, these features have at least some potential to support the curved-foot hygrotus diving beetle and the molestan blister beetle. Seasonal wetlands are located in four distinct portions of the site. Two of the seasonal wetland groups were determined occupied by the vernal pool fairy shrimp during protocol-level surveys conducted during the 1996-1998 wet seasons. The proposed project will fill both seasonal-wetland groups occupied by vernal pool fairy shrimp. Therefore, the proposed project will have a significant impact on vernal pool crustaceans. The following mitigation measures, if implemented, would reduce impacts to this suite of vernal pool invertebrate species to a less-than-significant level. In addition, the project applicant intends to obtain incidental take authorization from the USFWS under Section 7 of the FESA. Although the following mitigation measures are consistent with measures imposed by the USFWS through the consultation process for other sites supporting vernal pool fairy shrimp, the USFWS is not bound by the measures in this CEQA document and could through the FESA process impose a different type or different amount of mitigation.

Mitigation 3.8-A1. Seasonal Wetlands - Vernal Pool Brachiopods, Curved-Foot Hygrotus Diving Beetle, and Molestan Blister Beetle – Vineyards Project: Mitigation for vernal pool fairy shrimp and their habitat will be as follows:

- a. **Preservation/Enhancement - For every acre (0.40 hectare) of aquatic, vernal pool fairy shrimp habitat affected, (a) two vernal pool credits will be dedicated within an approved mitigation bank; or (b) based on evaluation of site-specific conservation values and subject to approval by the City, two acres (0.81 hectares) of existing vernal pool habitat and the amount of watershed associated with the preserved pools necessary to sustain the existing hydrology of the pool habitat, at a location within Contra Costa or its surrounding counties, will be acquired, preserved and enhanced through management for the benefit of the vernal pool species;**

OR

- b. **Creation-** For every acre (0.40 hectare) of aquatic vernal pool fairy shrimp habitat affected, at least one vernal pool creation credit will be dedicated within an approved mitigation bank.

(Less Than Significant Impact).

Mitigation 3.8-A.2. Seasonal Wetlands – Vernal Pool Brachiopods, Curved Foot Hygrotus Diving Beetle, and Molestan Blister Beetle – Vineyards Project: The uppermost layer of soil in seasonally inundated habitat may contain cysts of listed crustaceans as well as seeds of vernal pool plants. Therefore, before these wetlands are filled, the top layer of soil shall be made available prior to the start of project grading to any vernal pool creation bank that requests it, with USFWS approval, for inoculating newly created pools. Soil stockpiled for this purpose should be shielded from rain with a water-proof cover to ensure that it remains completely dry.

(Less Than Significant Impact).

IMPACT 3.8-B. Direct Loss of Three Special-Status Plants (stinkbells, hogwallow starfish and spearscale) – Vineyards Project: Implementation of the proposed project would result in the direct loss of stinkbells, hogwallow starfish and spearscale. The three special-status plant species found on the project site are neither federally nor state listed as threatened or endangered. Based on an evaluation by H.T. Harvey & Associates of their ecology, abundance and distribution, including corroboration with regional botanists familiar with the project area, the impacts to these three special-status species would not be considered significant. (Less Than Significant Impact).

Implementation of the proposed project would result in the direct loss of individuals belonging to three special-status plant species. Sycamore Associates detected populations of several special-status plant species during surveys in 2003, including 11 stinkbells, 100 hogwallow starfish, and 1 San Joaquin spearscale. All of these species are considered by the CNPS to have limited distributions in California. San Joaquin spearscale is considered to be rare and endangered in California and elsewhere (CNPS 1B). Sycamore Associates determined that the other 29 special-status plant species, previously identified as potentially occurring on site, are absent from the project site and require no further surveys.

The three special-status plant species found on the project site (stinkbells, hogwallow starfish and spearscale) are neither federally nor state listed as threatened or endangered. Based on H.T. Harvey & Associates' analysis of their ecology, abundance and distribution, including corroboration with regional botanists familiar with the project area, potential impacts to these three special-status species are not considered significant (see also *Direct Loss of Crownscale and Its Habitat – Impact 3.8-B*).

Stinkbells and hogwallow starfish both occur on clay soils in valley and foothill grassland habitat. Although some of this habitat type is being lost to development, vast acreages occur throughout the region and elsewhere in California. Furthermore, relatively large populations of these two species occur within the region, including populations of hogwallow starfish on the adjacent 4500-acre state park. Due to the presence of large populations of these two plants in the region and the abundance of

valley and foothill grassland in California, impacts to these plants are considered less-than-significant. Spearscale is an herbaceous annual that is well-distributed within the project region, including 12 occurrences of populations of this species within a 5-mile radius of the project site (CNDDDB 2003). One of these occurrences, a population of 3,300 plants, is located on the state park that is adjacent to the Vineyards project and provides higher quality habitat. Due to the abundance of spearscale in the immediate project area, the loss of one individual on the project site is considered a less-than-significant impact.

Mitigation 3.8-B: Loss of Stinkbells, Hogwallow Starfish and Spearscale – Vineyards Project: This impact is considered Less Than Significant Impact and, therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.8-C. Direct Loss of Crownscale – Vineyards Project: Populations of crownscale, totaling 500 individuals were found on the project site during 2003 surveys by Sycamore Associates. Crownscale occurs in alkali habitats that are becoming increasingly uncommon in the region due to development. Therefore, direct loss of 500 individuals of this species is considered significant. (Significant Impact).

Populations of crownscale, totaling 500-800 individuals were found on the project site during 2003 surveys by Sycamore. This species occurs in alkali meadows and alkaline depressions in valley and foothill grasslands that are becoming increasingly uncommon. Although 10,000-15,000 individuals of this species were observed during surveys on Cowell Ranch in 1993, crownscale is an annual whose population numbers vary substantially from year to year based on rainfall patterns and changes in land use management, among other factors. As such, it is difficult to compare population numbers from different sites and different years.

The plants observed on site and within this portion of Contra Costa County primarily occur on a soil type identified as Pescadero clay loam by the Soil Conservation Service (SCS 1977; now Natural Resource Conservation Service). The aerial photographs taken by the SCS in 1970 and presented in soil survey manual (SCS 1977) show that that this soil type at one time supported valley and foothill grassland and alkali meadows habitats on broad, flat valley bottoms near Deer Valley, Lone Tree Valley and Briones Valley. Over the last 20-plus years some of these areas have been developed or are currently under consideration for development in the near future. Due primarily to the loss of alkali meadow habitat in the region, the direct loss of 500-800 individuals of this species is considered significant. The following mitigation measure, if implemented, will reduce these impacts to a less-than-significant level. Impacts to habitat in which this plant occurs are addressed in the *Loss of Alkali Meadow* section, below.

Mitigation 3.8-C1. Crownscale – Vineyards Project. The project applicant will compensate for the loss of crownscale at a 1:1 ratio (a) by acquiring, preserving and enhancing through management existing alkali meadow habitat in Contra Costa or surrounding counties, or (b) by purchase of credits in an approved mitigation bank. (See *Loss of Alkali Meadow*, at 3.8-O, below). (Less Than Significant Impact).

Recommended Mitigation 3.8-C2. Crownscale – Vineyards Project. Mitigation Measure 3.8-C1 will reduce the impact to crownscale to a Less Than Significant Impact level. However, to further minimize the impact from direct loss of crownscale, the following additional measure is recommended:

To the extent feasible given the time period for site grading, a Plant Mitigation Plan shall be developed for collecting seed on the project site and distributing the seed in a suitable offsite alkali meadow location. The Plant Mitigation Plan shall include the following factors:

- a. Location of suitable off-site areas for seed distribution.
- b. A description of the seed collection technique, measures to maintain seed viability, and seeding techniques to be employed in the restoration effort.
- c. A timetable for implementation of the Plant Mitigation Plan.

(Less Than Significant Impact)

IMPACT 3.8-D Impacts to California Tiger Salamander (CTS) – Vineyards Project: The proposed project would remove three CTS breeding ponds, which encompass a total of 0.8 acre (0.32 hectare). All potential and occupied upland aestivation habitat, which includes 13 areas of ground squirrel burrow concentrations in addition to the on-site area within 600 feet of breeding ponds, totaling approximately 103 acres (41.7hectares) would be removed by the project. The loss of CTS individuals, breeding habitat, and aestivation habitat would be considered a significant impact. (Significant Impact).

CTS are currently proposed for federal listing as Threatened, and are a California Species of Special Concern. Six adult CTS were found using ground squirrel burrows on site as aestivation habitat. CTS were also identified as breeding in three of the stock ponds on site (pond 2 along the northern drainage and ponds 3 & 4 along the southern drainage), and H. T. Harvey & Associates' herpetologists observed CTS larvae in one of the stock ponds. The proposed project would remove the three breeding ponds, which encompass a total of 0.8 acre (0.32 hectare) of aquatic breeding habitat. Except for four acres above the water tank site, all potential and occupied upland aestivation habitat, which includes 13 areas of ground squirrel burrow concentrations in addition to the on-site area within 600 feet of breeding ponds, totaling approximately 103 acres (41.7 hectares) would be removed by the project. The loss of CTS individuals, breeding habitat, and aestivation habitat would be considered a significant impact. Implementation of the following mitigation measures would reduce the impact to a less-than-significant level.

Mitigation 3.8-D.1. California Tiger Salamander (CTS) – Vineyards Project. Prior to the issuance of a building permit, similar or higher-quality aquatic breeding habitat for the CTS shall be created or acquired, preserved in perpetuity, and enhanced through management for the benefit of the species (at a 1:1 acreage ratio for preserved/enhanced habitat or a 2:1 ratio for created habitat, or through a

combination of preserved and created breeding habitat using these same ratios) at a location offsite or equivalent credits can be purchased at an approved mitigation bank. Aquatic breeding habitat will contain the following features:

1. Emergent vegetation
2. absence of known CTS predators, and
3. water quality and hydrological conditions suitable to breeding and larval development

In addition, upland aestivation habitat with the following features shall be acquired, preserved in perpetuity, and enhanced through management for the benefit of the species at a 1:1 acreage ratio:

1. contiguous to the aquatic breeding site and
2. grassland habitat,
3. presence of ground squirrel or other fossorial mammals.

(Less Than Significant Impact).

Recommended Mitigation 3.8-D.2. California Tiger Salamander (CTS) (Salvage and Translocation) – Vineyards Project. Implementation of Mitigation Measure 3.8-D.1 will reduce impacts to the California Tiger Salamander to a Less Than Significant Impact level. However, to further minimize impacts to the CTS, the following additional measure is recommended: To the extent feasible, prior to grading, the applicant will direct a qualified biologist possessing all applicable permits to relocate CTS larvae to suitable aquatic habitat.

(Less Than Significant Impact).

IMPACT 3.8-E. Potential Impacts to California Red-Legged Frog (CRF) – Vineyards Project: No CRF were observed within the project area or Marsh Creek during surveys. However, the potential remains for CRF to be present during construction of the outfall or bridge crossing within Marsh Creek or during construction of the remainder of the project. As such, the proposed project could have a significant impact on the CRF. (Potentially Significant Impact).

Although the CRF Site Assessment identified potential habitat on site and within Marsh Creek, no frogs were observed within the project area or Marsh Creek during focused surveys conducted according to the USFWS survey protocol for this species. Therefore, CRF are not expected to be affected by the project. Nevertheless, it is still possible that CRF could occur on the project site and be affected by project construction. If that occurs, the impact of the project on CRF could be significant. Implementation of the following mitigation measures would reduce the impact to a less-than-significant level.

Mitigation 3.8-E1. California Red-legged Frog – Vineyards Project. A qualified biologist will conduct pre-construction surveys for CRF in all construction areas located within 300 feet of Marsh Creek. Following preconstruction surveys with negative results, all vegetation within the project impact area adjacent to and in the creek (or other relevant wetland habitats) will be removed and exclusion fencing will be established around the perimeter of the project impact area.

If CRF are found at or near the site and the applicant has previously obtained incidental take authorization from the USFWS for this species, then the applicant shall implement any conditions which are included with that authorization.

If CRF are found at or near the site and the applicant has not obtained incidental take authorization from the USFWS for this species, then the observed frog(s) will be allowed to move naturally out of the construction zone. Once it is determined that CRF are not present in the construction zone, the construction zone will be cleared of vegetation and silt fencing buried six inches below ground surface will be installed between the construction zone and Marsh Creek to prevent CRF from moving back into the construction area. A qualified biologist will then survey the construction zone to confirm that no CRF are present. In addition, the applicant shall take appropriate measures to ensure that CRF are not affected by project activities. Such measures may include minimization of disturbance within the banks of the creek, minimization of construction and staging impacts within riparian habitat, additional pre-construction surveys for CRF, and periodic monitoring of the site for this species during construction.

Mitigation 3.8-E2. California Red-legged Frog – Vineyards Project. A qualified biologist will provide project contractors and construction crews with a worker-awareness program before any work within Marsh Creek or adjacent upland habitats that are appropriate for CRF. This program will be used to describe the species, its habits and habitats, its legal status and required protection, and all applicable mitigation measures.

(Less Than Significant Impact).

IMPACT 3.8-F Impacts to Western Pond Turtle – Vineyards Project: The western pond turtle, federal species of Concern and California species of Special Concern, has a moderate potential to occur on the project impact area. If western pond turtles are found on the site, or if a nest is present on site, the project could have a significant impact. (Potentially Significant Impact).

The western pond turtle, federal species of Concern and California species of Special Concern, has a moderate potential to occur on the project site, as suitable aquatic habitat is present within stock ponds and within Marsh Creek adjacent to the site. In addition, the non-native annual grasslands within 1,300 feet of aquatic habitats provide suitable habitat for pond turtle nesting. Pond turtle nests are cryptic and very difficult to find; no practical means exist to detect them. Therefore, while avoiding impacts to individual western pond turtles can be accomplished, avoidance of impacts to nests, once eggs are laid, may not be possible.

If western pond turtles are found on the site, or if a nest is present on site, the project could have a significant impact. Implementation of the following mitigation measures would reduce the impact to a less-than-significant level.

Mitigation 3.8-F.1. Western Pond Turtle – Vineyards Project. A qualified biologist will conduct pre-construction surveys for western pond turtles in all construction areas located within 300 feet of Marsh Creek or stock ponds. If a western pond turtle is found during pre-construction surveys, it will be relocated as necessary to a location in Marsh Creek deemed suitable by the biologist (i.e., at a location in Marsh Creek which is a sufficient distance from construction activities). Because attempting to locate pond turtle nests will not result in a realistic probability of detection, if a western pond turtle is found in Marsh Creek adjacent to the site, exclusion fencing will be used to eliminate the possibility of nest establishment in uplands adjacent to that portion of Marsh Creek. This measure may be required for other species (see mitigation for *California red-legged frog*).

Mitigation 3.8-F.2. Western Pond Turtle – Vineyards Project. A qualified biologist will provide project contractors and construction crews with a worker-awareness program before any work within Marsh Creek or adjacent upland habitats that are appropriate for western pond turtles. This program will be used to describe the species, its habits and habitats, its legal status and required protection, and all applicable mitigation measures.

(Less Than Significant Impact).

IMPACT 3.8-G. Potential Impacts to Tree Nesting Raptors – Vineyards Project. White-tailed Kites, Golden Eagles, and other special-status raptor species may nest in, or in the vicinity of the project area. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. (Potentially Significant Impact).

White-tailed Kites, Golden Eagles, and other special-status raptor species may nest in, or in the vicinity of the project area. Construction activities may result in the loss of potential nesting habitat for these species, but similar habitat is abundant in the area and little riparian habitat will be disturbed. Accordingly, loss of such nesting habitat is considered a less-than-significant impact. However, construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Any loss of fertile raptor eggs or nesting raptors, or any activities resulting in raptor nest abandonment, would constitute a significant impact. Construction activities such as tree removal, site grading, etc., that disturb a nesting raptor on-site or immediately adjacent to the construction zone would constitute a significant impact. Implementation of the following mitigation measures would reduce the adverse environmental effects of the proposed project on raptors nesting within the project site or immediately adjacent to the site to a less-than-significant level (see also *Swainson's Hawk* and *Burrowing Owl*).

Mitigation 3.8-G1. Tree Nesting Raptors – Vineyards Project. Demolition and construction should be scheduled, to the extent feasible, to avoid the nesting season, which extends from February through August. If it is not possible to schedule demolition and construction between September and January, then one of the following options (Mitigation 3.8-G2. or 3.8-G3.) shall be implemented.

AND

Mitigation 3.8-G2. Tree Nesting Raptors – Vineyards Project. Trees containing known or potential raptor nest sites may be removed during the non-breeding season to discourage future nesting attempts on the condition that no raptor pair is currently utilizing the nest site. Monitoring evidence that any nests in trees planned for early removal are unattended by reproductive-aged birds must be provided. Alternatively, Mitigation 3.8-G.3 may be used.

OR

Mitigation 3.8-G3. Tree Nesting Raptors – Vineyards Project. Pre-construction surveys for nesting raptors shall be conducted by a qualified biologist to ensure that no raptor nests will be disturbed during project implementation. A pre-construction survey shall be conducted no more than 14 days prior to the initiation of demolition/construction activities during the early part of the breeding season (January through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). During this survey, a qualified biologist shall inspect all trees in and immediately adjacent to the impact areas for raptor nests. If an active raptor nest is found sufficiently close (as determined by the qualified biologist) to the construction area to be affected by these activities, the qualified biologist shall determine a construction-free buffer zone to be established around the nest.

(Less Than Significant Impact).

IMPACT 3.8-H. Impacts to Burrowing Owl – Vineyards Project: Suitable foraging and nesting habitat was identified, and 9 Burrowing Owls were observed over-wintering on the site, in four different areas. One breeding pair was observed during the nesting season surveys in the area near pond 1 (Sycamore 2003b,f). Construction of the proposed project would result in loss of occupied over-wintering and nesting habitat for Burrowing Owls, and could result in nest destruction and adult mortality. (Significant Impact).

A habitat assessment was conducted for Burrowing Owls, a California Species of Special Concern, in addition to winter and nesting season focused surveys. Suitable foraging and nesting habitat was identified, and 9 Burrowing Owls were observed over-wintering on the site, in four different areas. One breeding pair was observed during the nesting season surveys in the area near pond 1 (Sycamore 2003b,f). Construction of the proposed project would result in loss of occupied over-wintering and nesting habitat for Burrowing Owls, and could result in nest destruction and adult mortality.

Therefore, the project would have a significant impact on Burrowing Owls. Implementation of the following mitigation measures would reduce the impact to a less-than-significant level.

Mitigation 3.8-H.1. Burrowing Owl. – Vineyards Project. Numbers and locations of burrowing owls will be periodically monitored until project implementation in order to determine the number and location of burrowing owls on the project site.

Mitigation 3.8-H.2. Burrowing Owl.– Vineyards Project. The CDFG staff report (CDFG 1995) and current guidelines suggest that a minimum of 6.5 acres of replacement habitat (equal in quality, and occupied by Burrowing Owls) is required to mitigate the loss of habitat occupied by each owl (or nesting pair). Using the population that will be affected, as estimated from the additional surveys required by Mitigation H.1, habitat in the amount specified above shall be acquired, permanently protected, and enhanced through management for the benefit of the species, to compensate for the loss of Burrowing Owl habitat on the project site. The acquired, protected and enhanced lands shall be occupied Burrowing Owl habitat. Alternatively, the applicant can purchase the required acreage in an approved mitigation bank.

Mitigation 3.8-H.3. Burrowing Owl. – Vineyards Project Passive relocation techniques, following CDFG (1995) guidelines, involve the placement of one-way exclusion devices on occupied and potentially occupied burrows. This is done to ‘evict’ owls from sites, to preclude nest establishment and/or the probability of killing owls. However, because the property is 481 acres, and occupied by California ground squirrels which continually create new burrows, monitoring of the owl population on site will be necessary in addition to implementation of this method.

Given the size of this project, the applicant shall employ the following approach. Monitoring should be conducted at a level of effort appropriate to the season and apparent owl population to identify specific locations within the project site that are occupied by owls (*i.e.*, if initial observations detect numerous owls, more survey and monitoring effort is indicated. Conversely, a paucity of owl observations may indicate that little monitoring is required to achieve the requisite level of confidence that no owls will be harmed). Owls shall be excluded from all occupied burrows within the project area. Any owl eviction must be completed outside the Burrowing Owl breeding season.

Mitigation 3.8-H.4. Burrowing Owl. – Vineyards Project. Ground squirrels create and maintain burrows used by Burrowing Owls. However, as explained above, successfully excluding owls from large sites with extant squirrel populations, using only one-way doors, is difficult to implement with a reasonable probability of success. Accordingly, habitat management, in addition to passive eviction and monitoring will be used. In areas where construction is proposed during the nesting season (February – August), habitat management measures shall be performed

outside of the nesting season designed to reduce burrow availability and habitat quality. This measure must be preceded by surveys (see Mitigations H.1 and H.3), to ensure that this activity does not result in loss of individual burrowing owls.

(Less Than Significant Impact).

IMPACT 3.8-I. Impacts to Swainson’s Hawk – Vineyards Project: The dry-land on-site pasture provides suitable foraging habitat for Swainson’s Hawks. However due to the abundance of foraging habitat on the nearby State Park Land and available agricultural land in the vicinity, the loss of foraging habitat on this site would be considered Less Than Significant Impact. The large trees on the site and also along Marsh Creek provide potential nesting habitat. At least one active Swainson’s Hawk nest is known to occur within 5 miles (8.0 kilometers) of the project site (CNDDDB 2003) and a potential nest was identified during an overview survey conducted by H. T. Harvey & Associates during 2003. Given the abundance of similar potential nesting and foraging habitat locally and regionally, the loss of this habitat is considered less-than-significant. Loss of an occupied Swainson’s Hawk nest, however, would be considered a significant impact. (Potentially Significant Impact).

The dry-land pasture on the site provides suitable foraging habitat for Swainson’s Hawks, and the large trees on the site and also along Marsh Creek provide potential nesting habitat. Similar habitats are regionally abundant. The Vineyards project site is at the edge of the Swainson’s hawk range, and other suitable foraging habitat nearby includes the state parkland adjacent to the Vineyards project site and agricultural land in the nearby vicinity. Given the large amount of suitable foraging habitat nearby, the loss of the project site for foraging use is not considered significant.

Loss of an occupied Swainson’s Hawk nest, however, would be considered a significant impact. If during the pre-construction surveys, Swainson’s Hawks are found nesting on or adjacent to the site, the project could have a potentially significant impact. At least one active Swainson’s Hawk nest is known to occur within 5 miles (8.0 kilometers) of the project site (CNDDDB 2003). Also, a possible nest was identified during an overview survey conducted by H. T. Harvey & Associates during 2003. Implementation of the following mitigation measure would reduce the impact to a less-than-significant level.

Mitigation 3.8-I. Swainson’s Hawk. – Vineyards Project. In order to ensure that nesting Swainson’s Hawks will not be affected by construction in the project area, a qualified biologist shall conduct pre-construction surveys. Survey Period I occurs from January 1 – March 20, Period II from March 20 – April 5, Period III from April 5 – April 20, Period IV from April 21 – June 10, and Period V is from June 10 – July 30. Three surveys shall be completed in at least each of the two survey periods immediately prior to a project’s initiation. If a nest site is found, then, similar to Mitigation Measures 3.8-G.2 and G.3, above, either of the following procedures must be followed:

1. Trees containing known or potential raptor nest sites may be removed during the non-breeding season to discourage future nesting attempts on the condition that

no Swainson's Hawk pair is currently utilizing the nest site. Monitoring evidence that any nests in trees planned for early removal are unattended by reproductive-aged birds must be provided; or

2. If an active Swainson's Hawk nest is found sufficiently close (as determined by the qualified biologist) to the construction area to be affected by construction activities, a qualified biologist shall determine the extent of a construction-free buffer zone to be established around the nest.

(Less Than Significant Impact).

IMPACT 3.8-J. Nesting Special-Status Passerines – Vineyards Project: Special-status passerine bird species including the Loggerhead Shrike, California Horned Lark, and California Yellow Warbler have the potential to nest in existing vegetation (trees and shrubs) and the California Horned Lark, a California Species of Special Concern, and the Loggerhead Shrike, a California Species of Special Concern and federal Species of Concern, have been observed on site. Construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. (Potentially Significant Impact).

Special-status passerine bird species including the Loggerhead Shrike, California Horned Lark, and California Yellow Warbler have the potential to nest in existing vegetation (trees and shrubs). The California Horned Lark, a California Species of Special Concern, and the Loggerhead Shrike, a California Species of Special Concern and federal Species of Concern, have been observed on site. Construction activities may result in the loss of potential nesting habitat for these species. However, because similar habitat is relatively abundant in the area and little riparian habitat will be disturbed, loss of such nesting habitat is considered a less-than-significant impact. Construction disturbance during the breeding season could also result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered a potentially significant impact on these species. Implementation of the following mitigation measures will reduce the potential impact to a Less Than Significant Impact level.

Mitigation 3.8-J. Nesting Special-Status Passerines. – Vineyards Project. If construction is to occur during the breeding season (February – August), pre-construction surveys in habitats appropriate for the Loggerhead Shrike, California Horned Lark, and California Yellow Warbler should be conducted by a qualified biologist no more than 15 days prior to the initiation of construction in any given area. Pre-construction surveys should be used to ensure that no nests will be disturbed during project implementation. If nests are found during these surveys, the preferred mitigation will be to determine whether the nest will become complete before the onset of construction activities. In this event, the nest will be allowed to remain undisturbed. Alternatively, if the status of the nest at the time of detection, coupled with the species' specific egg-laying, incubation, and chick-rearing interval indicates that the nest will not be completed prior to the onset of otherwise approved construction, arrangements will be made to transport the nest to a CDFG-approved wildlife rehabilitation facility. The nest will be protected by a construction and

disturbance-free buffer of sufficient size until the eggs hatch. Following hatch and a sufficient interval for any chicks to become capable of self-thermoregulation, the entire nest and contents will be transported to the approved facility for rearing. (Less Than Significant Impact)

IMPACT 3.8-K. Potential Impacts to Special-Status Bat Species – Vineyards Project: Mature trees scattered in the project grassland and found along the banks of Marsh Creek provide potential roosting habitat for two special-status bat species that have a low potential to occur on site. Moreover, there is a low potential for pallid bat maternal colonies to occur within hollow trees on site. Removing large oaks that have cavities could potentially result in the direct loss of colonies, which would constitute a significant impact. (Potentially Significant Impact).

Mature trees scattered in the grassland and found along the banks of Marsh Creek provide potential roosting habitat for two special-status bat species that have a low potential to occur on site. These species include the pallid bat, and Townsend’s big-eared bat, both California Species of Special Concern. In addition, there is a low potential for pallid bat maternal colonies to occur within hollow trees on site. Removing large oaks that have cavities could potentially result in the direct loss of colonies, which would constitute a significant impact. Implementation of the following mitigation measures would reduce the impact to a less-than-significant level.

Mitigation 3.8-K.1. Special-Status Bat Species – Vineyards Project. A pre-demolition survey for roosting bats should be conducted prior to any removal of trees. The survey should be conducted by a qualified biologist (*i.e.*, a biologist holding a CDFG collection permit and a Memorandum of Understanding with CDFG allowing the biologist to handle and collect bats). No activities that would result in disturbance to active roosts would proceed prior to completion of the surveys. If no active roosts are found, then no further action would be warranted. If either a maternity roost or hibernacula is present, the following mitigation measure shall be implemented.

Mitigation 3.8-K.2. Special-Status Bat Species – Vineyards Project. If active maternity roosts or hibernacula are found in trees which will be removed as part of project construction, demolition of that tree should commence before maternity colonies form (*i.e.*, prior to March 1) or after young are volant (flying) (*i.e.*, after July 31). Disturbance-free buffer zones as determined by a qualified bat biologist should be observed during the maternity roost season (March 1 - July 31).

If a non-breeding bat hibernacula is found in a tree scheduled to be removed, the individuals should be safely evicted, under the direction of a qualified bat biologist (as determined by a Memorandum of Understanding with CDFG), by opening the roosting area to allow airflow through the cavity. Demolition should then follow at least one night after initial disturbance for airflow. This action should allow bats to leave during darkness, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight.

Trees with roosts that need to be removed should first be disturbed at dusk, just prior to removal that same evening, to allow bats to escape during the darker hours.

(Less Than Significant Impact)

IMPACT 3.8-L. Potential Impacts to San Joaquin Kit Fox – Vineyards Project: The Vineyards project site is located in the extreme northern limit of the San Joaquin kit fox range, kit foxes are unlikely to be present on the site, and suitable kit fox habitat and kit fox corridors will remain on the adjacent state parkland. Nevertheless, the loss of potential kit fox habitat and potential kit fox corridors due to project implementation is considered a potentially significant impact. (Potentially Significant Impact).

A formal Early Evaluation for the San Joaquin kit fox was conducted on the Vineyards at Marsh Creek project site (Sycamore Associates 2003). This evaluation followed the protocol recommended by the USFWS (1999). The Early Evaluation process is a qualitative assessment of kit fox habitat suitability and an assessment of the likelihood that kit foxes occur in the area, based on the distribution of known records and the habitat present on and in the vicinity of the site. As part of the Early Evaluation process, Sycamore Associates compiled regional kit fox occurrence records, primarily from several sources: *Distribution of the San Joaquin fox in the North Part of Its Range* (H. T. Harvey & Associates 1997), and a personal database (Townsend 2003, unpublished data).

Although protocol-level surveys to determine whether San Joaquin kit foxes occur have not yet been conducted on the subject site, Sycamore Associates and H. T. Harvey & Associates concur that it is improbable that San Joaquin kit foxes regularly use the site, or incorporate the site into their home ranges. This opinion is based upon the scarcity of known kit fox occurrences throughout the region, the length of time that has elapsed since many of these few observations were made, the distance from the locations of these occurrences to the subject site, and the frequency of negative survey results (despite intensive survey effort) in nearby locations throughout the region in recent years.

Nonetheless, the Early Evaluation resulted in the determination that the project site provides suitable foraging habitat, some denning opportunities, and a potential movement corridor should kit foxes be present. No kit foxes or secondary signs of kit foxes were detected within the study area, but protocol level surveys would be required to confirm with an acceptable level of confidence that kit foxes can be presumed absent from the subject property. The report concluded that it was unlikely that kit foxes were currently resident on the project site, but kit foxes could be present in surrounding areas, based on historical records and the suitability of habitats west and south of the site.

The Vineyards at Marsh Creek project site lies near the extreme northern limit of the San Joaquin kit fox distribution. There are several records of kit fox in the region during the last decade. Kit foxes have been observed in the East Bay Regional Park District's (EBRPD) Black Diamond Mines Regional Preserve, approximately 5.5 miles northwest of the project site. Personnel from both EBRPD and CDFG have observed kit fox at Black Diamond Mines Regional Preserve during 1996, 1997, and 1999 (EBRPD, unpublished data). Kit foxes have also been observed at Bethany Reservoir in 1998, about 9 miles southeast of the subject property, at Vasco Caves during 2001 and 2002, about

5 miles south-southeast of the Vineyards property, and at Brushy Peak during 2002, about 8 miles south-southeast.

Although the aforementioned observations are widely separated both temporally and spatially, these, and other records indicate that the kit fox may be present regionally, albeit in extremely low numbers. Additionally, the East Contra Costa County Habitat Conservation Plan (HCP)/Natural Communities Conservation Plan (NCCP) process has tentatively identified the project site as suitable core habitat and as potential kit fox movement route, within the City of Brentwood's Urban Limit Line. Accordingly, there is a potential impact to habitats and corridors used by San Joaquin kit foxes.

Because the project site is near the extreme fringe of the distribution of the San Joaquin kit fox, there appear to be few animals sparsely distributed throughout the region, and they have not been identified on the site, the impact from development of the Vineyards project site reflects primarily a cumulative corridor loss issue. Here, cumulative loss of travel corridors is lessened by the proximity of the site to the protected state park land adjacent to the site. The Vineyards Project site is adjacent to existing development and will be adjacent to Segment 3 of the State Route 4 Bypass. The State Park property next to the project site is expected to remain available as a potential travel corridor. Thus, loss of the project site, on a cumulative basis, is not as substantial as it would be were the site to be part of a potential corridor more susceptible to incremental future development. Adoption of the following mitigation will lessen the impact to a level of less-than-significant.

Mitigation 3.8-L. Potential Impacts to San Joaquin Kit Fox– Vineyards Project: The project applicant will compensate for the loss of potential kit fox habitat and potential kit fox travel corridor on the subject property by, at a 1:1 ratio, (a) acquiring, preserving, and enhancing through management for the benefit of the species habitat suitable for foraging, denning, and travel corridors by the San Joaquin kit fox; or (b) participation in the HCP/NCCP, once it becomes operational; or (c) acquisition of credits in an approved mitigation bank. Lands acquired independent from the NCCP/HCP should be primarily grasslands, and should be managed for the San Joaquin kit fox. (Less Than Significant Impact).

IMPACT 3.8-M Potential Loss of Individual Kit Foxes – Vineyards Project: Although kit foxes are expected to be absent from the project site, they could on rare occasions move through it. If transient individuals were harmed during construction of the Vineyards project, a significant impact would result. (Potentially Significant Impact).

Although kit foxes are expected to be absent from the project site, they could on rare occasions move through it. To mitigate the risk to transient individuals from construction impacts, surveys and standard avoidance measures will be used, consistent with the USFWS (1999) pre-construction guidelines. If adopted, these measures will lessen the potential impact on kit foxes to a less-than-significant level.

Mitigation 3.8-M. Potential Take of Kit Foxes – Vineyards Project. The following mitigation measures would result in less than significant impacts to the potential loss of individual kit foxes during Vineyards project construction:

- ❖ Pre-construction surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities for any project activity likely to impact the San Joaquin kit fox. If construction is phased, pre-construction surveys shall be conducted for each phase according to the timing and schedule stated above.
- ❖ An employee education program shall be conducted. A qualified biologist will provide project contractors and construction crews with a worker-awareness program before any grading or construction work occurs on the Vineyards project site. This program will be used to describe the species, its habits and habitats, its legal status and required protection, and all applicable mitigation measures
- ❖ Project-related vehicles shall observe a 20-mph speed limit in the project area, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active.
- ❖ To the extent practicable, nighttime construction shall be minimized.
- ❖ Off-road traffic outside of designated project areas shall be prohibited.
- ❖ To prevent inadvertent entrapment of kit foxes or other animals during the construction phases of the projects, all excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials or equipped with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals.
- ❖ All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the Service has been consulted. If necessary, and under the direct supervision of a qualified biologist, the pipe may be moved once to remove it from the path of construction activity.
- ❖ All food related trash items; such as wrappers, cans, bottles, and food scraps, shall be disposed of in a closed container and removed at least once a week from a construction or project site.

(Less Than Significant Impact)

IMPACT 3.8-N. Impacts to Species Identified as a Candidate, Sensitive, or Special-Status – Annexation Sites: Given the proximity of the Annexation Sites to the Vineyards project site, the similarity in many characteristics of these sites to the Vineyards project, and historical findings made by LSA in earlier studies, future development of one or both of the Annexation Sites could result in the disturbance or removal of sensitive species and could result in the loss of occupied or potential habitat for sensitive or special-status species. (Potentially Significant Impact).

The Annexation Sites exist in near vicinity of Marsh Creek and the Vineyards project site. No plans currently exist for improvements to the John Marsh Home or development of a community college. However, such plans may be developed by the State Department of Parks and Recreation (John Marsh Home) or the CCCCDC (community college site). Improvements to the John Marsh Home are contemplated to include minimal disturbance (e.g., development of a potential parking lot) which would result in minimal disturbance to wildlife or habitat areas. Development of a new community college could, however, result in substantial changes to vegetation communities/wildlife habitat or to wildlife species.

The Annexation Sites were identified by LSA Associates in the early and mid-1990's to be primarily covered by non-native grasslands. However, at least one burrowing owl was sited on the community college site. Moreover, at least one stock pond (and up to four) was observed on the community college site as were CTS larvae. Big tarplant (a special-status plant) was observed on the community college site).

Given the proximity of the Annexation Sites to the Vineyards project site, the similarity in many characteristics of these sites to the Vineyards project, and historical findings made by LSA in earlier studies, one or both of the Annexation Sites could result in disturbance or removal of the sensitive species listed below. Moreover, if improvement plans are created for the John Marsh Home and development plans designed for the community college site, further site specific studies would be prepared for the sites and may reveal other sensitive species to be discovered on the sites.

- ❖ Vernal pool brachiopods, curved-foot hygrotus diving beetle and molestan
- ❖ Special-status plants (e.g., stinkbells, hogwallow starfish, spearscale and big tarplant;
- ❖ California tiger salamander;
- ❖ California red-legged frog;
- ❖ Western pond turtle;
- ❖ Nesting raptors;
- ❖ Burrowing owls;
- ❖ Swainson's hawk;
- ❖ Nesting special-status passerines;
- ❖ Special-status bat species
- ❖ and San Joaquin kit fox.

Mitigation 3.8-N.1. Impacts to Species Identified as a Candidate, Sensitive, or Special-Status – Annexation Sites : Prior to the approval or commencement of grading, the California Department of Parks and the CCCCD shall conduct site-specific biological resources surveys to determine the presence or absence of sensitive or special status species or occupied or potential habitat for sensitive or special status species on the sites.

If it is determined that sensitive or special status species or occupied or potential habitat for sensitive or special status species occur on either site, then the State Department of Parks and/or the CCCCD (as relevant) shall require a qualified biologist to design mitigation for the site(s) similar to that of Mitigation Measures 3.8-A1., 3.8-A2., 3.8-C1., 3.8-C2., 3.8-D1., 3.8-D2., 3.8-E1., 3.8-E2., 3.8-F1., 3.8-F2., 3.8-G1., 3.8-G2., 3.8-H1., 3.8-H2., 3.8-H3., 3.8-H4., 3.8-I., 3.8-J., 3.8-K1., 3.8-K2., 3.8-L. and, 3.8-M., as identified for the Vineyards project. (Less Than Significant Impact).

IMPACTS ON

RIPARIAN HABITAT OR OTHER SENSITIVE NATURAL COMMUNITIES

IMPACT 3.8-O. Loss of Alkali Meadow – Vineyards Project: Approximately 8.0 acres of alkali meadow occur along drainages and in the vicinity of ponds 1 and 2 on the project site. This habitat is recognized as a sensitive habitat by the CDFG (CNDDDB 2003). Construction of the proposed project will result in loss of all alkali meadow habitat on the project site. (Significant Impact).

Approximately 8.0 acres of alkali meadow occur along drainages and in the vicinity of ponds 1 and 2 on the project site. This habitat is recognized as a sensitive habitat by the CDFG (CNDDDB 2003). Alkali meadow is a unique habitat that occurs on highly alkaline, fine-textured soils on seasonally-to-perennially moist soils in valley bottoms. These habitats host an uncommon suite of alkaline-tolerant, hydrophytic plants including many special-status species (two special-status plant species in the *Atriplex* genus have been identified on the project site within alkali meadow habitat). Alkali meadow habitat has a limited distribution in the region

Construction of the proposed project will result in loss of all alkali meadow habitat on the project site. Implementation of the following mitigation measure will reduce the potential impact to a less-than-significant level.

Mitigation 3.8-O.1. Alkali Meadow – Vineyards Project: The project applicant will replace the loss of alkali meadow habitat at a 1:1 mitigation ratio, by acquiring, preserving, and enhancing through management (including among other measures, grazing control) existing alkali meadow habitat. Mitigation requirements may be met through the purchase and set aside of 8.0 acres of existing alkali meadow habitat within Contra Costa or surrounding counties or purchase of credits in an approved mitigation bank. (Less Than Significant Impact).

IMPACT 3.8-P. Disturbance to Aquatic Habitat Due to Placement of the Outfall Structures – Vineyards Project: Construction of the outfall structures for the detention basin and water quality basin may involve both the temporary and permanent removal of vegetation from the riparian corridor and the placement of rip-rap and/or concrete into the streambank and possibly into a portion of the streambed. Temporary impacts to Marsh Creek may also occur with construction of the outfall structures. (Potentially Significant Impact).

Construction of the outfall structure for the detention basin may involve both the temporary and permanent removal of vegetation from the riparian corridor and the placement of rip-rap and/or concrete into the streambank and possibly into a portion of the streambed. The worst-case disturbance is estimated at 2,400 square feet per outfall structure installation. Installation of this structure may involve construction of cofferdams and dewatering of the work area. These activities would constitute a temporary impact to Marsh Creek. Additionally, placement of fill or nearby construction can also temporarily impact water quality. Although special-status fish species are not expected to occupy this segment of Marsh Creek, impacts to water quality can affect fish occupying downstream reaches.

As required by the State Water Resources Control Board (SWRCB), projects that disturb one or more acres of soil must obtain a General Permit for Discharges of Storm Water Associated with Construction Activity. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling and excavation. In accordance with applicable federal and state water quality requirements, a comprehensive Storm Water Pollution Prevention Plan (SWPPP) would be prepared by the applicant and approved by the RWQCB. The Vineyards project would apply Best Management Practices (BMPs) such as site winterization, use of sediment traps, and hydroseeding of bare soils. These required procedures would ensure that no significant impacts from construction would occur.

The SWPPP would include site and project details, existing and proposed buildings locations, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project site. The SWPPP would also be required to list BMPs that the project proponent would use to protect storm water runoff and demonstrate the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and, if the site would discharge directly to a water body, a sediment monitoring plan is also required (SWRCB, 2003). Compliance with the legal requirements for construction projects and the preparation and implementation of a SWPPP and associated BMPs would minimize any impacts from construction due to erosion and runoff to a Less Than Significant Impact level.

While existing requirements will protect water quality, a temporary effect from removal of vegetation within the riparian corridor would occur - (see also impacts and mitigations for *Western Pond Turtle*, and *California Red-Legged Frog*). The following mitigation measure would reduce the potentially significant impact from loss of vegetation in the riparian corridor to a Less Than Significant Impact level.

Mitigation 3.8 P. Temporary impacts to Aquatic Habitat due to Construction of Outfall Structures: Confine construction and placement of fill to avoid the live stream channel, and during construction, prevent soil, construction debris, sand, tree debris, cement and concrete, petroleum products or other organic matter from entering the live stream channel. Restore vegetation after completion of construction in the riparian corridor of Marsh Creek (Less Than Significant Impact).

IMPACT 3.8-Q. Loss of Great Valley Mixed Riparian Forest (Direct Impact Tree Removal) – Vineyards Project: The construction of Fairview Avenue over Marsh Creek could result in the loss of up to 6 riparian trees, 4 valley oak and 2 large Fremont cottonwoods (total of 5,200 sq. ft. of riparian habitat) which would be considered a significant impact. (Significant Impact).

Walter Levison Consulting Arborist conducted a tree survey for the project site in January-February 2003 in which 71 trees, consisting mostly of natives, were identified on site. Based on the tree location map provided in the Levison tree survey report, 34 of these trees occur within annual grassland areas that are proposed for development (see Impact 3.8-U). Six of the remaining 37 trees occur in the portion of riparian habitat along Marsh Creek that may be impacted by the proposed extension of Fairview Avenue.

The proposed project will include construction of a vehicular access bridge over Marsh Creek (an extension of Fairview Road through the project site connecting to Marsh Creek Road; refer to Exhibit 2-5). Preliminary bridge plans show a clear-span structure, resulting in no impacts within the bed and banks of Marsh Creek. Therefore, the only direct impacts associated with the bridge would likely be the permanent and/or temporary removal of riparian vegetation. Levison (2003) identified 6 riparian trees at this location including 4 young valley oak and 2 large Fremont cottonwoods. Collectively, these trees comprise an area of 5,200 square feet of riparian habitat. Loss of this habitat would be considered a significant impact. Implementation of the following mitigation measure would reduce this impact to a Less Than Significant Impact level.

Mitigation 3.8-Q. Loss of Great Valley Mixed Riparian Forest – Vineyards Project. The loss of trees and shrubs within the riparian corridor of Marsh Creek will be mitigated by habitat enhancement at a ratio of 3:1 (i.e., three acres of habitat enhancement for each acre of impact). Areas situated directly adjacent to the creek's top-of-bank that currently support a mixture of non-native grasses and forbs will be used for enhancement via planting with native trees and shrubs.

A qualified biologist, in coordination with the City, will determine the location of potential mitigation sites along Marsh Creek. A detailed riparian habitat enhancement plan will be prepared in consultation with a qualified biologist. This plan shall provide for the following:

- ❖ Compensation for lost acreage at a ratio of 3:1 (mitigation to impacts).
- ❖ Enhancement of areas adjacent to Marsh Creek currently supporting relatively low-quality riparian habitat.

- ❖ Tree replacement consistent with the typical City of Brentwood tree replacement ratios (see Impact 3.8-U).
- ❖ Development of a monitoring plan to track habitat enhancement. At a minimum, this shall provide for 75% survival at year 3 of all shrubs and trees.

(Less Than Significant Impact).

IMPACT 3.8-R. Encroachment Upon the Great Valley Mixed Riparian Forest of Marsh Creek – Vineyards Project. Development of the Vineyards project has been designed to avoid impacts to the riparian corridor along Marsh Creek. However, some Vineyards-specific development may occur within the 100-foot setback for which significant impacts would result. (Potentially Significant Impact).

The project includes plans to mostly avoid indirect impacts to the riparian corridor of Marsh Creek by adopting a setback of 100 feet from the dripline of the riparian corridor (*i.e.*, outermost edge of riparian canopy). The size of the setback is based on the quality of Marsh Creek’s well-developed native riparian corridor, which provides quality habitat for wildlife, and its location outside of the Urban Services Area of the City of Brentwood. However, portions of the Village Center, the detention basin at Concord Avenue, the relocated ECCID irrigation canal, public utilities and the City of Brentwood’s planned trail/bike path along Marsh Creek will be constructed by the Vineyards project within this 100-foot setback.. The location of the trail/ bike path was previously adopted by the City of Brentwood and was not determined by the project applicant. In addition, while the setback area is largely undisturbed, the ECCID irrigation canal currently encroaches into this setback area. As the bike path/trail encroaches into the 100 foot setback along Marsh Creek, and as other Vineyards-specific development occurs within the 100-foot setback from the riparian canopy edge, the following mitigation measure would reduce the impact to a less-than-significant level.

Mitigation 3.8-R. Encroachment Upon the Great Valley Mixed Riparian Forest of Marsh Creek – Vineyards Project. If encroachment into the riparian setback is necessary, then a commensurate amount of riparian habitat along Marsh Creek will be enhanced to compensate for the loss of habitat caused by the encroachment. Part of the enhancement area may be the restoration of the area previously affected by the ECCID irrigation canal. The ratio of enhancement habitat will vary depending upon the extent of encroachment into the 100 foot setback buffer: encroachment into the first 50% shall be mitigated at a ratio of 1:1 (mitigation:impacts); encroachment into the remaining 50% shall be mitigated at a ratio of 2:1 (mitigation:impacts). This mitigation shall adhere to the stipulations outlined in the direct impacts section above. (Less Than Significant Impact).

IMPACT 3.8-S. Loss of Seasonal Wetland / Freshwater Marshes and Seeps – Vineyards Project: Construction of the proposed project would result in the loss of approximately 0.21 acres of seasonal wetlands, 0.93 acres of ponds/freshwater marsh habitats, and approximately 2/4 acres of intermittent drainage habitat on the project site. However, mitigation has been provided for the loss of 0.21 acre of seasonal wetlands and 0.80 acre of ponds/freshwater marsh in Mitigation Measures 3.8-A.1 and 3.8-D.1, respectively. Therefore, the net impact would be the loss of 0.13 acres of ponds/freshwater marsh and 2.4 acres of intermittent drainage. (Significant Impact).

Construction of the proposed project will result in the loss of approximately 1.14 acres of seasonal wetland/freshwater marsh habitats and approximately 2.4 acres of intermittent drainage habitat on the project site. (Although alkali meadow is a type of seasonal wetland, its unique flora and rarity required a separate impact and mitigation analysis - see *Loss of Alkali Meadow at 3.8-O*). The flora associated with the seasonal wetlands and freshwater marsh habitat on the project site is composed of native and non-native hydrophytic species. Mitigation for the loss of 0.21 acres of seasonal wetlands that provide vernal pool fair shrimp habitat and the loss of 0.80 acres of ponds that provide California tiger salamander breeding habitat is addressed under Mitigation Measures 3.8-A.1. and 3.8-D.1., respectively. The following mitigation measure will be required only for those impacts to aquatic features not already accounted for under Mitigation Measures 3.8-A.1 or 3.8-D.1. and will reduce the effects of impacts to a less-than-significant level (but see various species mitigation measures, below).

Mitigation 3.8-S.1. Loss of Seasonal Wetland / Freshwater Marshes and Seeps – Vineyards Project. (Preservation/Enhancement of Existing Wetlands or Creation of Additional Wetlands): The permanent loss of seasonal wetlands, freshwater marsh habitats will be mitigated by acquiring, preserving, and enhancing through management for the benefit of the species wetlands habitat at a ratio of 2:1 (mitigation:impacts). The mitigation will provide replacement of lost functions and values by creating wetlands within Contra Costa County or the adjacent counties, or by preserving and enhancing existing wetlands. If wetlands are created, then a detailed management and monitoring plan will be prepared in consultation with a qualified biologist, which will include plans for wetland creation, planting and maintenance plans, performance standards, and monitoring of constructed wetlands for a period of 5 years with the requirement that the site achieve 70% cover by wetland plant species by Year 5. Alternatively, the project applicant may mitigate for the loss of wetland habitat through the purchase of credits at a 2:1 ratio at an approved mitigation bank. (Less Than Significant Impact).

IMPACT 3.8-T. Impacts on Riparian Habitat or Other Sensitive Natural Communities – Annexation Sites. Riparian Habitat or other sensitive natural communities were not identified on the Annexation Sites in historic biological resources reports. However, until site-specific biological resource assessments are made, potential improvements to the John Marsh Home or development of a community college could result in adverse effects to these resources. (Potentially Significant Impact).

The Annexation Sites (particularly the John Marsh Home) exist in the vicinity of Marsh Creek and the Vineyards project site. No plans currently exist for improvements to the John Marsh Home or development of a community college. However, such plans may be developed by the State Department of Parks and Recreation (John Marsh Home) or the CCCCD (community college site). Improvements to the John Marsh Home are contemplated to include minimal disturbance (e.g., development of a potential parking lot) that may result in disturbance to riparian habitat or other sensitive natural communities. Development of a new community college and potential related facilities could result in changes to these resources.

If improvement plans are created for the John Marsh Home and development plans designed for the community college site, further site specific studies would be prepared for the sites and may reveal potential disturbance to riparian habitat or other sensitive natural communities.

Mitigation 3.8-T. Impacts on Riparian Habitat or Other Sensitive Natural Communities – Annexation Sites (Determination of Site-Specific Resources): Prior to the approval or conduct of grading, the California Department of Parks and the CCCCD shall conduct site-specific biological surveys to determine the presence of absence of riparian habitat or other sensitive natural communities on the sites.

If it is determined that special status plants occur on either site, then the State Department of Parks and/or the CCCCD (as relevant) shall require a qualified biologist to design mitigation for the site(s) similar to that of Mitigation Measure 3.8-O, 3.8-P, 3.8-R, or 3.8-S, as identified for the Vineyards project. (Less Than Significant Impact).

If it is determined that riparian habitat or other sensitive natural communities do not occur on one or both sites, then no further mitigation is required.

CONFLICTS WITH LOCAL POLICIES OR ORDINANCES PROTECTING BIOLOGICAL RESOURCES

Brentwood General Plan Policies Relative to Biological Resources

Brentwood General Plan policies relative to the protection of biological resources are primarily found in the Conservation and Open Space Element of the General Plan. This section of the EIR describes how the Vineyards project and the Annexation Sites have addressed most of the General Plan policies presented in the Environmental Setting section. The remaining relevant policy discussion is presented below:

Goal 7: Protect the Brentwood Planning Area’s natural resources.

Policy 7.2 – Preserve vegetation and associated wildlife habitat in the Brentwood Planning Area.

7.2.6 - Habitat Conservation Plan: Require a Habitat Conservation Plan to be prepared and adopted prior to any General Plan Amendments in the southwestern portion of the Planning Area (designated Special Planning Areas).

Discussion: The proposed Vineyards project is requesting that the City of Brentwood consider an amendment to this policy. The text amended requested is presented below (additional text indicated in underline):

7.2.6 - Habitat Conservation Plan: Require a Habitat Conservation Plan to be prepared and adopted prior to any General Plan Amendments in the southwestern portion of the Planning Area (designated Special Planning Areas). In lieu of an adopted HCP, site-specific mitigation for habitat effects is acceptable in SPA J. The timing to form an HCP is outside of the City’s control. Coordination with the East County HCP process is ongoing. The southwestern area of SPA J is now a state park. The permanent protection of this ownership will preserve the vegetation and associated wildlife habitat of the area.

This text amendment would be applicable to the Vineyards project and the Annexation Sites since both are within SPA J. City of Brentwood approval of this general plan amendment would result in Vineyards project and Annexation Sites’ consistency with City of Brentwood policies.

IMPACT 3.8-U. Loss of Blue Oak and Valley Oak Trees within Annual Grassland – Vineyards Project. Development of the Vineyards project would result in the loss of the majority of blue oak and valley oaks in the grasslands on the project site. These trees provide important habitat to many species of wildlife. Therefore, loss of these trees on the Vineyards project site is considered a significant impact. (Significant Impact).

The majority of the 34 trees within the grassland areas (20 blue oak and 14 valley oak) are mature, large-diameter oaks that have canopies commonly spanning 50-70 feet (Levison, 2003). These trees are scattered across a landscape dominated by annual grassland, and as such provide important habitat for many species of wildlife. Additionally, considerable acreages of oak trees are being lost from development in the San Francisco Bay Area, making preservation and/or replacement increasingly important.

Therefore, the loss of most or all of these oak trees on the project site is considered a significant impact. Implementation of the following mitigation measures will reduce this impact to a Less Than Significant Impact level (see also impacts and mitigations for *Tree Nesting Raptors*, *Swainson’s Hawk*, and *Special-Status Bats*, above).

Mitigation 3.8-U. Loss of Blue Oak and Valley Oak Trees within Annual Grassland (Replacement)– Vineyards Project. The removal of blue oak and valley oak trees from the project site shall be mitigated using the following ratios:

TABLE 3.8-1 TREE REPLACEMENT RATIOS	
Tree Diameter (inches at 2 feet off grade)	Replacement Quantity Required (for each tree removed) *
<6	1:1
6-11	2:1
12-17	3:1
18-24	4:1
>24	5:1
(*) or equivalent as determined by the City of Brentwood	

A qualified biologist will determine the locations for tree plantings within natural open space areas near the project site as well as on-site, and will create a tree replacement plan. The conceptual development plans include several open spaces that will be utilized for these plantings. This tree protection plan shall provide for the following:

- ❖ Replacement of removed trees at the ratios listed above. Plants shall be grown in containers as specified in the replacement plan.
- ❖ Locations of tree plantings within the development’s open spaces, or on appropriate location off site, with a complete analysis of the technical approach to installing the plantings.
- ❖ A detailed plan of the maintenance and monitoring of the plantings over a 5-year period.
- ❖ Plantings shall be in-kind, using locally collected plant materials.
- ❖ Planting, maintenance, and monitoring plans shall be prepared in consultation with a qualified biologist, landscape architect, or arborist.
- ❖ Plant success shall be monitored for a period of five years. At a minimum, survival should attain 70% at year 5.
- ❖ Monitoring reports shall be provided to the City of Brentwood.

(Less Than Significant Impact)

IMPACT 3.8-V. Loss of Blue Oak and Valley Oak Trees within Annual Grassland – (Annexation Sites). Improvement plans that may be created for the John Marsh Home and development plans may be designed for the community college site that result in the removal of blue oak or valley oak trees. The removal of these trees could result in a significant impact. (Potentially Significant Impact).

The Annexation Sites exist in the proximity to the Vineyards project site. According to LSA reports, the majority of the previous Cowell Ranch site "...supports a cover of non-native grassland.... Valley sink scrub, northern claypan vernal pool, and blue oak woodland habitats are scattered throughout the site as are numerous man-made stock ponds... Riparian and freshwater marsh habitat surrounds the reservoir and riparian woodland is found along Marsh Creek.

No plans currently exist for improvements to the John Marsh Home or development of a community college. However, such plans may be developed by the State Department of Parks and Recreation (John Marsh Home) or the CCCCDC (community college site). Improvements to the John Marsh Home are contemplated to include minimal ground disturbance (e.g., development of a potential parking lot) that may be able to avoid blue oak or valley oak trees.

Development of a new community college and potential related facilities may be able to avoid any onsite blue oak or valley oak trees. However, this cannot be determined until a site-specific tree survey is conducted and plans for a community college are designed.

If improvement plans are created for the John Marsh Home and development plans designed for the community college site, either or both projects could result in the removal of blue oak or valley oak trees which would result in a significant impact. (Potentially Significant Impact).

Mitigation 3.8-V. Loss of Blue Oak and Valley Oak Trees within Annual Grassland – (Annexation Sites): Prior to the approval or conduct of grading, the California Department of Parks and the CCCCDC shall conduct site-specific biological surveys to determine the presence or absence of blue oak and valley oak trees within the development area on the sites.

If it is determined that blue oak or valley oak trees occur within the development area on either site, and the blue oak or valley oak trees cannot be avoided, then the State Department of Parks and/or the CCCCDC (as relevant) shall require a qualified biologist to design mitigation for the site(s) similar to that of Mitigation Measure 3.8-U, as identified for the Vineyards project. (Less Than Significant Impact).

CONFLICTS WITH PROVISIONS OF ADOPTED HCP, NCCP, OR OTHER APPROVED LOCAL, REGIONAL, OR STATE HABITAT CONSERVATION PLAN

No Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP) has been adopted on either the Vineyards project site or the Annexation Sites. Therefore, this CEQA threshold is irrelevant to the Vineyards project site or the Annexation Sites.

CUMULATIVE IMPACTS REGARDING BIOLOGICAL RESOURCES

IMPACT 3.8-W. Cumulative Biological Resources Impacts – Vineyards Project and Annexation Sites. The Vineyards project and Annexation Sites could contribute to the cumulative loss of individuals of these special-status species, their habitat, and special-status natural communities resulting in potentially-significant cumulative impacts. The 2001 City of Brentwood General Plan Update EIR anticipated this level of development in SPA J, in the City’s Planning Area and in the region. The proposed Vineyards project and Annexation Sites are consistent with the General Plan Update and with the assumptions made in the EIR. The General Plan Update EIR found that with the imposition of mitigation measures, the impacts of General Plan Update buildout on loss of plant and wildlife habitat, special status species or habitat for such species; degradation of sensitive natural habitat communities; and loss of trees would be reduced to a level of less-than-significant. The proposed Vineyards project and Annexation Sites include all of the mitigation measures described in the General Plan Update EIR for these impacts. (Potentially Significant Impact).

The Brentwood area, like other communities in the Bay Area, is experiencing a great deal of growth. Many housing developments are already approved in the surrounding areas. Cumulatively, these projects could affect common and special-status plant and animal species with the reduction of available habitat and the potential loss of individuals. In addition, special-status natural communities such as wetlands, alkali grasslands, and riparian forest are present on site. As already discussed, vernal pool fairy shrimp (federally Threatened), California tiger salamander (proposed for federal listing as Threatened), Burrowing Owl (California Species of Special Concern), and several other special-status wildlife species are known to occur on site. The Vineyards project and potential development on the Annexation Sites could contribute to the cumulative loss of individuals of these special-status species, their habitat, and special-status natural communities resulting in **potentially-significant** cumulative impacts.

The 2001 City of Brentwood General Plan Update EIR anticipated this level of development in SPA J, in the City’s Planning Area and in the region. The proposed Vineyards project and Annexation Sites are consistent with the General Plan Update and with the assumptions made in the EIR.

The General Plan Update EIR found that with the imposition of mitigation measures, the impacts of General Plan Update buildout on loss of plant and wildlife habitat, special status species or habitat for such species; degradation of sensitive natural habitat communities; and loss of trees would be reduced to a level of less-than-significant. The proposed project includes all of the mitigation measures described in the General Plan Update EIR for these impacts. Accordingly, with mitigation, the proposed Vineyards project and Annexation Sites contribution to the cumulative impact on loss of plant and wildlife habitat, special status species or habitat for such species, degradation of sensitive natural habitat communities, and loss of trees is **Less Than Significant Impact**.

Finally, the General Plan Update EIR examined *regional* conversion of plant and animal habitat and concluded that buildout under the General Plan Update would constitute a cumulatively considerable impact on loss of habitat in the region. The General Plan Update EIR concluded that this impact would be mitigated to a level of less-than-significant by the following measure: “The City of Brentwood shall cooperate with surrounding jurisdictions and resource agencies (including CDFG,

USFWS, NMFS, etc.) in development of a habitat conservation plan (HCP). Elements within the HCP shall include the permanent preservation and enhancement of large, contiguous parcels of sensitive habitats (grasslands, chaparral, oak woodlands, wetlands, etc.) and protection and restoration of riparian and associated aquatic habitats. The HCP will allow for the coordinated conservation planning required for preservation of these species and their habitats.” The City remains committed to, and is participating in the development of, an HCP meeting these standards.

Mitigation 3.8-W. Cumulative Biological Resources Impacts – Vineyards Project and Annexation Sites. Implementation of mitigation measures listed above, including the mitigation measures identified in the 2001 General Plan Update EIR, would reduce the Vineyards project and Annexation Sites contributions to cumulative impacts to a less-than-significant level. (Less Than Significant Impact).

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3.9 GEOLOGY, SOILS, SEISMICITY, AND MINERAL RESOURCES

This analysis is based upon a geotechnical report prepared for the proposed Vineyards project by ENGEIO Incorporated (ENGEIO) and subsequently incorporated by RBF Consulting on behalf of the City of Brentwood. RBF also reviewed existing natural resources data in the City of Brentwood General Plan EIR and Cowell Ranch General Plan Amendment EIR. The ENGEIO report includes a review of previously published maps and reports regarding geological and geotechnical characteristics of the proposed project site and nearby properties, excavation and logging of exploratory test pits/trenches, laboratory testing of subsurface materials, and a summarization of the findings and design recommendations. The complete geotechnical report can be referenced at the City of Brentwood, Community Development Department, 104 Oak Street Brentwood, CA 94513.

3.9.1 ENVIRONMENTAL SETTING

Regional Setting

The City of Brentwood is located in the northeastern portion of Contra Costa County, California. Northern Contra Costa County is bound on the west by the San Francisco Bay, on the north by the Carquinez Strait and Suisun Bay, and on the east by the San Joaquin River. A major part of the county is situated within the Coast Range geomorphic province of Central California. The easternmost part of the county, including the area around the confluence of the Sacramento and San Joaquin Rivers, is situated within the Great Valley geomorphic province. The Coast Range geomorphic province is characterized by smooth rolling hills and fairly rugged mountains ranging in elevation from near sea level, along San Francisco Bay and the San Joaquin Valley, to an approximate elevation of 3,850 feet at Mount Diablo. Folds, thrusts, and faults form a series of nearly parallel, northwest-trending ridges made up mostly of Tertiary age (2 to 65 million years old) marine and non-marine shales, siltstones, sandstones, claystones, and conglomerates that strike roughly east-west and dip to the north. Bedrock is presumed to be the Franciscan Complex of Upper Jurassic to Cretaceous age (65 to 140 million year old) that lies along the east side of the San Andreas fault, located about 45.5 miles southwest of the project site. Valleys between the ridges, including the Great Valley, are filled with Quaternary alluvium comprised of alluvial fans and flood plains (Exhibit 3.9-1).

Local Setting – Vineyards Project

The proposed Vineyards project site ranges from fairly level to slightly sloping grasslands on the lower elevation of the property along the western edge, to moderate to steeply sloping hills on the southern and southwestern periphery of the property. The project site is characterized by open, rolling, grass-covered hills with scattered trees. The topography of the site ranges from essentially flat, located in the southern and eastern portion of the site, to a 1:1 (horizontal:vertical) slope in isolated areas in the northern and central portions of the project site. The site elevations range from approximately 145 feet above mean sea level (msl) at the southeastern valley floor to approximately 375 feet at the highest location.

The site is currently undeveloped and is used primarily as pastureland. On-site vegetation consists primarily of scattered trees and grasslands. The southwestern site boundary is located along Marsh

Creek and is downstream from the Marsh Creek Reservoir, although only a portion of Marsh Creek closest to Concord Avenue is actually within the project boundary. Drainage from the property is in an easterly direction to Marsh Creek. Marsh Creek starts at the Marsh Creek Reservoir, southeast of the project site, and flows northeast along the project sites eastern boundary towards the San Joaquin Delta.

Soil Stratigraphy and Bedrock

Artificial Fill

There are number of isolated pockets of artificial fill (Qaf) on the project site. The existing fills include created embankments for several stockponds, an abandoned graded pad in the central portion of the site, and fill associated with a roadway in the northern portion of the site. In general, the existing fills appear to have been derived from relocated on-site soils and bedrock materials. The existing fills appear to range in depth up to approximately about 10 to 12 feet. These fills are believed to be non-engineered and may be potentially highly variable and compressible (Exhibit 3.9-1).

Residual Soil

Residual natural soils, are located on ridgelines and in hillside areas. The residual soils cover areas in depth ranging from 1 to 5 feet thick. These soils were derived through the weathering of the underlying natural parent bedrock. The residual soils generally consist of dark brown silty and sandy clays. The residual soils have a low to high plasticity and are considered to be moderately to highly expansive depending on fluctuations in moisture content.

Colluvial Deposits

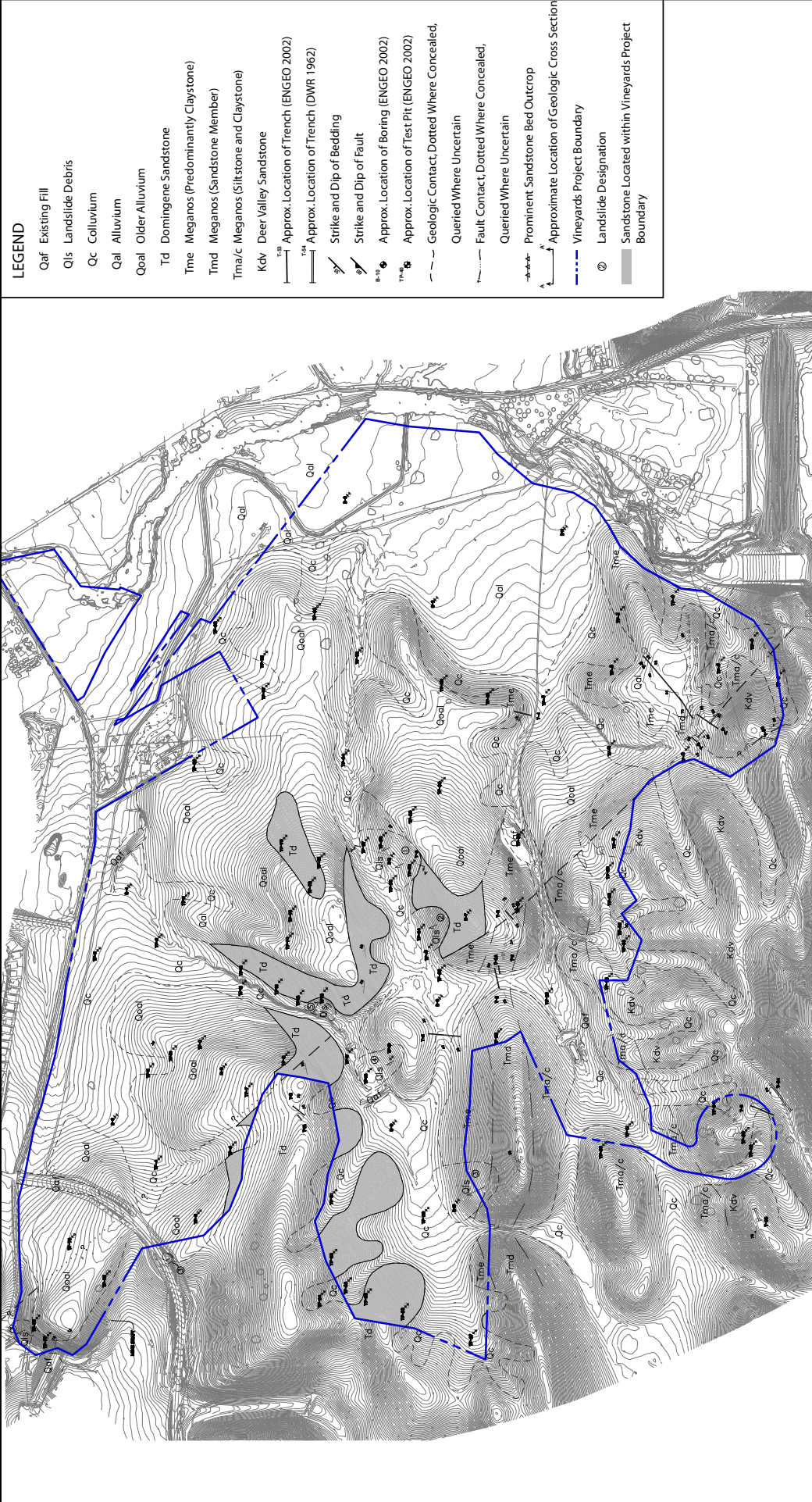
Colluvium (Qc) has been identified along the base of slopes throughout the Vineyards project site and in swales and valleys. Colluvium is the result of soil creep and transportation by erosion (refer to Exhibit 3.9-1). The typical thickness of the colluvial deposits varies from 3 to 15 feet. The colluvial soils have a low to high plasticity and, therefore, are considered highly to critically expansive when subjected to fluctuations in moisture content.

Alluvial Deposits

Pleistocene to Holocene-aged alluvium (Qal) is found in the low-lying, southeastern portion of the site (Exhibit 3.9-1). These deposits are primarily located adjacent to Marsh Creek. Alluvial deposits consist of unconsolidated sand, silt, gravel, and clay with varying amounts of weathered bedrock fragments. The alluvium typically ranges in depth up to about 20 to 25 feet thick. Localized alluvial deposits may be greater than 30 feet thick. The layers near the surface appear to be medium stiff to stiff, and at greater depth, these deposits increase in stiffness to hard. These deposits range from low to high plasticity and are considered moderately to critically expansive.

Landslide Deposits

Previous landslide mapping conducted in the project vicinity indicates five landslide areas on the Vineyards project site (ENGEO, 2003a). Based on the further geotechnical exploration conducted for the proposed Vineyards project, two additional landslides, beyond those previously mapped, were



Source: ENGEO (2003)



11/07/03, IN 35-10020

identified (refer to Exhibit 3.9-1). The landslide deposits consist of shallow, slump-type failures that predominately involve soils with some highly weathered bedrock material. The depth of movement is typically 4 to 16 feet below the ground surface. Two of the landslides have been recently active and exhibit steep head scarps with an absence of vegetation. Another landslide is located on a cut slope associated with previous grading for a Briones Valley Road on the northern portion of the Vineyards project site. The other three landslides identified are considered dormant and are characterized by subtle topographic irregularities that have been modified by erosion and vegetation overgrowth.

Older Alluvium

Older alluvial deposits (Qoal) are found on rounded spur ridges on the eastern portion of the Vineyards project site (refer to Exhibit 3.9-1). The older alluvial deposits encountered consist of gravelly sand and sandy gravels with some cobbles. The older alluvium is generally dense to very dense and is deposited uncomfortably on bedrock.

Bedrock

Bedrock at the Vineyards project site consists of the Tertiary-age Domengine and Meganos Formations and the Cretaceous age Deer Valley Sandstone (refer to Exhibit 3.9-1). The Deer Valley Sandstone (Kdv) is the oldest bedrock formation underlying the Vineyards project site and is located under the steeper hilly terrain in the southwestern portion of the site. The Deer Valley Sandstone varies from friable to strong, moderately fractured, and thinly to thickly bedded.

The Meganos formation is divided into three bedrock units, the lower member (Tma/c), the sandstone member (Tmd), and the upper member (Tme). The lower member was found to consist primarily of interbedded siltstone and claystone. The siltstone and claystone of the lower member is friable to weak, highly fractured, and varies from thinly to thickly bedded. The sandstone member of the Meganos formation forms a distinctive outcrop that has been offset by the Brentwood fault. The sandstone was found to vary from friable to strong and moderately to highly fractured. The upper member of the Meganos formation consists primarily of claystone with some interbedded siltstone and sandstone. The upper member was found to be friable to weak, highly fractured, and vary from thinly to thickly bedded. These claystone materials are considered to be highly to critically expansive.

Domengine sandstone (Td) is found in the northern and northeastern portions of the Vineyards project site. The domengine sandstone was found to be generally friable to moderately strong and thickly bedded. Some areas of sandstone and siltstone were encountered that were generally poorly cemented, friable, and highly fractured.

Soils

Soils on the Vineyards project site are mapped as Sorrento Silty Clay Loam (Sm) in the flat areas along Marsh Creek; Kimball Rocky Clay Loam, 2-9% slopes, (KaC) on the toes of the foothills; Kimball Rocky Clay Loam, 9-30% slopes, (KaE) on the lower slopes; Altamont Clay, 15-30% slopes, (AbE) on the mid slopes; a patch of Briones Loamy Sand, 30-50% slopes, (BdF) on the high west edge of the site; and a patch of Pescadero Clay Loam (Pb) in a small valley perched within the steep hills in the northwest edge of the Vineyards project site.

The Sorrento series of soils consist of very deep, well-drained soils that formed in alluvium mostly from sedimentary rocks. Sorrento soils are found on alluvial fans and stabilized floodplains and have slopes of 0 to 15 percent. They are well drained, have negligible to medium runoff, and moderate to moderately slow permeability depending upon dominant texture and amount of stratification in the lower part of the profile.

The Kimball series of soils consist of very deep, well-drained soils formed in alluvium from mixed sources. Kimball soils are on fan terraces and have slopes of 0 to 15 percent. They formed in alluvium from a variety of sources including sedimentary, metasedimentary, metabasic and granitic rock. They are well drained, with slow to medium runoff, and have very slow permeability.

The Altamont series of soils consist of deep, well-drained soils that formed in material weathered from fine-grained sandstone and shale. These soils are found on the project site on gently sloping to very steep uplands. They are formed in material weathered from fine-grained sandstone and shale. They are well drained, have medium to rapid runoff, and after cracks swell shut, the permeability is slow.

The Briones series consists of somewhat excessively drained, moderately deep soils over sandstone. Briones soils are found on uplands and on strongly sloping to steep terrain. These soils are somewhat excessively drained, have medium to rapid runoff and rapid permeability of the soil, but slow or very slow permeability in the sandstone.

The Pescadero series consists of very deep, poorly drained soils that formed in alluvium from sedimentary rocks. Pescadero soils are located in basins on the Vineyards project site. They are poorly drained or ponded in concave slopes; with very slow runoff and very slow permeability.

Faulting and Seismicity

Seismic sources near Brentwood include the Calaveras, Concord, Hayward, and Greenville/Marsh Creek faults. The Greenville/Marsh Creek and Calaveras faults are located about 6 miles and 16 miles, respectively, to the southwest of the Vineyards project site. The Concord fault is located about 14 miles to the west of the site. The Hayward fault is located approximately 27 miles to the west of the site (Exhibit 3.9-2).

The San Andreas Fault represents an active crustal plate boundary that is expected to produce the maximum probable earthquake for the region. The Coast Range Great Valley fault is also near the Vineyards project site, but is not fully understood with respect to its precise location and potential magnitude in the event of an earthquake. The maximum moment magnitude for the Great Valley fault is estimated to be approximately 6.7. Seismic activity of a moderate to large magnitude is anticipated to occur in the San Joaquin Valley in the future.

Three localized faults were identified during the preparation of the City of Brentwood's General Plan Update, 2001-2021. Two of these faults, the Antioch-Davis Fault and the Brentwood Fault, are located within the City's Planning Area as defined in the General Plan Update. One additional fault, the Midland Fault, is located within two miles of the planning area (Exhibit 3.9-2).

The Antioch-Davis Fault is a north-northwest trending fault that is approximately 18 miles in length. This fault is located in the low hills of the western portion of the City.



Source: RBF Consulting



10/24/03 JN 35-100230

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Regional Faulting

Exhibit 3.9-2

No evidence has been found indicating recent activity on the Antioch-Davis Fault.

The Brentwood fault trends in a north-south direction approximately two miles east of the Antioch-Davis fault and is on the proposed Vineyards project site. Portions of the fault traverse the proposed project site. The Brentwood fault has not experienced recent activity (i.e. within the past 70,000 years) and is not considered to be active (ENGEO, 2003a).

The Midland Fault is located approximately two miles east of the Planning Area defined in the City of Brentwood’s General Plan Update, 2001-2021. The fault is a north to northwest trending fault which extends from the Byron area, south of the proposed project site, north through Dixon and Capay Valley. There is no evidence of recent activity on the Midland Fault, though earthquakes that occurred in the Vacaville-Winters area are suspected to have originated on this fault.

To estimate future seismic events on a particular fault and the potential effect of these events, an estimate of the potential magnitude of an event must be determined. The Maximum Credible Earthquake (MCE) is an estimate of the potential magnitude of seismic events. It is based on the maximum event that appears possible based on the current understanding of a particular fault as well as the local geology. The Maximum Probable Earthquake (MPE) is also an estimate of potential magnitude of an earthquake. The MPE is based on the maximum event that may be reasonably expected to occur within the next 100 years and therefore are of lesser magnitude and have a greater likelihood of occurrence than MCE’s. The MCE and MPE for the faults believed to be active in the project vicinity are shown in Table 3.9-1. The Brentwood fault is not considered to be active and is therefore not included in the table.

**TABLE 3.9-1
MAXIMUM CREDIBLE AND PROBABLE EARTHQUAKES**

Fault Name	Approximate Distance to Vineyards Project Site (mi)	Maximum Credible Magnitude	Maximum Site Acceleration (g)²	Peak Site Intensity (MM¹)	Maximum Probable Magnitude	Maximum Site Acceleration (g)	Peak Site Intensity
Antioch	1 to 2	6.5	0.36	IX	5.75	0.28	VII to IX
Calaveras	16	7.0	0.13	VIII	6.5	0.10	VII
Concord	14	6.75	0.14	VIII	6.25	0.11	VII
Greenville	6	7.0	0.22	IX	5.25	0.09	VI
Hayward	27	7.5	0.10	VII	6.75	0.07	VI
Midland	2 to 3	7.0	0.40	IX	6.25	0.30	VII to IX
San Andreas	45	8.3	0.08	VII	7.5	0.05	VI

¹MM = Modified Mercalli Scale

²g = g is the acceleration of gravity 9.8 (m/s²) or the strength of the gravitational field. When there is an earthquake, the forces caused by the shaking can be measured as a percentage of gravity, or percent g.

Source: City of Brentwood, General Plan Update Draft EIR, June 2001

Mineral Resources

The northern and eastern portions of the Vineyards project site contain isolated outcrops of the Domengine Sandstone formation (Exhibit 3.9-1). This geologic unit is composed of thick-bedded quartz sandstone with minor interbedded mudstone. The sandstone is considered to be of high quality and is nearly pure quartz. The United State Geological Survey identifies the sand as a mineral resource.

Domengine Sandstone had been mined in the vicinity of the Vineyards project site from the 1920s to the mid-1940s and an estimated 96,000 net tons of the sand were removed. The sand was reportedly used by a small glass and foundry in the vicinity at the time. The mines closed in the late 1940s. No mines, or evidence of mining activities were identified within the proposed project boundaries. An abandoned mineshaft was identified northwest of the Vineyards project site, and is believed to have been used for coal mining in the late 1800s.

Local Setting-Annexation Sites

The 60-acre community college site and the 40-acre John Marsh Home site are located adjacent to the proposed Vineyards project site to the south and southeast. The two sites are essentially level, with no major rock outcroppings or geologic features observant onsite. A geologic report specific to these two sites has not yet been performed, though similar geologic conditions as the Vineyards project site can be anticipated. The Annexation Sites were included in the original Cowell Ranch Draft EIR (Contra Costa County, 1996).

The Annexation Sites primarily have a soil stratigraphy primary composed of alluvium and colluvium underlain by the Meganos bedrock formation. There is no evidence of any onsite active faults on either of the sites. The area of identified mineral resources, Domengine Sandstone, does not extend to the Annexation Sites. No other known mineral resources occur on the sites.

Relevant Goals Objectives and Policies

Brentwood General Plan, 2001-2021

The Brentwood General Plan, 2001-2021 contains a number of policies that direct the future and long-term growth of the City, including the Vineyard project site and the Annexation Sites. Other General Plan policies relevant to other environmental issues are incorporated into those sections and are not duplicated in the Geology, Soils, and Mineral Resources discussion. Among the policies relevant to the Vineyards project site and Annexation Sites with regard to geology, soils, Seismicity, and mineral resources discussion are the following:

Safety Element

- ❖ Goal 1, Policy 1.2-Land Movement: Protect life and property from potential landslides and earthquake hazards within the Planning Area.

Conservation/Open Space Element

- ❖ Goal 6, Policy 6.1-Mine Reuse: Ensure that areas of mineral resources can be mined while productive, and are ultimately reused for urbanization or open space.

3.9.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

The following thresholds of significance related to Geology, Soils, Seismicity, and Mineral Resources are derived from the criteria listed in *Appendix G of the State CEQA Guidelines*.

Impacts resulting from the project would be considered significant if the project would:

- ❖ Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - a. 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.
 - b. Strong seismic ground shaking.
 - c. Seismic-related ground failure, including liquefaction.
- ❖ Result in substantial soil erosion or the loss of topsoil.
- ❖ 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.
- ❖ 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.
- ❖ 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.
- ❖ Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

IMPACT 3.9-A. Adverse Effects From Rupture of a Known Fault - Vineyards Project: Small segments of the Brentwood fault have been identified on the proposed Vineyards project site. The Brentwood fault is a near-vertical fault, which has not experienced movement in more than 50,000 years and is therefore not considered to be active. The potential for fault rupture does exist through a seismic event occurring on the Brentwood fault, but is considered to be low, or through sympathetic movement resulting from an event on another fault in the region. Development on the Vineyards project site would have a less than significant potential to expose people and structures to risks associated with fault rupture. (Less Than Significant Impact).

The main north-south trending fault mapped on the site is referred to as the Brentwood Fault. Previous geologic studies conducted for the Los Vaqueros Dam by the Department of Water Resources (DWR), among others, found that the Brentwood fault has not experienced movement in at least 50,000 to 70,000 years (ENGEO, 2003a).

As noted above, fault segments have been mapped crossing the site by DWR. The exploration conducted by DWR in 1978 consisted of excavation of three trenches on the site, and three features

were interpreted as a fault (Exhibit 3.9-3). No conclusion was provided in the DWR report regarding the activity of the features encountered in the three trenches.

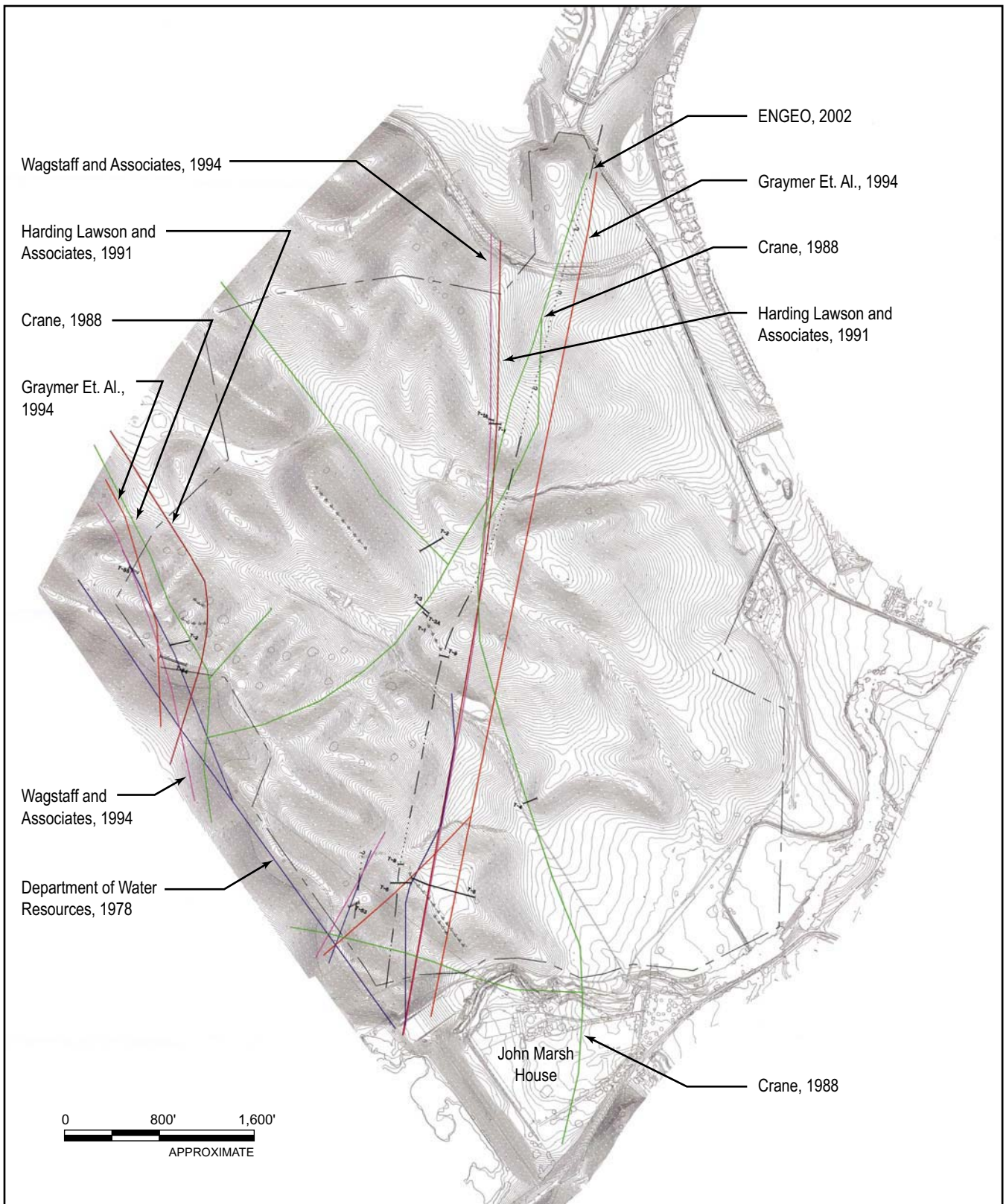
A preliminary geotechnical analysis was conducted for the proposed project. No indication of faulting was identified in eight of the eleven exploratory trenches. Evidence of faulting was identified in Trenches T-6, T-8, and T-9 (ENGEO, 2003a).

Within Trench T-6, a zone of sheared rock was identified. Trench T-8 was excavated approximately 160 feet to the north in order to expose the sheared rock feature identified in Trench T-6 in a location where a thicker and more developed soil profile could be examined. A fault feature was identified at a point of contact between two bedrock formations. Trench T-9 uncovered the offset sandstone member of the Meganos formation. A nearly vertical fault feature was observed between the sandstone member and the upper member of the Meganos formation.

A pedochronological report, a profile on the age of soils, was prepared and included in the geotechnical analysis. The report concluded that the oldest soil in the profile uncovered in Trench T-8 was 40,000 years old, which was consistent with the aforementioned DWR report. The findings of the pedochronological report support the conclusions of the DWR report that the Brentwood Fault has not experienced movement for 50,000 to 70,000 years and is therefore not considered active.

Based on the fault features identified during the excavations on the project site, the Brentwood Fault appears to be near-vertical. The likelihood for sympathetic movement on the fault is minimal, as the fault does not appear to intersect other known faults. The potential impacts of sympathetic movement on the Brentwood fault would be less than significant in that it is a near-vertical fault and any movement would be limited to that localized area. Major earthquakes, such as the 1989 Loma Prieta earthquake, are suspected of resulting in sympathetic movement on the Brentwood Fault of less than a couple of inches. The slight likelihood of sympathetic movement, the localized near-vertical nature of the Brentwood fault, and the suspected sympathetic movement of less than a couple of inches during past major events indicates that the potential for impact associated with sympathetic movement would be less than significant.

Mitigation 3.9-A. Adverse Effects from Rupture of a Known Fault - Vineyards Project: Development of the Vineyards project would have little potential for adverse effect from rupture of known faults and, therefore, no mitigation is required. (Less Than Significant Impact).



Source: ENGE0 (2003)

IMPACT 3.9-B. Adverse Effects From Rupture of a Known Fault - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Such improvements would be unlikely to substantially expose people to and structures to risk associated with fault rupture. Potential development of a community college, however, would have the potential to expose people and/or structures to risks associated with fault rupture. These potential effects would result in a significant impact. (Potentially Significant Impact).

Site-specific geologic explorations have yet to be performed on the John Marsh Home site or on the community college site. The sites were included in the Cowell Ranch DEIR, which did not find any evidence of faulting on the two sites (Contra Costa County, 1996). While no evidence of fault was identified on the two sites, a site-specific geotechnical evaluation should be performed prior to project construction on the community college site.

Construction on the John Marsh Home site is expected to be minimal, and few if any new structures would be constructed that would be susceptible to damage from fault rupture. The community college site is anticipated to experience a substantial amount of development in order to accommodate up to 5,000 students on the site. These structures could be susceptible to fault rupture. While no evidence is available that indicates the presence of localized faults on these sites, the potential for fault rupture should be evaluated in subsequent site-specific geotechnical investigations of the community college site.

The following mitigation measure would reduce impacts associated with fault rupture on the community college site to a less than significant level.

Mitigation 3.9-B.1 Adverse Effects From Rupture of a Known Fault – Annexation Sites: Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. These potential improvements would result in less than significant impacts which do not require mitigation. (Less Than Significant Impact).

Mitigation 3.9-B.2 Adverse Effects From Rupture of a Known Fault – Annexation Sites: Potential development of a community college could result in potentially significant impacts with relation to adverse effects from fault rupture. These impacts would be reduced to a less than significant level with application of the following mitigation measure(s):

- ❖ The Contra Costa Community College District will consult with a registered engineering geologist regarding the potential for fault rupture on the community college site. The location of any onsite faults shall be mapped and recommendations shall be made regarding the construction of any structures within 25 feet of any faults mapped onsite, if any. Any recommendations made by the engineering geologist shall be incorporated into the project's design and grading plans. (Less Than Significant Impact).

IMPACT 3.9-C. Strong Seismic Ground-Shaking - Vineyards Project: The potential exists that the Vineyards project site could be affected by ground shaking in the event of an earthquake in the Bay Area or San Joaquin Valley. Ground shaking could result in structural damage to on-site improvements (paving, utility lines, other property, etc.) and human injury. The potential for risks can be lessened through the application of seismic requirements of the Uniform Building Code. (Significant Impact).

The most significant geologic hazard affecting the Vineyards project site is the potential for strong ground shaking resulting from a seismic event of one of many active faults in the general Bay Area (refer to Table 3.9-1). The most likely sources of strong ground shaking in the region are considered to be the Greenville, Concord/Green Valley, Calaveras, Hayward and the San Andreas faults (Exhibit 3.9-2). Ground shaking could result in structural damage to other on-site improvements and can cause human injury. Ground shaking due to an earthquake generated on the Greenville, Concord/Green Valley, or Calaveras faults is anticipated to be strong (refer to Table 3.9-1).

Areas underlain by hard dry bedrock experience less severe occurrences of ground failure than areas underlain with compressible, water saturated, fine-grained alluvium. The proposed Vineyards project site is underlain with sandstone bedrock and its soils are primarily well-drained. As shown in Table 3.9-1, Maximum Probable Earthquake intensity in the area ranges approximately from V to VIII. Typical effects of shaking at intensities of V to VIII include the movement of heavy furniture, fallen plaster, damaged chimneys, fall of walls, and twisting and possible collapse of towers. Structural damage to older and poorly built structures can be significant; however, structural damage to well-built or newer structures designed according to seismic building standards is typically minimal.

The Maximum Credible Earthquake for the local Antioch-Davis and Midland Faults indicate the possibility for VIII to IX ground-shaking intensities. Effects at this intensity include masonry and foundation damage, broken underground pipes, small slides in sand or gravel banks or cracks in wet ground and steep slopes, people thrown to the ground, and broken branches falling from trees. The maximum credible earthquake is based on the maximum event that appears possible under the current understanding of the particular fault and the local geology. The history of an earthquake of this size occurring on any of the faults in the area is not known, and while believed to be possible the probability of such an event cannot be predicted with accuracy and is generally considered to be low.

The damage to property, on-site improvements (paving, utility lines, etc.) and the possibility of human injury resulting from a seismic event is potentially significant throughout the Bay Area region. As the proposed Vineyards project includes the development of new structures it will be required to adhere to the standards and regulations of the latest edition of the Uniform Building Code (UBC). The proposed project site is located in Zone 4 of the UBC. Zone 4 is the zone of highest seismic risk and therefore includes the most stringent structural design requirements to protect against the loss of life and property.

Adherence to the UBC's regulations pertaining to development in Seismic Zone 4 will reduce the potential for impact to the maximum extent feasible and to a less than significant level.

Mitigation 3.9-C. Strong Seismic Ground-Shaking - Vineyards Project: Prior to issuance of grading permits a qualified engineering geologist shall be retained to prepare a detailed geotechnical engineering design study for proposed building sites.

Any recommended design and engineering solutions to ensure sufficient foundation stability shall be incorporated into the project's design plans. Prior to the issuance of the first building permit, the Brentwood City Engineer shall verify that the project conforms to the seismic requirements stipulated in the Uniform Building Code (UBC) for Seismic Zone 4, the zone of highest seismic risk. (Less Than Significant Impact).

IMPACT 3.9-D. Strong Seismic Ground-Shaking - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Potential development of a community college, however, could expose people and/or structures to risks associated with strong seismic ground shaking. These potential effects would result in a significant impact. (Potentially Significant Impact).

The proposed annexation sites would experience a similar potential for strong seismic ground shaking as the Vineyards project (refer to discussion of Impact 3.9-C). The most significant geologic hazard affecting the site is the potential for strong ground shaking resulting from a seismic event of one of many active faults in the general Bay Area (refer to Table 3.9-1). The most likely sources of strong ground shaking in the region are considered to be the Greenville, Concord/Green Valley, Calaveras, Hayward and the San Andreas faults (Exhibit 3.9-2). Ground shaking could result in structural damage to other on-site improvements and can cause human injury. Ground shaking due to an earthquake generated on the Greenville, Concord/Green Valley, or Calaveras faults is anticipated to be strong (refer to Table 3.9-1).

The two annexation sites appear to be underlain primarily with alluvium, colluvium, and sandstone and mudstone materials. As opposed to areas underlain with hard bedrock, these materials are typically unconsolidated and structures built upon them are more susceptible to damage from strong seismic ground shaking. As shown in Table 3.9-1, Maximum Probable Earthquake intensity in the area ranges approximately from V to VIII. Typical effects of shaking at intensities of V to VIII include the movement of heavy furniture, fallen plaster, damaged chimneys, fall of walls, and twisting and possible collapse of towers. Structural damage to older and poorly built structures can be significant; however, structural damage to well-built or newer structures designed according to seismic building standards is typically minimal.

The damage to property, on-site improvements (paving, utility lines, etc.) and the possibility of human injury resulting from a seismic event is potentially significant throughout the Bay Area region. As the proposed community college annexation site is anticipated to be developed with new structures it will be required to adhere to the standards and regulations of the latest edition of the Uniform Building Code (UBC). Any new structural development on the John Marsh Home site would also be required to comply with the UBC. The proposed annexation sites are located in Zone 4 of the UBC. Zone 4 is the zone of highest seismic risk and therefore includes the most stringent structural design requirements to protect against the loss of life and property.

Adherence to the UBC's regulations pertaining to development in Seismic Zone 4 will reduce the potential for impact to the maximum extent feasible and to a less than significant level.

Mitigation 3.9-D.1 Strong Seismic Ground-Shaking – Annexation Sites: Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. In the event that a structure is proposed on the site, the following measure would minimize the potential that a significant impact would occur:

- ❖ The California Department of Parks and Recreation will retain a qualified engineering geologist to prepare a detailed geotechnical engineering design study for proposed building sites on the community college site. Any recommended design and engineering solutions to ensure sufficient foundation stability shall be incorporated into the project's design plans. (Less Than Significant Impact).

Mitigation 3.9-D.2. Strong Seismic Ground-Shaking – Annexation Sites: Potential development of a community college would result in potentially significant impacts related to strong seismic ground shaking. These impacts would be reduced to a less than significant level with application of the following mitigation measure(s):

- ❖ The Contra Costa Community College District will retain a qualified engineering geologist to prepare a detailed geotechnical engineering design study for proposed building sites on the community college site. Any recommended design and engineering solutions to ensure sufficient foundation stability shall be incorporated into the project's design plans. (Less Than Significant Impact).

IMPACT 3.9-E. Ground Failure - Vineyards Project: Due to the densities of the granular materials and the low groundwater levels encountered in the borings conducted on the Vineyards project site, the risk of liquefaction is considered to be low for the majority of the site. The potential for lateral spreading does exist on the hillside portion of the site. However, the potential would be negligible. Through adherence to the requirements of the UBC and strategies identified in detailed design studies this impact would be less than significant. (Less Than Significant Impact).

Liquefaction is one of the major causes of ground failure associated with seismic events and occurs when a solid (in this case soil) begins to act as a fluid during a seismic event. Liquefaction is caused by a rapid increase in liquid pore pressure brought about by ground shaking. Upon liquefying, the soils tend to lose their strength, which can result in lateral spreading, settlement, and localized flooding. The potential for liquefaction is dependent on a number of factors. Soil type is a significant factor in liquefaction potential. Uniformly graded, fine sands; tend to liquefy more easily than coarser materials. Other factors include specific characteristics regarding the seismic event that may induce liquefaction, such as the intensity and duration of ground shaking.

The potential for an earthquake with the intensity and duration characteristics capable of promoting liquefaction is a possibility with the Vineyards project. However, given the dense consistency of the

underlying sandstone bedrock, the cohesive nature of the upper clays, the potential for liquefaction at the site is considered low and a less than significant impact is anticipated.

Lateral spreading is ground failure within weaker soils materials, typically due to liquefaction, which causes the soil mass to move toward an open channel, or down a gentle slope. The granular materials on the site are of a density, and groundwater levels are at a depth, that the potential for liquefaction or related lateral spreading is considered to be low across the majority of the site. On the western portions of the site however, the potential for lateral spreading does exist.

Marsh Creek is located on the southeastern side of the proposed project and steep banks ranging up to 20 feet high are located along the southern most extent. Only a small portion of Marsh Creek is located within the project boundary. The potential for ground failure during a seismic event exists along these steep creek banks. No development is planned along these banks. The potential for ground failure along stream banks and due to liquefaction induced lateral spreading does exist during seismic events.

The UBC requires that site-specific analysis be prepared by a registered engineer specializing in geotechnical assessments for sites lying in potential liquefaction areas, and must meet the satisfaction of the City Engineer.

As required by Mitigation 3.9-C and the UBC, further site-specific geotechnical reports will be performed prior to the issuance of grading permits and the project will have to show its adherence to the requirements of the UBC. Implementation of standard engineering design strategies and adherence to the UBC would ensure a less than significant impact occurs.

Mitigation 3.9-E. Ground Failure - Vineyards Project: The Vineyards project would have a less than significant impact with regard to ground failure and, therefore, no mitigation is required. However, Mitigation 3.9-C will further reduce this already less than significant impact. (Less Than Significant Impact).

IMPACT 3.9-F. Ground Failure - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Such improvements are unlikely to result in adverse effects associated with liquefaction. Potential development of a community college, however, could potentially be susceptible to adverse effects associated with liquefaction. These potential effects could result in a significant impact. (Potentially Significant Impact).

The two sites being considered for annexation are primarily level and consist of soil and geologic conditions similar to those of the Vineyards project site.

The annexation sites were included in the Cowell Ranch DEIR which concluded that the potential for general ground failure does exist (Contra Costa County, 1996). As required by the UBC, further site-specific geotechnical reports will need to be performed prior to the issuance of grading permits and the project will have to show its adherence to the requirements of the UBC. The following mitigation

measures are included and will reduce any potential ground failure related impacts to a less than significant level.

Mitigation 3.9-F.1 Ground Failure – Annexation Sites: Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. These potential improvements would result in less than significant impacts that do not require mitigation. (Less Than Significant Impact).

Mitigation 3.9-F.2 Ground Failure – Annexation Sites: Potential development of a community college would result in potentially significant ground failure impacts. These impacts would be reduced to a less than significant level with application of the following mitigation measure(s):

- ❖ The Contra Costa Community College District will perform site-specific detailed design studies to be prepared by a licensed engineering geologist for any development on the community college site. All recommendations the engineering geologist shall be incorporated in the proposed construction plan. The engineering geologist services shall be retained throughout site grading and s/he shall be contacted prior to grading and when onsite conditions necessitate deviations from the approved plan. The engineering geologist shall conduct assessments on a regular basis during site grading and initial construction phases. (Less Than Significant Impact).

IMPACT 3.9-G. Soil Erosion & Loss of Topsoil - Vineyards Project: None of the soils on which the proposed Vineyards project would be developed are highly erodible. However, given the extent of site grading, the potential exists for soil erosion and the loss of topsoil to occur on the Vineyards project. Compliance with existing City and State Water Resources Control Board requirements would prevent a significant impact from occurring. (Less Than Significant Impact).

The proposed Vineyards project would take place on slopes of varying degree and is located adjacent to Marsh Creek. Erosion and the loss of topsoil from this site is a potential concern due to the loose unconsolidated soils found on the site and the slopes of varying degrees. The City of Brentwood has regulations in place that directly address such concerns.

None of the soils on which the project would take place are highly erodible. The two major soil series on the property, the Sorrento series and the Kimball series, both are moderately well-drained with a slow to medium runoff, indicating a relatively low erosion potential.

The Briones series soils are potentially substantially erodible due to the impermeable sandstone layer underlying the permeable sand. This sandy soil has a rapid permeability. As water moves the permeable soil and then reaches the impermeable sandstone layer, the potential for erosion exists. This soil only occurs over a small patch on the high west edge of the site. No improvements are planned in this area that would increase the potential for erosion of this soil series.

The City of Brentwood Municipal Code, Chapter 15.52, requires the preparation of an erosion and sediment control plan. The project would be subject to the regulations described in Chapter 15.52 of the Brentwood Municipal Code. The intent of this chapter of the Municipal Code is to minimize the adverse effects of grading, cut and fill operations, water runoff and soil erosion to the maximum extent possible. The section requires detailed design studies and soils and engineering reports to be prepared prior to issuance of grading permits by a licensed geotechnical engineer. The information from these reports and the proposed grading plan is used to develop a plan that will limit erosion and accommodate drainage in such a fashion that it minimizes adverse impacts onsite and offsite. The plans are reviewed by the City Engineer who makes recommendations and requests modifications to the plans as needed. Adherence to these regulations would reduce the potential for soil erosion and the loss of topsoil to a less than significant level.

The Brentwood City Engineer will review all plans prepared for the project for its conformance to the Municipal Code prior to the approval of grading permits. The Municipal Code requires the preparation of erosion and sediment control plans to ensure that no substantial soil erosion or loss of topsoil related impacts occur. Furthermore, the Municipal Code requires the applicant to provide security for the performance of the work described and delineated on the approved grading plan and interim and final erosion and sediment control plans.

Erosion associated with construction activities can be mitigated to a less than significant level through the implementation of Best Management Practices and compliance with the Storm Water Pollution Prevention Program (SWPPP) as required by the State Water Resources Control Board (SWRCB). Projects that disturb 1 or more acres of soil to obtain a Construction General Permit under the General Permit for Discharges of Storm Water Associated with Construction Activity. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation.

The Construction General Permit requires the development and implementation of a SWPPP. The SWPPP shows site and project details, existing and proposed buildings, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP also must list Best Management Practices (BMPs) that the project proponent will use to protect storm water runoff and demonstrate the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and, if the site discharges directly to a water body, a sediment monitoring plan is also required (California State Water Resources Control Board, 2003). The preparation of a SWPPP and compliance with the Construction General permit will reduce the potential for water erosion during construction activities to a less than significant level.

Recommended Mitigation 3.9-G. Soil Erosion and Loss of Topsoil - Vineyards Project: Compliance with existing laws and requirements of the City of Brentwood and the State Water Resources Control Board would prevent a significant impact from occurring and, therefore, no mitigation is necessary. To further prevent this less than significant impact it is recommended that the City include preparation of erosion and sediment control plans in its monitoring program for the Vineyards project. (Less Than Significant Impact).

IMPACT 3.9-H. Soil Erosion & Loss of Topsoil - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. Development of a potential community college would result in less than significant impacts to soil erosion and loss of topsoil because the site is relatively flat and the project would be required to receive approval of a Construction General Permit, which is intended to limit construction related erosion impacts. Improvements to the John Marsh Home would result in less than significant impacts to soil erosion and loss of topsoil because minimal improvements would be performed with the potential to result in significant erosion impacts. (Less Than Significant Impact).

The potential for soil erosion and the loss of topsoil is considered to be relatively minor on the two sites being considered for annexation. Both sites are relatively flat and are expected to have similar geologic and soil conditions as the proposed Vineyards project site.

Also, any development over one acre in size would require approval of a Construction General Permit. Please refer to the discussion of Impact 3.9-G for descriptions of this requirement. Adherence to existing regulations pertaining to erosion and sediment control would reduce potential impact of the anticipated development on the two sites being considered for annexation to a less than significant level.

Mitigation 3.9-H. Soil Erosion and Loss of Topsoil – Annexation Sites: Potential development of a community college or improvements to the John Marsh Home would result in less than significant soil erosion and loss of topsoil impacts and, therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.9-I. Instability of Geologic Unit and/or Soil - Vineyards Project: A number of active and inactive landslides have been identified on the proposed Vineyards project site. There is a relatively high likelihood that these landslide areas could experience future instability, however application of standard engineering practices and adherence to the UBC would sufficiently stabilize these areas and ensure that a less than significant impact occurs. (Less Than Significant Impact).

Seven distinct landslides zones were identified on the proposed Vineyards project site through a review of historic maps and an on-site geotechnical exploration. These zones are shown on Exhibit 3.9-1 and are labeled 1 through 7 for reference. Two of the landslides, Landslides 5 and 6, have been recently active and exhibit steep head scarps with an absence of vegetation. Landslide 6 is located on a cut slope associated with previous grading for a roadway on the northern portion of the site. Landslides 1 through 4 and Landslide 7 are considered dormant and are characterized by subtle topographic irregularities that have been modified by erosion and vegetation overgrowth. All of these landslide areas have a relatively high likelihood of becoming unstable in the future. Instability could occur as a result of heavy rains, improper loading, or a seismic event.

Landslides could potentially be triggered by a substantial seismic event occurring on one of the many faults in the region. The risk of this hazard is greatest in the late winter when the ground water levels are the highest and the hillside soils are saturated. The hazard of seismically-induced landslides to the proposed structures can best be avoided by properly engineered stabilization of landslides and/or creation of sufficient buffers between the colluvial deposits and developments areas.

Potential areas of soil creep have been identified on the steeper slopes with clayey soils. Soil creep is the downslope movement of soil that occurs with the annual cycle of wetting and drying under the influence of gravity.

Potential impacts such as ground failure and erosion associated with these landslides zones can be mitigated through the effective use of engineering techniques such as removing landslide material and replacing with engineered fill material and slope stabilization. Such effective measures would be identified and recommended as a part of the detailed site-specific design studies that are to be completed by an engineering geologist as required by the UBC and Mitigation 3.9-C.

Mitigation 3.9-I. Instability of Geologic Unit and/or Soil - Vineyards Project: Compliance with existing laws would prevent a significant impact from occurring and, therefore, no further mitigation is necessary. Implementation of Mitigation Measure 3.9-C would further prevent this less than significant impact. (Less Than Significant Impact).

IMPACT 3.9-J. Instability of Geologic Unit and/or Soil - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. Potential impacts associated with geologic unit and/or soil instability on the community college site is expected to be less than significant as the site is relatively flat, no areas of instable geologic and/or soil units have been identified, and existing mitigation will further reduce the level of impact. Improvements to the John Marsh Home would result in less than significant impacts to geologic and/or soil instability because no areas of instable geologic and/or soil units have been identified. (Less Than Significant Impact).

The Cowell Ranch DEIR did not identify any areas of geologic or soil instability on the two sites being considered for annexation (Contra Costa County, 1996).

Minimal improvements are proposed on the John Marsh Home site that would have the potential to result in significant impacts due to geologic and/or soil instability. The community college site is relatively flat with no identified areas of geologic and/or soil instability and, therefore, a less than significant impact would result. Furthermore, previously described mitigation would sufficiently identify any previously unidentified unstable areas and further reduce the already less than significant impact impacts.

Mitigation 3.9-J. Instability of Geologic Unit and/or Soil - Annexation Sites: Potential development of a community college or improvements to the John Marsh Home would result in less than significant impacts with regard to geologic and/or soil unit instability and, therefore, no mitigation is required. However, Mitigation Measures 3.9-B.2 and 3.9-D.2 would further reduce this already less than significant impact through preparation of site-specific geotechnical studies. (Less Than Significant Impact).

IMPACT 3.9-K. Expansive Soil - Vineyards Project: Expansive soils have been identified on the proposed Vineyards project site and are known to occur throughout the region in areas with clayey soils and clastone bedrock. (Significant Impact).

Clayey and clastone materials can be found throughout the Vineyards project site and are common throughout the region (Contra Costa County, 1996). The materials on the Vineyards project site are considered to be moderately to highly expansive (ENGEO, 2003). Expansive soils and bedrock can cause heaving and cracking of slabs-on-grade, pavements, and foundations.

Building damage, such as damage to foundations, cracking, due to expansive soils can be minimized by selectively placing expansive materials in the lower portions of deeper fill areas or outside of the areas of structural improvements, reducing their swell potential by proper moisture conditioning and compaction of fill materials, and supporting Homes on structurally reinforced mats and/or post-tensioned mats designed to resist expansion/compression movements.

The UBC requires site-specific design studies to be completed prior to the approval of building plans. These studies will identify the precise location of expansive soils and incorporate design criteria to avoid or minimize to the maximum extent feasible potential damage caused by expansive soils. Incorporation of the following mitigation measure would adequately address and potential impacts associated with expansive soils and reduce them to an less than significant level.

Mitigation 3.9-K. Expansive Soil - Vineyards Project: As required by the UBC, site-specific detailed design studies shall be prepared by a licensed engineering geologist and reviewed by the Brentwood City Engineer prior to the issuance of grading permits for any development on the Vineyards at Marsh Creek project site. The evaluation of expansive soils and the formulation and implementation of design criteria for foundation and pavement design in expansive soils shall be addressed. Such criteria shall include one or more of the following:

- ❖ Minimize the use of expansive soil as fill within upper portions of building pads.
- ❖ Compact expansive soil fill wetter than optimum moisture content.
- ❖ Extend shallow foundations below the zone of seasonal moisture fluctuations.
- ❖ Use deep foundations such as drilled piers, or stiff grid or mat foundations that can move without cracking, in areas of expansive soil or rock.
- ❖ Control site drainage to minimize seasonal wetting and drying of expansive materials.
- ❖ Provide non-expansive fill layers under foundations, slabs, and pavements.
- ❖ Treat expansive soils with lime or cement in the area of improvements to reduce the effects of expansive materials.

All recommendations of the City Engineer, and the engineering geologist, shall be incorporated in the proposed construction plan, prior to approval of the grading permit. The engineering geologist services shall be retained throughout site grading and s/he shall be contacted prior to grading and when onsite conditions necessitate

deviations from the approved plan. The engineering geologist shall conduct assessments on a regular basis during site grading and initial construction phases. (Less Than Significant Impact).

IMPACT 3.9-L. Expansive Soil - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. Such improvements would not result in significant impacts associated with expansive soils. Potential development of a community college, however, would possibly result in development on expansive soils. These potential effects would result in a significant impact. (Potentially Significant Impact).

A soil evaluation specific to the sites being considered for annexation has not yet been performed, but the probability of expansive soils was identified in the Cowell Ranch DEIR. Expansive soils were also identified on the Vineyards project site. As the two annexation sites are located adjacent to the Vineyards project, and are expected to have similar geologic and soil conditions, it is anticipated that expansive soils will be encountered on the annexation sites.

Building damage, such as damage to foundations, cracking, due to expansive soils can be minimized by selectively placing expansive materials in the lower portions of deeper fill areas or outside of the areas of structural improvements, reducing their swell potential by proper moisture conditioning and compaction of fill materials, and supporting buildings on structurally reinforced mats and/or post-tensioned mats designed to resist expansion/compression movements.

A substantial amount of construction is anticipated on the community college site that would have the potential to occur on expansive soils. As minimal construction is planned for the John Marsh Home site, the impact on this site would be less than significant.

Construction on the community college site would require site-specific geotechnical and soil evaluations and compliance with the UBC codes for development on expansive soils. The following mitigation measure shall be applied to reduce potential impacts associated with development on expansive soils that may potentially be located on the community college site to a less than significant level.

Mitigation 3.9-L.1 Expansive Soil – Annexation Sites: Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the Home. These potential improvements would result in less than significant impacts that do not require mitigation. (Less Than Significant Impact).

Mitigation 3.9-L.2 Expansive Soil – Annexation Sites: Potential development of a community college would result in potentially significant impacts associated with risk to people and/or structures from development on expansive soils. These impacts would be reduced to a less than significant level with application of the following mitigation measure(s):

The Contra Costa Community College District shall perform site-specific detailed design studies that shall be prepared by a licensed engineering geologist as required by the UBC. The evaluation of expansive soils and the formulation and implementation of design criteria for foundation and pavement design in expansive soils shall be addressed. Such criteria shall include one or more of the following:

- ❖ Minimize the use of expansive soil as fills within upper portions of building pads.
- ❖ Compact expansive soil fill wetter than optimum moisture content.
- ❖ Extend shallow foundations below the zone of seasonal moisture fluctuations.
- ❖ Use deep foundations such as drilled piers, or stiff grid or mat foundations that can move without cracking, in areas of expansive soil or rock.
- ❖ Control site drainage to minimize seasonal wetting and drying of expansive materials.
- ❖ Provide non-expansive fill layers under foundations, slabs, and pavements.
- ❖ Treat expansive soils with lime or cement in the area of improvements to reduce the effects of expansive materials.

All recommendations of the engineering geologist, shall be incorporated in the proposed construction plan. The engineering geologist services shall be retained throughout site grading and s/he shall be contacted prior to grading and when onsite conditions necessitate deviations from the approved plan. The engineering geologist shall conduct assessments on a regular basis during site grading and initial construction phases. (Less Than Significant Impact).

IMPACT 3.9-M. Loss of Known Mineral Resources - Vineyards Project: The proposed Vineyards project would take place on a site containing Domengine Sandstone, which is identified by Contra Costa County and the United States Geological Survey as a significant mineral resource. Development of the proposed project would preclude the extraction of this Domengine Sandstone. (Significant Impact).

The Vineyards project site contains approximately 30 acres distinct outcroppings of Domengine Sandstone (Td). The resource area is located as outcrops in the northern and eastern portions of the proposed Vineyards project site (refer to Exhibit 3.9-1). The majority of the Domengine Sandstone deposit is located off of the Vineyards project site to the northwest and southeast. This material has been identified by Contra Costa County as a significant mineral resource. (Contra Costa County, 1996).

The Contra Costa County General Plan identifies the geological deposit of Domengine Sandstone as being, "...a valuable commodity for the continued economic vitality of Contra Costa County, as it is the sole deposit of this material in the State of California, and an important resource nationally."¹ (Contra Costa County, 1996). Domengine Sandstone is used by Pacific Gas and Electric (PG&E) as trench backfill and is also a primary ingredient in the manufacture of heat-resistant glass used in the

¹ Contra Costa County, 1996, General Plan, p. 8-52.

national space program. The Contra Costa County General Plan has policies directed at the protection of the sandstone area.

The State Surface Mining and Reclamation Act of 1975 (SMARA) was adopted to ensure the continued availability of mineral resources in the state and to ensure that mined lands are reclaimed to a suitable use. SMARA requires lead agency land use decisions involving areas designated as being of statewide significance to be made in accordance with the lead agency's mineral resource management policies and to "...consider the importance of the mineral values of the state and nation as a whole" when balancing mineral values against alternative land uses.

The Brentwood General Plan and General Plan EIR acknowledged the significance of the Domengine Sandstone. The General Plan EIR identified that with implementation of the General Plan that mineral resource area, including the Domengine Sandstone area, would be converted to urban uses. In order to mitigate the impact, Policy 6.1 of the Conservation/Open Space Element was identified and included in the General Plan. Policy 6.1 states that the City should ensure that areas of mineral resources can be mined while productive, and are ultimately reused for urbanization or open space.

As shown on Exhibit 3.9-1 the areas of Domengine Sandstone (Td) on the Vineyards project site are limited to distinct "islands" that occur on areas of steep slopes that would not be suitable for construction. The nature of the location of this resource on steep slopes necessitates that these areas be avoided for construction. Furthermore, this resource occurs in the areas of Vineyards project that would be maintained as open space and/or planted with vineyards. The vast majority of the resource occurs outside of the proposed development area (Exhibit 3.9-1).

Nevertheless, it can be expected that some grading in areas containing this resource would occur. To the extent feasible, this resource should be mined and utilized onsite for filling of utility trenches and other areas where appropriate as recommended by Policy 6.1 of the Conservation/Open Space Element of the Brentwood General Plan. Furthermore, as these sites would not be developed upon and would be available for future mining, those purchasing properties within the areas adjacent to the resource should be notified of the potential for future mining activities to occur.

Mitigation 3.9-M.1. Mineral Resources - Vineyards Project: During site grading, the project proponent shall utilize to the extent feasible, onsite Domengine Sandstone resources in utility trenches and other areas as appropriate. (Less Than Significant Impact).

Mitigation 3.9-M.2. Mineral Resources - Vineyards Project: The project proponent shall ensure that properties located adjacent to undisturbed mineral resources include a statement in the deed informing the prospective buyer of the potential of future mining operations occurring in the vicinity. (Less Than Significant Impact).

IMPACT 3.9-N. Mineral Resources - Annexation Sites: The area of Domengine Sandstone does not extend to the John Marsh Home site or the community college site. No mineral resources have been identified on the two sites being considered for annexation, therefore a less than significant impact is anticipated. (Less Than Significant Impact).

The north and northeastern portions of the proposed Vineyards project site is underlain by an area of Domengine Sandstone (Td). This material has been identified by Contra Costa County as a significant mineral resource. (Contra Costa County, 1996). This resource does not extend to the John Marsh Home site or the community college site (Refer to Exhibit 3.9-1).

A less than significant mineral resource impact is anticipated on the two sites proposed for annexation.

Mitigation 3.9-N. Mineral Resources - Annexation Sites: No mineral resources have been identified on the John Marsh Home site or the community college site and, therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.9-O. Conflict with Applicable Land Use Plans - Vineyards Project: The proposed Vineyards project would be consistent with the goals and policies related to geology, soils, and seismicity contained in the Brentwood General Plan and would not impede or impair the implementation of said policies. (No Impact).

The proposed Vineyards project would not result in any conflicts with the goals and policies contained in the City of Brentwood's General Plan, 2001-2021, related to geology, soils, and seismicity.

The Vineyards project site has not been deemed a geologically hazardous area in the Brentwood General Plan and would therefore not be affected by Policy 1.2.2 of the Safety Element of the General Plan. The proposed project would result in the development of high-occupancy structures, but the site exhibits a geologic sensitivity similar to most of the Bay Area.

Through the implementation of standard design criteria that will be identified and implemented through site-specific geotechnical analysis, the proposed project would have taken the necessary measures to protect life and property for the potential adverse effects of earthquakes and landslides.

The proposed Vineyards project would either not be subject to, or would comply with, all of the applicable General Plan policies related to geology, soils, and seismicity. The mitigation measures required in this EIR would further ensure that the Vineyards project is consistent with the applicable land use plans as they relate to geology, soils, and seismicity.

Mitigation 3.9-O. Conflict with Applicable Land Use Plans - Vineyards Project: The proposed project would not result in any inconsistencies with the goals and policies of the applicable land use plans as they relate to geology, soils, and seismicity and, therefore, no mitigation is required. (No Impact).

IMPACT 3.9-P. Conflict with Applicable Land Use Plans - Annexation Sites: The proposed Annexation Sites would be consistent with the goals and policies related to geology, soils, and seismicity contained in the Brentwood General Plan and would not impede or impair the implementation of said policies. (No Impact).

The anticipated development on the John Marsh Home site would be the minimal actions necessary to accommodate public use on the site. No grading activities are expected that would result in a conflict with the General Plan or Municipal Code.

The development that is anticipated on the community college site would be more intensive. Approximately 30 acres of the 60-acre site would be developed with community college facilities to serve up to 5,000 students. The community college site is relatively level with little erosion or landslide potential.

Through the preparation of site-specific geotechnical studies and adherence to UBC regulations, development on the Annexation Sites would comply with the applicable land plans in relation to geology, soils, and seismicity.

Mitigation 3.9-P. Conflict with Applicable Land Use Plans - Annexation Sites: The proposed annexation sites would not result in any inconsistencies with the goals and policies of the applicable land use plan as they relate to geology, soils, and seismicity, and therefore, no mitigation is required. (No Impact).

IMPACT 3.9-Q. Cumulative Impacts – Loss of Known Mineral Resources: The Vineyards project could preclude the extraction of Domengine Sandstone and could therefore contribute to cumulative impacts on this resource. (Potentially Significant Cumulative Impact).

The Vineyards project site contains distinct outcroppings of Domengine Sandstone (Td); development of the project may therefore preclude the extraction of this resource. With mitigation (see Mitigations 3.9-M.1 and 3.9-M.2), this impact would be less than significant. The area containing Domengine Sandstone does not extend to the Annexation Sites, so the potential future development of these sites would not contribute to any significant impact on this resource.

As shown in Exhibit 3.9-1, the areas of Domengine Sandstone within the Vineyards project site are relatively small; the majority of this resource in the immediate project vicinity is located outside the project site boundary to the northwest in the state parklands area. Since this area adjacent to the project site where Domengine Sandstone is located is outside the Urban Limit Line, no urban development is anticipated in the area that would contribute to cumulative impacts to this resource. As a result, development of the Vineyards project, with the implementation of project-specific mitigation would not contribute to any significant cumulative impacts regarding the potential loss of Domengine Sandstone.

Mitigation 3.9-Q. Cumulative Impacts – Loss of Known Mineral Resources: The project-specific mitigation (see Mitigation Measures 3.9-M.1 and 3.9-M.2) would reduce the Vineyard project's contribution to any cumulative impacts on Domengine Sandstone to a less than significant level. (Less Than Significant Cumulative Impact).

IMPACT 3.9-R. Cumulative Impacts – Other Geological Impacts: Other geological impacts analyzed in this EIR (e.g., potential rupture of a known fault, seismic effects, ground failure, geologic instability, etc.) are site-specific, not cumulative, effects. (Less Than Significant Cumulative Impact).

Impacts such as potential rupture of a known fault, seismic effects, ground failure, geologic instability, etc., involve potential exposure *of the project* to geological hazards, and do not involve impacts *resulting from the project* on the environment. Therefore, these effects do not contribute to cumulative impacts. Similarly, impacts in terms of soil erosion and loss of top soil are specific to the development area and also do not contribute to cumulative impacts.

The EIR for the City of Brentwood’s General Plan Update confirms this fact and explains that impacts relating to soils and geologic hazards are site specific and, therefore, cumulative effects would not be anticipated. In any case, this EIR contains project-specific mitigation to reduce any contribution to geologic impacts to a less than significant level.

Mitigation 3.9-R. Cumulative Impacts – Other Geological Impacts: Impacts relating to soils and geologic hazards are site-specific in nature, therefore, no cumulative impacts are anticipated. The EIR contains project-specific mitigation in any event to reduce any contribution to geologic impacts to a less than significant level. (Less Than Significant Cumulative Impact).

3.10 HYDROLOGY, DRAINAGE, AND WATER QUALITY

This analysis is based upon a hydrologic report prepared for the proposed Vineyards project by Balance Hydrologics, Inc. and subsequently peer-reviewed by RBF Consulting on behalf of the City of Brentwood. RBF also reviewed existing hydrologic data in the City of Brentwood General Plan EIR and the Cowell Ranch General Plan Amendment EIR. The Balance Hydrologics report includes a description of the hydrologic setting of the Vineyards project site, stormwater management objectives, hydrologic analyses, and a description of Best Management Practices. The complete hydrologic report is included as Appendix G.

3.10.1 ENVIRONMENTAL SETTING

Existing Conditions

Regional Setting

The Eastern Contra Costa region has a Mediterranean climate that is characterized by cool, wet winters and hot, dry summers. The lower elevation areas in eastern Contra Costa County lie within the rain shadow of the coastal mountain ranges that remove much of the moisture from incoming storm systems. The City of Brentwood has a mean annual rainfall of 12.4 inches and is located in one of the driest regions in the county and one of the driest regions in the State of California outside of the deserts. Mean seasonal rainfall maps prepared by Contra Costa County indicate that the mean seasonal rainfall at the site is on the order of 13 inches per year. This is markedly lower than areas in the western portion of the county that receive more than twice this annual average. Although the average rainfall is quite low, the area does experience the wide range in annual precipitation that accompany drought years and wet years such as those related to the El Niño Southern Oscillation (ENSO). For example, the minimum annual precipitation recorded at the Antioch Pumping Plant was 5.6 inches (in water year 1976) and the maximum was 27.1 inches (in water year 1983). Annual temperature patterns are typical of interior areas of the state, although somewhat tempered by cooling breezes originating in the San Francisco Bay system. Evaporation rates are quite high in summer. In fact, evaporation rates exceed rainfall in all but the wettest winter months. Mean annual pan evaporation is likely on the order of 71 inches, or over five times mean annual precipitation, based on the record from the Antioch Pumping Plant (1955-1978).

Marsh Creek Reservoir lies just upstream of the southeast corner of the Vineyards project site. The reservoir was built in 1963 by the Contra Costa County Flood Control and Water Conservation District (CCCFCWCD) as a major flood control facility to address persistent flooding issues along the creek. Marsh Creek has a watershed area of roughly 52 square miles at the reservoir, which has a calculated storage capacity of 3535 acre-feet at the emergency spillway crest elevation of 191.8 feet. The primary outlet for the reservoir is a 54-inch box culvert that has a discharge capacity of approximately 653 cubic feet per second (cfs) when the emergency spillway begins to flow. According to CCCFCWCD the reservoir was intended to control flood events up to a 50-year design storm. Modeling of 100-year flood events (up to the 100-year, 24-hour storm) shows that there is enough storage volume to contain such storms without flow over the emergency spillway, under the assumption that the reservoir is empty at the start of the storm. However, the low capacity of the

primary reservoir outlet, coupled with the large reservoir volume, creates a situation where the reservoir does not completely empty if successive storms arrive within several days of each other. Therefore, the CCCFCWCD has modeled the reservoir for longer duration events and estimates the 100-year discharge at the reservoir to be on the order of 1,500 cfs, increasing to 1,600 cfs at Concord Avenue (Balance Hydrologics, 2003).

Marsh Creek Reservoir marks the transition between the intermediate and lower geomorphic zones on the creek. Therefore, the reach down to Concord Avenue is the first segment of the stream located on the broad alluvial fan that stretches north toward the Delta from the hills. The reach length from the southeast project boundary to Concord Avenue is approximately 5,850 feet (1.1 miles). The creek drops from an elevation of 127 feet to 101 feet over this distance (Balance Hydrologics, 2003).

Vineyards Project

The proposed Vineyards project site is located in the southeast portion of the City of Brentwood's Planning Area. The project site is located on Concord Avenue, south of Balfour Road, and north of Marsh Creek Road (refer to Exhibit 2-1). Segment 3 of the planned State Route 4 (SR4) Bypass will border the project site along the north and east in the same area where Concord Avenue is located currently.

The Vineyards project site is approximately 481 acres and is bordered by the existing Summerset Senior Residential Community to the north and east, and by the remaining lands of Cowell Ranch to the west and south, which are now designated as a California State Park. The State Park property includes undeveloped land and the historic John Marsh Home and the Marsh Creek Reservoir.

The Vineyards project site is currently undeveloped and ranching (i.e. cattle grazing) is currently the primary land use. The site consists of large expanses of open grassland with widely scattered oak trees. A well-defined riparian corridor exists along Marsh Creek, forming the eastern boundary of the Vineyards project site. The riparian corridor is primarily limited to the banks of Marsh Creek and typically does not extend 100 feet beyond the banks. The existing hydrology of the site reflects the open grassland cover type (Balance Hydrologics, 2003).

Drainage from the Vineyards project site flows directly to Marsh Creek, which immediately bounds the project site on the east and southeast. At its mouth at the big break in the Sacramento-San Joaquin Delta, Marsh Creek is the second largest watershed in Contra Costa County.

All surface runoff from the Vineyards project site currently drains directly to Marsh Creek at a few locations on its left bank as it flows downstream to Concord Avenue. The upland portions of these watersheds are characterized by clearly defined flowpaths, although most of the drainage network is best described as consisting of first- and second-order swales without well-defined channels. Well-defined channels are only apparent in areas where slopes are steepest. There are a number of stock ponds in the upland areas, reflecting the existing ranching activities. Several of the stock pond berms have been breached and have contributed to local areas of erosion. The overall existing drainage area of the project encompasses roughly 604 acres (0.95 square miles), with 281 acres in the northern sub-watershed and 322 acres in the southern sub-watershed.

The existing drainage area is divided north-south by a protruding ridge that extends nearly to Marsh Creek approximately 2,000 feet south of Concord Avenue. Therefore the vast majority of surface runoff enters the creek at two points: roughly 500 feet downstream of the John Marsh Home site and immediately upstream of Concord Avenue.

The drainage area lies entirely within County Drainage Area 107 (DA107), established by the CCCFCWCD in the Marsh Creek Regional Drainage Plan of March 1990. DA 107 encompasses the watershed of Marsh Creek from the reservoir, downstream to the confluence with Deer Creek. The County Drainage Areas were established in anticipation of on-going flood control needs and development in the Brentwood area, and to establish a system of fees to generate needed funding for flood control improvements.

Annexation Sites

The proposed Annexation Sites are located to the south and southwest of the Vineyards project site and total approximately 100 acres.

The community college site is currently vacant and encompasses approximately 60 acres of land, with a potential for 30 of the acres to be developed, southwest of the Vineyards project site. The community college site is primarily flat grassland. The John Marsh Home site is located south of the Vineyards project site and is approximately 40 acres in size. The John Marsh Home site is also primarily level grassland and is the site of the historic John Marsh Home and surrounding compound. This site is bordered along its northern boundary by Marsh Creek.

The Annexation Sites are located within the Marsh Creek watershed. The John Marsh Home site is located within Drainage Area 108 and the community college site is located within Drainage Area 52.

Storm Water

Existing Regulatory Framework

Surface water quality is regulated to protect aquatic life and human health according to the provisions of the Federal Clean Water Act (and associated federal regulations) and the California Porter-Cologne Water Quality Control Act, referred to respectively as the Federal and State Acts. The State Act established the nine Regional Water Quality Control Boards (Regional Boards) and the State Water Resources Control Board (State Board). In California, the discharge permitting provisions of the Federal Act have been delegated by U.S. EPA to the State and Regional Boards. The project sites are located within the jurisdiction of the Central Valley Regional Water Quality Control Board (CVRWQCB, or RWQCB). The RWQCB has a Water Quality Control Plan (Basin Plan) for basins within its jurisdiction that identifies beneficial uses of surface waters, establishes numeric and narrative objectives for protection of beneficial uses, and sets forth policies to guide the implementation of programs to attain the objectives.

To comply with these regulations, Contra Costa County, nineteen (19) of its incorporated cities, including the City of Brentwood and the Contra Costa County Flood Control & Water Conservation District, joined together to form the Contra Costa Clean Water Program. The Contra Costa Clean Water Program obtained a Joint Municipal National Pollution Discharge Elimination System

(NPDES) Permit from the RWQCB on September 1993 and January 1994, respectively. The permits, issued for a five-year period (1993-1999), contain a comprehensive plan to reduce the discharge of pollutants to the "maximum extent practicable" (MEP). These permits were re-issued on July 21, 1999 (San Francisco Bay Regional Water Quality Control Board Permit) and June 16, 2000 (Central Valley Regional Water Quality Control Board Permit).

The RWQCB has adopted a separate NPDES General Permit for stormwater discharge associated with construction activity on sites greater than 1 acre in size. NPDES permit conformance requires that a project applicant file a Notice of Intent (NOI) to comply with the terms of the General Permit to Discharge Storm Water Associated with Construction Activity and submit a Storm Water Pollution Prevention Plan (SWPPP) to the CVRWQCB. A SWPPP contains a listing and implementation plan for use of storm water Best Management Practices (BMPs) that would be implemented during construction of the project to minimize erosion and sedimentation. The SWPPP also requires the implementation of monitoring programs, post development BMPs, and water-quality management strategies.

Existing Storm Water Quality

The vacant property of the proposed Vineyards project site and Annexation Sites consists of grasslands with widely scattered oak trees. The expected pollutants in the existing condition storm water runoff from the project site are suspended solids from naturally scoured areas within the grasslands. Runoff could potentially include trash, nutrients, suspended solids, bacteria, oil and grease, and household hazardous wastes associated with residential and commercial development downstream of the Vineyards project site and the Annexation Sites. Currently, the Vineyards project site, which is undeveloped, does not contain any structural Best Management Practices (BMPs). It is likely that most of the potential pollutants are removed through natural conveyance, except perhaps nutrients and coliform contributed through the presence of cattle. Conveying flows overland through vegetation affords some infiltration and biofiltration of runoff and thus, removal of potential pollutants. A drawback to conveying flows overland is that it tends to create erosion problems, thereby increasing suspended solids in the runoff.

Pollutants found in urban runoff can be classified by the type of land use activity that generates them. General classifications include agricultural, landscape, transportation, construction, and disposal. Typical sources of these pollutants include agricultural practices of fertilizer and pesticide application, outdoor washing activities and generation of soaps that flow into storm drains and surface waters, deposition of contaminants released into the atmosphere (either direct deposition or washed from the atmosphere during rain events), soils that become exposed during construction activities, pollutants from automobiles, and improper disposal or contaminant spills.

The most common categories of storm water pollutants are described below. Many of these pollutants are found in urban runoff and would likely be generated by the construction and operation of the proposed Vineyards project residential and commercial uses. Runoff pollutants are washed into storm drains and are then conveyed to receiving waters downstream. Receiving waters can assimilate a limited quantity of various constituent elements without becoming "polluted". However, there are thresholds beyond which the measured amount becomes an undesirable impact resulting in a pollutant.

Surface water quality of Marsh Creek is typical of grazed and open space watersheds in the region and is degraded primarily by non-point source pollutants such as pesticides, herbicides, fertilizers, and exposed soils that wash into the drainage system. Existing underground pipelines traversing the Vineyards project site have also been identified as leaking petroleum products at a level that exceeded reporting limits.

Common Categories of Storm Water Pollutants

Sediment - Sediment is made up of tiny soil particles that are washed or blown into surface waters. It is typically the major pollutant by volume in surface water. The fine sediment particles also act as a vehicle to transport other pollutants including nutrients, trace metals, and hydrocarbons. Construction is the largest source of sediment for urban areas under development.

Nutrients - Nutrients are a major concern for surface water quality, especially phosphorous and nitrogen, which can cause algal blooms and excessive vegetative growth. Of the two, phosphorus is usually the limiting nutrient that controls the growth of algae in lakes or other non-moving water bodies. The orthophosphorous form of phosphorus is a readily available nutrient for plant growth. The ammonium form of nitrogen can also have severe effects on surface water quality. As a general rule of thumb, nutrient export is greatest from development sites with large impervious areas. Common measures for nutrients are total nitrogen, organic nitrogen, total Kjeldahl nitrogen (TKN), nitrate, ammonia, total phosphate, and total organic carbon (TOC).

Trace Metals - Trace metals are primarily of concern because of their toxic effects on aquatic life and their potential to contaminate drinking water supplies. The most common trace metals found in urban runoff are lead, zinc, and copper.

Oil and Grease - Oil and grease contain a wide variety of hydrocarbons some of which could be toxic to aquatic life in low concentrations. These materials initially float on water and create the familiar rainbow-colored film. Hydrocarbons have a strong affinity for sediment and quickly become absorbed to it. The major source of hydrocarbons in urban runoff is through leakage of crankcase oil and other lubricating agents from automobiles onto impervious surfaces. Hydrocarbon levels are highest in the runoff from parking lots, roads, and service stations.

Total Dissolved Solids (TDS) - TDS concentration is determined by evaporation of a filtered sample to obtain residue whose weight is divided by the sample volume. The TDS of natural waters varies widely. There are several reasons why TDS is an important indicator of water quality. Dissolved solids affect the ionic bonding strength related to other pollutants such as metals in the water. TDS are also a major determinant of aquatic habitat. TDS affects saturation concentration of dissolved oxygen and influences the ability of a water body to assimilate wastes.

pH - The pH of water is the negative log, base 10, of the hydrogen ion (H^+) activity. A pH of 7 is neutral; a pH greater than 7 indicates alkaline water; a pH less than 7 represents acidic water. In natural water, carbon dioxide reactions are some of the most important in establishing pH. The pH at any one time is an indication of the balance of chemical equilibrium in water and affects the availability of certain chemicals or nutrients in water for uptake by plants. The pH of water directly affects fish and other aquatic life. Generally, pH values less than 4.8 and greater than 9.2 are considered to be toxic.

Alkalinity - Alkalinity is the opposite of acidity, representing the capacity of water to neutralize acid. Alkalinity is also linked to pH and is caused by the presence of carbonate, bicarbonate, and hydroxide, which are formed when carbon dioxide is dissolved. A high alkalinity is associated with a high pH and excessive solids. Most streams have alkalinities less than 200 milligrams per liter (mg/l) and ranges of alkalinity of 100-200mg/l seem to support well-diversified aquatic life.

Specific Conductance - The specific conductivity of water, or its ability to conduct an electric current, is related to the total dissolved ionic solids. Long term monitoring of project waters can indicate a relationship between specific conductivity and TDS. The measurement of conductance is quick and inexpensive and can be used to approximate TDS. Specific conductivities in excess of 2000 µohms/cm indicate a TDS level too high for most freshwater fish.

Turbidity - The clarity of water is an important indicator of water quality that relates to the alkalinity of photosynthetic light to penetrate. Turbidity is an indicator of the property of water that causes light to become scattered or absorbed. Suspended clays and other organic particles cause turbidity. It can be used as an indicator of certain water quality constituents such as predicting the sediment concentrations.

Nitrogen (N) - Sources of nitrogen in storm water result from the additions of organic matter to water bodies or chemical additions. Ammonia and nitrate are important nutrients for the growth of algae and other plants. Excessive nitrogen can lead to eutrophication since nitrification consumes dissolved oxygen in the water. Nitrogen occurs in many forms. Organic Nitrogen breaks down into ammonia, which eventually becomes oxidized to nitrate-nitrogen, a form available for plants. High concentrations of nitrate-nitrogen (N/N) in water can stimulate growth of algae and other aquatic plants, but if phosphorus (P) is present, only about 0.30 mg/l of nitrate-nitrogen is needed for algal blooms. Some fish life can be negatively affected when nitrate-nitrogen exceeds 4.2 mg/l. There are a number of ways to measure the various forms of aquatic nitrogen. Typical measurements of nitrogen include Kjeldahl nitrogen (organic nitrogen plus ammonia); ammonia; nitrite plus nitrate; nitrite; and nitrogen in plants. The principal water quality criteria for nitrogen focus on nitrate and ammonia.

Phosphorus (P) - Phosphorus is an important component of organic matter. In many water bodies, phosphorus is the limiting nutrient that prevents additional biological activity from occurring. The origin of this constituent in urban storm water discharge is generally from fertilizers and other industrial products. Orthophosphate is soluble and is considered to be the only biologically available form of phosphorus. Since phosphorus strongly associates with solid particles and is a significant part of organic material, sediments influence concentration in water and are an important component of the phosphorus cycle in streams. The primary methods of measurement include detecting orthophosphate and total phosphorus.

Drainage Facilities

Existing Surface Drainage

The main natural drainage channel in Brentwood is Marsh Creek, which originates in the foothills of Mt. Diablo and flows north through the City to the San Joaquin River. Marsh Creek serves as the dividing boundary between the Vineyards project site and the John Marsh Home Annexation site. A number of tributaries flow into Marsh Creek from the west, including Sand Creek and Deer Creek.

All surface runoff from the Vineyards project site currently drains to Marsh Creek at a few locations on its left bank as it flows downstream to Concord Avenue. The upland portions of these watersheds are characterized by clearly defined flowpaths, although most of the drainage network is best described as consisting of first-and second-order swales without well-defined channels. Well-defined channels are only apparent where the slopes are the steepest.

Reservoirs and Detention Facilities

There are a number of flood control facilities that affect and control drainage throughout the City of Brentwood and in the vicinity of the Vineyards project and Annexation Sites including the Marsh Creek Reservoir, Dry Creek Reservoir, the Dry Creek Detention Basin, and the Kellogg Creek Side Channel (City of Brentwood, 2001b). As mentioned previously, the Vineyards project sitedrains into Marsh Creek, just below the Marsh Creek reservoir.

The Marsh Creek Reservoir is located on an approximately 100-acre parcel south of the Vineyards project and Annexation Sites. The Marsh Creek Reservoir is the largest flood control facility within the City of Brentwood. It was originally built to accommodate a 50-year storm event, but due to siltation, the capacity of the reservoir has been reduced. A 54-inch box culvert serves as the primary outlet for the reservoir. The flow spills over an emergency spillway when the water level reaches an elevation of 191.8 feet. Both the culvert and the emergency spillway discharge directly into the existing Marsh Creek channel. When the water level reaches an elevation of 193 feet, a secondary auxiliary storage area located east of Marsh Creek Road begins to fill. Return flow from this area drains through an 18-inch pipe that traverses the dam and discharges back into the creek channel near the emergency spillway outlet (City of Brentwood, 2001b).

The Marsh Creek channel was widened for about 7,000 lineal feet between Sand Creek and Dry Creek as part of the Marsh Creek Regional Drainage Plan to moderate outflows so that combined discharges would not exceed the capacity of Marsh Creek downstream from it's junction with Sand Creek.

Municipal Drainage Facilities

The City of Brentwood's existing municipal storm drainage facilities consist of four main trunk storm drain lines with many smaller laterals draining into them. The four main trunk lines convey drainage to outfalls in Marsh Creek. Subdivisions located adjacent to Marsh Creek drain directly into the main channel.

A trunk drain with a 72-inch outfall is located at the Highway 4 Bridge across Marsh Creek. This trunk drain serves as the Highway 4 Storm Drain. The storm drain originates in downtown Brentwood and runs along the west side of Highway 4. A second outfall is located in the Union Pacific Railroad bridge across Marsh Creek and is at the end of an open channel running southeast and parallel to the railroad. The Pippo Avenue Storm Drain, originating at the intersection of Hickory Drive and Balfour Road, drain into this open channel. A third outfall is a 48-inch metal pipe located just upstream from where Sand Creek joins Marsh Creek. This outfall serves the Griffith Lane Storm Drain that runs down Griffith Lane to the area near McClarren Road. The fourth outfall is located at the Dainty Avenue bridge across Marsh Creek and serves the Dainty Avenue Storm Drain that originates within the subdivision located at Dainty Avenue and Minnesota Avenue. The pipe runs north along Minnesota Avenue and east along Dainty Avenue (City of Brentwood, 2001b).

The CCCFCWCD is the agency responsible for the maintenance and operation of major flood control facilities and stream channels throughout the eastern area of Contra Costa County. The CCCFCWCD has instituted a number of programs to meet the demand for improved local flood control in the Brentwood area, including the preparation of the Marsh Creek Regional Drainage Plan (1990). County Drainage Areas 104 through 108 were established to plan, fund, and construct regional drainage improvements identified in the Marsh Creek Regional Drainage Plan, that would alleviate flooding within the Marsh Creek Watershed. Drainage improvements identified in the plan include three new detention basins on Sand Creek, Dry Creek, and Deer Creek, as well as the widening Marsh Creek for approximately 7,000 lineal feet between Sand Creek and Dry Creek. (City of Brentwood, 2001).

The proposed Vineyards project site lies entirely within County Drainage Area 107 (DA107), established by the CCCFCWCD in the Marsh Creek Regional Drainage Plan of March 1990. According to the CCCFCWCD, the John Marsh Home site lies within Drainage Area 108 and the community college site lies within an unformed drainage area, Drainage Area 52.

Drainage Area Fees

The intent of the CCCFCWCD Drainage Area Planning Program is to identify current and future drainage needs and to make development fee funds available to support the cost of necessary drainage improvements. The drainage fee program establishes a mechanism by which new development would be able to mitigate the cumulative effects of increased runoff. The drainage fee schedule is structured in such a way that buildout according to Contra Costa County's adopted General Plan land use policies would enable funding of all proposed regional drainage facilities.

The CCCFCWCD County established Drainage Areas 104 through 108 to plan, fund, and construct regional drainage improvements identified in the Marsh Creek Regional Drainage Plan, that would alleviate flooding within the Marsh Creek Watershed. Drainage fees are administered by the County and are based upon the amount of impervious surfaces within any project area (City of Brentwood, 2001).

When the Marsh Creek Regional Drainage Plan as first developed, the Vineyards project site, the Annexation Sites, and the current State Park lands of Cowell Ranch were located within the City of Brentwood's Sphere of Influence (SOI) and the County Urban Limit Line (ULL) and were therefore assumed to be available for future development as described in the Brentwood General Plan and the County General Plan. The County has since revised the ULL; much of the area, including the State Park lands, is now outside of the ULL and is consequently no longer available for urban development. As a result, less development will occur within the Marsh Creek Watershed than was anticipated during the development of the Marsh Creek Regional Drainage Plan.

Flooding Conditions

Overtopping of the banks of Marsh Creek has been the primary cause of flooding in the Brentwood area. The main reason for the flooding has been insufficient capacity in the channels to accommodate new development along the banks of Marsh Creek. One of the major factors contributing to flooding in the past was over-topping of Marsh Creek due to construction at Dainty Avenue and Central

Avenue. Widening of the Creek and Dainty Bridge necessary to prevent over-topping was completed in 2000. The proposed Vineyards project site and Annexation Sites are located outside of the 100-year floodplain boundary mapped by the Federal Emergency Management Agency (FEMA) (City of Brentwood, 2001b). In the vicinity of the proposed sites, 100-year flood zones are located south of Marsh Creek Reservoir, at stretches along Briones Valley Creek, Deer Creek, and Sand Creek passing through the central portion of the City, and portions of Marsh Creek north of Concord Avenue (Exhibit 3.10-1).

Groundwater

The City's current primary water source is groundwater that is supplied by wells throughout the City, which provide approximately 67% of the City's demands. The remaining demands are met through surface water agreement with the East Contra Costa County Irrigation District (ECCID) and treated under contract at the Contra Costa Water District's (CCWD) Randoll-Bold Water Treatment Plant (WTP).

East Contra Costa County has four groundwater regions. The City of Brentwood occupies the largest region in which groundwater occurs in material deposited by streams originating from the coastal mountain ranges to the west. The aquifer materials capable of yielding quantities of water suitable for municipal and/or agricultural purposes extend to depths of 600 feet.

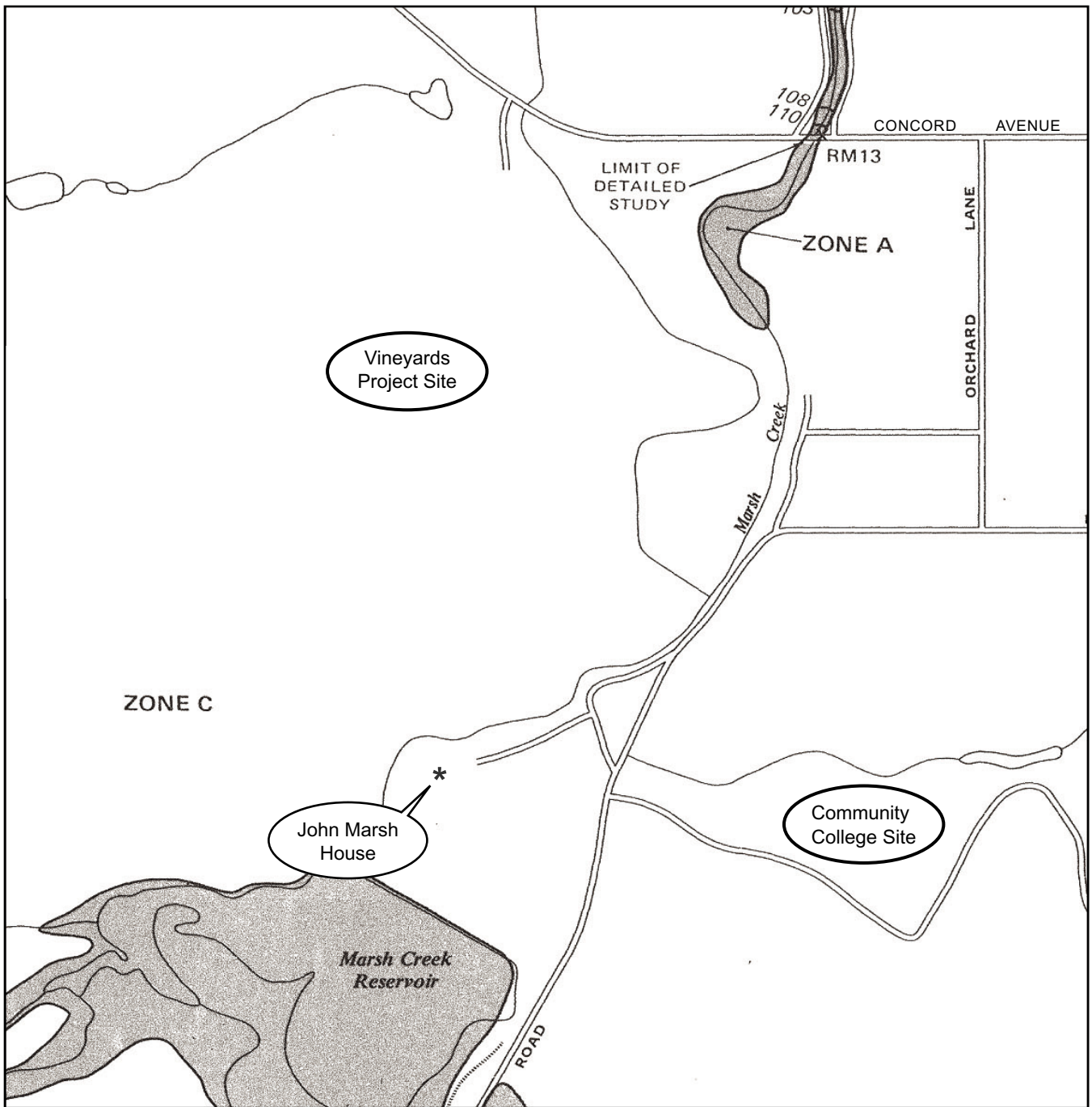
Groundwater in the City of Brentwood is extracted by seven active wells, which have a combined capacity of 6.8 million gallons per day (mgd), or 4,750 gallons per minute (gpm). The seven wells provide approximately 67% of the City's water demand (City of Brentwood, 2000). Water pumped from the wells is treated with chlorination at the wellheads and pumped to the distribution system directly.

The static water level readings from the City's well fields are deeper than the water levels reflected in most of the East Contra Costa County groundwater region. Readings from the City's wells indicate that the difference in water level may be 20 to 40 feet in magnitude and is likely caused by municipal pumping. The City's pumping has not, however, affected the larger regional basin. The City's Urban Water Management Plan (UWMP) states that in general there is no apparent overdraft of the groundwater system and that there is sufficient recharge occurring during winter months when comparing groundwater conditions since the late 1950s. This would suggest that historical rates and patterns of extraction have not exceeded the safe yield of the basin (City of Brentwood, 2000).

Natural groundwater recharge occurs at an average of 3,000 to 6,000 AFY during normal years, and less than 2,000 AFY during drought years. Natural recharge is derived from deep percolation of rainfall, storm flow in creek channels, and irrigation (City of Brentwood, 2001b).

Groundwater Quality

The groundwater quality for the City of Brentwood is generally good and contains normally occurring constituents and man-made constituents. Man-made constituents consist of nitrates, chloride, and TDS. TDS in the groundwater is naturally high with up to 1,000 milligrams per liter (mg/L). Nitrate



FIRM Flood Insurance Rate Map, Panel 060025 0365 B.

Note: the mapped floodplain areas are immediately adjacent to Marsh Creek upstream of Concord Avenue and within the Marsh Creek Reservoir boundaries. Both areas are outside of the proposed development footprint.

Source: Balance Hydrologics, Inc. (2003)



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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

100-Year Flood Mapping

Exhibit 3.10-1

in the groundwater is generally attributed to agricultural practices. Groundwater is treated with chlorine at the well head.¹

3.10.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This section describes the thresholds of significance and discusses both storm water conveyance and storm water quality impacts and mitigation measures that would be required to reduce the potential impacts to a less than significant level.

Thresholds of Significance

CEQA Guidelines

The following thresholds of significance, based on the criteria contained in *Appendix G of the State CEQA Guidelines*, will be used to determine whether or not implementation of the development would result in significant hydrology or drainage impacts. Impacts would be considered significant if implementation of the project would:

- ❖ Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion, siltation, or flooding on- or off-site;
- ❖ Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- ❖ 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.
- ❖ Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality;
- ❖ 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;
- ❖ 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?
- ❖ Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- ❖ 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;

¹ City of Brentwood, June 2001, General Plan Update EIR, p. 3.12-2.

IMPACT 3.10-A. Changes in Drainage Patterns / Stormwater- Vineyards Project: The proposed Vineyards project would incorporate a stormwater management system to regulate the rate and volume of runoff in a manner that avoids any significant drainage impacts. (Less Than Significant Impact).

The Vineyards project proposes to incorporate a comprehensive stormwater management system, including two stormwater basins, in order to maintain the existing drainage pattern of the site, which is defined by two sub-watersheds that are separated north-south by a protruding ridge that extends through the project site. All of the stormwater runoff from the project would be collected and conveyed to Marsh Creek, similar to existing conditions. Two outfalls are proposed to Marsh Creek, one for each sub-watershed. The outfall locations were selected to emulate the existing confluence points with Marsh Creek. The southern sub-watershed would flow through a water-quality basin prior to entering the creek, while the northern sub-watershed would flow through a multi-purpose detention/water-quality basin prior to entering the creek.

Through the use of these basins, the points at which these two sub-watersheds would deliver stormwater runoff to Marsh Creek would be essentially the same points where runoff is currently transported to the Creek (Balance Hydrologics, 2003). The rate and flow at which stormwater would be delivered to Marsh Creek from the two sub-watersheds would also be similar to existing conditions (see Exhibit 3.10-2).

The northern sub-watershed would be 306 acres, and the southern sub-watershed would be 298 acres. The areas of the site proposed for development would be served by a conventional gravity flow storm drain system. Runoff from the proposed open space areas on the project site would be picked up by the storm drain system at the upstream limits of the development footprint.

Water Quality Basin for Southern Sub-watershed. A water quality basin would be constructed near the southern extension of Fairview Avenue. Stormwater would pass through the basin before entering Marsh Creek from the southern sub-watershed. Through the use of the basin, the rate and flow from the southern sub-watershed would be essentially the same as existing conditions. The hydrological analysis shows that pre-project conditions are best maintained by allowing stormwater runoff from the southern sub-watershed to enter Marsh Creek with little or no detention. (Balance Hydrologics, 2003).

Water Quality/Detention Basin for Northern Sub-watershed. The basin for the northern sub-watershed will be located along Concord Avenue and has been designed to accommodate not only runoff from the Vineyards project site, but also runoff from the planned SR4 Bypass project, which sweeps across the eastern portion of the site. The SR4 Bypass right-of-way is large, totaling 26 acres, much of which would be impermeable surfaces. Runoff from the Bypass would be routed in the northern sub-watershed to the proposed basin. (Balance Hydrologics, 2003).

The CCCFCWCD has identified that downstream flood control facilities are currently at full capacity and that any increases in peak flow could overtax downstream systems (Appendix B). The proposed Vineyards project will therefore have a beneficial effect by increasing stormwater detention capacity and accommodating the SR4 Bypass as well as the Vineyards project. The CCCFCWCD has recommended the development of such a regional stormwater detention facility, and the project proponent has been actively working with the CCCFCWCD in its planning to develop a system that will serve the multiple purposes of meeting the Vineyards project needs, accommodating runoff from

the SR4 Bypass, and enhancing downstream conditions. The final design and hydraulic analysis of this basin will be presented to the CCCFCWCD for its review, to ensure the basin is sufficient to reduce post-project flows to pre-project levels.

The regional stormwater basin proposed along Concord Avenue would serve runoff volume from the northern sub-watershed and would be a multi-purpose basin that would provide for stormwater detention to accommodate peak flows and minimize flooding potential in Marsh Creek, as well as serving as a water-quality basin and allowing for the settling of sediment.

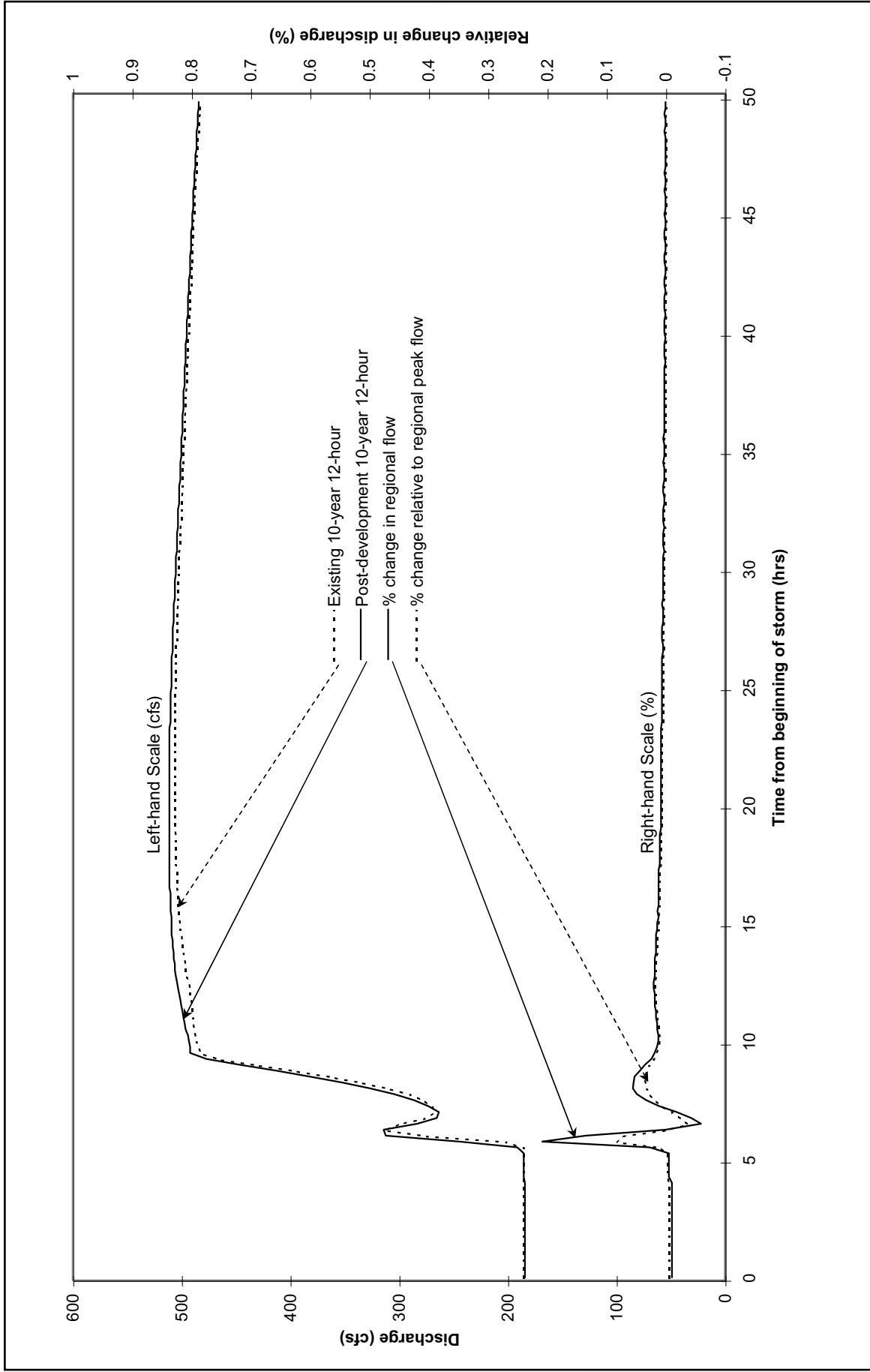
The amount and rate of stormwater runoff from the northern sub-watershed entering the Marsh Creek channel would have the potential to result in increased flooding risks and bank erosion without the detention of stormwater at the basin proposed along Concord Avenue. Through the development of the regional detention/stormwater quality basin, however, post-project hydrologic conditions would be similar to pre-project conditions (Exhibit 3.10-2). As shown in Exhibit 3.10-2, the post-development hydrograph illustrates only a slight increase in peak flows during a 10-year 12-hour storm. Through the use of onsite detention in the planned detention basin for the northern sub-watershed, stormwater runoff discharges to Marsh Creek would be managed at a rate to prevent downstream flooding (Balance Hydrologics, 2003).

The hydrologic analysis prepared for the Vineyards project found that the controlling 100-year storm event for local flows, i.e. flows limited to the Vineyards project site, is a 100-year 12-hour event and under existing conditions would result in a peak discharge of 333 cfs. With development of the proposed Vineyards project, the controlling storm would be a 100-year 6-hour event. The peak local flows generated with the Vineyards project would be 252 cfs, which equates to a reduction of 81 cfs or 24.3 % in the peak local flows (Balance Hydrologics, 2003).

For regional flows, i.e. flows throughout the watershed, the controlling 100-year storm event is the 100-year, 6-hour event. During such an event, the peak regional flows would be 592 cfs. With the proposed Vineyards project, the controlling storm would also be the 100-year 6-hour event and would result in a peak regional flow of 589 cfs. This equates to a 3 cfs, or 0.5 %, reduction in the peak regional flows with development of the proposed Vineyards project (Balance Hydrologics, 2003).

During 10-year storm events, the peak local flow under existing conditions would occur during a 10-year, 6-hour storm and would result in a peak local flow of 154 cfs. With development of the Vineyards project, local flows during a 10-year, 6-hour event would be reduced to 149 cfs, a reduction of 5 cfs or 3.2%. For regional flows during 10-year storm events, peak flows occur during a 10-year, 12-hour event. Under existing conditions, the peak regional flows during a 10-year event would be 507 cfs. With development of the Vineyards project, the peak regional discharge would be 511 cfs, an increase of 4 cfs or 0.8%. The increase, would be insubstantial, could not be avoided due to constraints of the hydrograph phasing in order to reduce 100-year event peak flows (Balance Hydrologics, 2003).

Through the use of both stormwater basins, as well as the incorporation of landscaping features and open space features integrated into the project's design, the rate and volume of stormwater runoff would be managed in a manner that would avoid any substantial erosion, siltation, and flooding. The detention basin will also provide additional stormwater detention, beyond the project's needs, and the



Source: Balance Hydrologics, Inc. (2003)



THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR Storm Discharge & Regional Flow - Vineyards Project

Exhibit 3.10-2

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project will therefore not cause or contribute to any stormwater releases in excess of the capacity of stormwater drainage systems.

Without the basins, urbanization of the Vineyards project site would have had the potential to result in changes in the site's drainage patterns in a manner that could contribute to increased flooding off-site and bank erosion and siltation of Marsh Creek. Furthermore, the introduction of impervious surfaces could also have resulted in increased peak flow rates and volume during large infrequent storms. In addition, the increase in the volume of runoff would have had the potential to result in increases in the amount of sediment delivered to the Marsh Creek channel and result in channel erosion. The increase in the stormwater volume delivered to Marsh Creek as a result of urbanization of the Vineyards project site would have also had the potential to result in flooding of Marsh Creek downstream. By incorporating the stormwater basins into the project design, however, the Vineyards project avoids these potential adverse effects.

Both stormwater basins have been designed based on the minimum hydraulic sizing design criteria specified in the Contra Costa Countywide NPDES Municipal Stormwater Permit (Region 2). The RWQCB calls for a treatment capacity adequate for the volume of annual runoff required to achieve 80% or more capture. The total Vineyards project would require a maximum detention storage of 26.4 af. This would require a peak water surface elevation of 117.3 feet. The detention basin proposed has a elevation of 122.0 feet to the top of the berm. The basin configuration has a total available storage capacity of 41.5 af. The detention basin would be able to empty 83% of its volume with the first 24-hours of peak inflow during a 100-year storm event without substantially increasing the volume of flows discharged to Marsh Creek. Within 48 hours, 93% of the volume would be able to be emptied. Due to the regional need for limited discharge from this basin, the guideline target that 100% of the water in the basin be released within 48 hours would not be achieved. However, the basin would be sufficient to prevent flooding from a 100-year storm event.

The Vineyards project would be subject to the CCCFCWCD Flood Control Permit and Drainage requirements for work that will be conducted within the CCCFCWCD right-of-way along Marsh Creek and for the construction of drainage systems. The permits require the submission of detailed drawings prepared in accordance with CCCFCWCD standards, hydrology calculations, and property information to ensure that any changes made would not adversely affect the hydraulic capacity of the watercourse. The applicant would be required to post bond for any work performed with the CCCFCWCD's right-of-way, which is determined during the permit review process and must be paid prior to the issuance of grading permits.

Finally, to prevent the accumulation of sedimentation in the basins, which might result in a lowered capacity causing increased flows, the project proponent will establish an operations and maintenance plan that includes annual monitoring and maintenance to ensure basin levels are maintained sufficiently over time to keep stormwater at acceptable levels.

In sum, by incorporating a stormwater management plan into the proposed Vineyards project, proposed runoff volumes and rates can be managed in a way that will not result in any off-site or on-site flooding or any bank erosion or siltation of Marsh Creek.

In order to further reduce this already less than significant impact, the following mitigation is recommended.

Recommended Mitigation 3.10-A. Changes in Drainage Patterns/Stormwater - Vineyards Project: The Vineyards project includes a stormwater management plan that would avoid significant drainage impacts; therefore, no mitigation is required. However, to minimize further the potential for a significant impact to occur, the following measure is recommended:

Prior to the approval of grading permits, flood control permits, and/or drainage permits, the project proponent shall submit to the CCCFCWCD the following materials for review and approval:

- ❖ A final hydrology study showing post-project peaks of downstream hydrographs;
- ❖ A geotechnical report of the proposed stormwater and water quality basins;
- ❖ Detailed design and construction plans of proposed water quality and detention basins;
- ❖ An Operations and Maintenance plan which addresses all aspects of basin maintenance including, but not limited to, prevention of sediment accumulation, vegetation management, access, structural maintenance, and monitoring plans.

(Less Than Significant Impact).

IMPACT 3.10-B. Changes in Drainage Patterns / Stormwater - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These improvements are unlikely to result in significant drainage effects. Potential development of a community college, however, would result in development and site grading with the potential to alter drainage patterns in a manner that could result in on- or off-site flooding, erosion, or siltation. These potential effects would result in a significant impact. (Potentially Significant Impact).

Potential development of a community college on the site owned by the Contra Costa Community College District (CCCCD) would have the potential to alter drainage patterns of the site in a manner that could result in increases in the rate and volume of stormwater flows. Regional facilities for the Marsh Creek are currently at capacity and, therefore, any substantial increases in runoff volumes and/or rates deposited into the Marsh Creek watershed could potentially overtax regional drainage systems in a manner that could result in on- or off-site flooding, erosion, and/or siltation impacts.

Furthermore, according to the CCCFCWCD, the community college site is located within an unformed drainage area (DA 52) that does not have any drainage area fees associated with it.

The CCCCDD should work with the CCCFCWCD to prepare a drainage plan that avoids any significant impacts arising from stormwater runoff and contribute any fees as deemed necessary by CCCFCWCD towards regional drainage facility improvements.

Mitigation 3.10-B.1 Changes in Drainage Patterns – Annexation Sites: Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These potential improvements would result in less than significant impacts which do not require mitigation. (Less Than Significant Impact).

Mitigation 3.10-B.2 Changes in Drainage Patterns – Annexation Sites: Potential development of a community college would result in potentially substantial changes to the site's drainage patterns that could have significant flooding, erosion, and/or siltation impacts. These impacts would be reduced to a less than significant level with application of the following mitigation measure(s):

- ❖ The CCCCDD shall conduct a project level environmental analysis of any development to occur on the community college site prior to initiation of site grading.
- ❖ The CCCCDD will coordinate with the CCCFCWCD during the project level environmental analysis to prepare a grading and drainage analysis that identifies any substantial increases in stormwater runoff volumes and rates and develop a plan that effectively controls stormwater runoff in a manner that avoids any on- or off-site flooding, erosion, and/or siltation impacts. The CCCCDD shall contribute a fair share towards improvements of downstream drainage facilities prior to initiation of site grading. (Less Than Significant Impact).

IMPACT 3.10-C. Exceed Water Quality Standards or Substantially Degrade Water Quality - Vineyards Project: The proposed Vineyards project includes a stormwater quality plan that includes development of two water quality basins and site design features to maximize water quality protection. Project runoff into Marsh Creek would meet the treatment requirements of the RWQCB and would protect water quality throughout the life of the project. Compliance with the RWQCB stormwater management requirements and use of construction Best Management Practices would limit water quality impacts that could potentially occur during project construction. Preexisting water quality impacts associated with underground pipelines could be remediated through development of the project resulting in a beneficial impact. (Less Than Significant Impact).

The introduction of impervious surfaces on the site would have the potential to increase the mobility of urban pollutants associated with the proposed development. Strategies to decrease the transport of urban pollutants to watercourses include specific site design elements, source control, and treatment. Many of these strategies are incorporated into the Vineyards project.

The project proponent would, as feasible; limit the mobility of urban pollutants through water-quality sensitive site design that limits the amount of directly connected impervious areas. By designing the site in a manner that incorporates landscaping and open space areas between impervious surfaces, (e.g. over pipelines and in park areas) a greater degree of infiltration and settling of pollutants would occur on the site. Urban pollutants can also be controlled at the source by educating those who would visit or reside on the site about strategies to control nonpoint source pollution. The final element in water quality protection is the use of treatment controls, such as water quality basins, to capture mobilized pollutants. The Vineyards project proposes two such water quality basins. The basins would be an integral element of the storm drain system for the project and would be classified as constructed wetlands (Balance Hydrologics, 2003). Constructed wetlands function similar to natural wetlands, but do not require special permits for routine maintenance activities as would be necessary for any disturbance to natural wetlands. Through these measures and implementation of best management practices, any significant water quality impacts from the Vineyards project will be avoided.

The presence of underground petroleum pipelines on the Vineyards project site would have the potential to result in a degradation of water quality, should they be disturbed in such a manner that would result in a hazardous materials impact. The project proponent would be required to validate the size, location, and depth of underground pipelines and to employ special safety measures prior to any activities within 100' of the pipelines. The potential for future hazardous materials release would be less than significant with the implementation of mitigation measures described in Section 3.11 of this EIR (refer to Section 3.11- Hazards and Hazardous Materials).

Existing leaks of the underground pipelines have been identified and are contributing to an existing degradation of water quality in Marsh Creek. Water samples have been taken at three different points along Marsh Creek. Hydrocarbons exceeding the reporting limit were identified downstream of the Marsh Creek Reservoir. The leaking pipelines are an existing condition and the resulting petroleum pollution is not an environmental effect caused by the proposed Vineyards project. The proposed Vineyards project would not contribute further to this condition. Development of the Vineyards project would enable the remediation of the leaking pipelines and would ultimately result in a beneficial impact by correcting an existing degradation of water quality.

The grading of the Vineyards project would occur at one time to allow for balancing of soils on the project site. Site grading is proposed to include a series of cut and fill areas designed to create the streets, building pads and transition slopes. Existing hills and ridgelines visible from outside the Vineyards project site would be retained. No soils are proposed to be imported or exported with the project. The exposed/graded areas are proposed to be hydroseeded in accordance with City of Brentwood requirements.

As required by the State Water Resources Control Board (SWRCB), projects that disturb one or more acres of soil must obtain a General Permit for Discharges of Storm Water Associated with Construction Activity. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling and excavation. In accordance with applicable federal and state water quality requirements, a comprehensive Storm Water Pollution Prevention Plan (SWPPP) would be prepared by the applicant and approved by the RWQCB. The Vineyards project would apply Best Management Practices (BMPs) such as site winterization, use of sediment traps, and hydroseeding of bare soils. These required procedures would ensure that no significant impacts from construction would occur.

The SWPPP would include site and project details, existing and proposed buildings locations, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project site. The SWPPP would also be required to list BMPs that the project proponent would use to protect storm water runoff and demonstrate the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and, if the site would discharge directly to a water body, a sediment monitoring plan is also required. Compliance with the legal requirements for construction projects and the preparation and implementation of a SWPPP and associated BMPs would minimize any impacts from construction due to erosion and runoff to a less than significant level.

In order to reduce the already less than significant water quality impacts further, the following mitigation measures are recommended.

Recommended Mitigation 3.10-C.1. Exceed Water Quality Standards or Substantially Degrade Water Quality - Vineyards Project: Compliance with existing laws and requirements would result in a less-than-significant impact to water quality, and no mitigation is required. However, to minimize further the potential for a significant impact, the following mitigation is recommended.

The project proponent shall implement, to the maximum extent feasible, the following non-structural BMPs, from the California Storm Water Best Management Practice Handbook.

Throughout construction, the project proponent or assigned construction manager shall:

- ❖ *Public Education/Participation* – Disseminate informational materials and possibly post signs informing guests of the natural resources downstream and the possibility of negative impacts associated with the use of the land.
- ❖ *Housekeeping Practices* – Clean up spills, practice proper disposal of certain substances and wise application of chemicals.
- ❖ *Material Storage Control* – Minimize the storage of hazardous materials on-site, store materials in designated areas, install secondary containment, conduct regular inspections, and train employees and subcontractors on proper handling and disposal of materials.
- ❖ *Vehicle Leak and Spill Control* – Maintain equipment and security vehicles.

Throughout the long-term operation of the project:

- ❖ *Street Cleaning*- The responsible homeowners' association or site manager shall conduct regular cleaning of paved areas, parking lots, streets, and access roads.
- ❖ *Contaminated or Erodible Surface Areas* – In the winery and commercial areas, the site manager shall prevent and reduce pollutants from

contaminated or erodible surface areas by leaving as much vegetation on site as possible, minimizing soil exposure time, stabilizing exposed soils, and prevent storm water runoff and run-on.

Recommended Mitigation 3.10-C.2. Exceed Water Quality Standards or Substantially Degrade Water Quality - Vineyards Project: Prior to issuance of grading permits, the City of Brentwood shall verify that the project proponent has included proper measures during the site design to limit the mobilization of urban pollutants. Such measures shall include, but not be limited to, the following:

- ❖ *Reduced Street Widths-* The project proponent shall work with the City of Brentwood to construct the minimum street widths compatible with the safety of residents.
- ❖ *Residential Areas:* All residential lots shall be graded to drain to the front so that runoff from individual homes is routed through the storm drain system and to the water quality basins. Driveways shall also be constructed to minimum width necessary for achieving vehicle access and parking goals.
- ❖ *Trash Collection Areas:* In the non-residential areas, all trash collection areas shall be covered sufficiently to prevent rainfall from coming into contact with trash collection areas and mobilizing pollutants. Drainage from these areas shall be directed to the sanitary sewer system.
- ❖ *Storm Drain Inlets:* Mark all storm drain inlets and collection points with a message indicating that the inlets/collection points drain to Marsh Creek and that runoff can directly impair the receiving waters.

(Less Than Significant Impact).

IMPACT 3.10-D. Exceed Water Quality Standards or Substantially Degrade Water Quality - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. It is anticipated that development of a potential community college would result in less than significant impacts to water quality because compliance with the SWRCB's General Construction Permit requirements would protect water quality. Improvements to the John Marsh Home would result in less than significant impacts to water quality because minimal improvements are contemplated and none would have the potential to substantially degrade water quality. (Less Than Significant Impact).

As required by the State Water Resources Control Board (SWRCB), projects that disturb one or more acres of soil must obtain a General Permit for Discharges of Storm Water Associated with Construction Activity. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling and excavation. In accordance with applicable federal and state water quality requirements, a comprehensive Storm Water Pollution Prevention Plan (SWPPP) would be required for the project and Best Management Practices (BMPs) such as site winterization, use of sediment traps, and hydroseeding of bare soils would be implemented. These

required procedures would ensure that no significant water quality impacts from construction would occur.

The potential development of a community college would be required to comply with the SWRCB General Construction Permit requirements, which would effectively protect water quality. No further mitigation is necessary.

Recommended Mitigation 3.10-D.1 Exceed Water Quality Standards or Substantially Degrade Water Quality – Annexation Sites: The project proponent shall implement, to the extent feasible and applicable, the following non-structural BMPs, from the California Storm Water Best Management Practice Handbook.

Throughout construction, the project proponent or assigned construction manager shall:

- ❖ *Public Education/Participation* – Disseminate informational materials and possibly post signs informing guests of the natural resources downstream and the possibility of negative impacts associated with the use of the land.
- ❖ *Housekeeping Practices* – Clean up spills, practice proper disposal of certain substances and wise application of chemicals.
- ❖ *Material Storage Control* – Minimize the storage of hazardous materials on-site, store materials in designated areas, install secondary containment, conduct regular inspections, and train employees and subcontractors on proper handling and disposal of materials.
- ❖ *Vehicle Leak and Spill Control* – Maintain equipment and security vehicles.

Throughout the long-term operation of the project, the proponent or site manager shall:

- ❖ *Street Cleaning-* Conduct regular cleaning of paved areas, parking lots, streets, and access roads.
- ❖ *Contaminated or Erodible Surface Areas* – Prevent and reduce pollutants from contaminated or erodible surface areas by leaving as much vegetation on site as possible, minimizing soil exposure time, stabilizing exposed soils, and prevent storm water runoff and run-on.

Recommended Mitigation 3.10-D.2. Exceed Water Quality Standards or Substantially Degrade Water Quality – Annexation Sites: Prior to issuance of grading permits, the project proponent shall include proper measures during the site design to limit the mobilization of urban pollutants. Such measures shall include, but not be limited to, the following:

- ❖ *Trash Collection Areas:* All trash collection areas shall be covered sufficiently to prevent rainfall from coming into contact with trash collection areas and

mobilizing pollutants. Drainage from these areas shall be directed to the sanitary sewer system.

- ❖ ***Storm Drain Inlets:* Mark all storm drain inlets and collection points with a message indicating that the inlets/collection points drain to Marsh Creek and that runoff can directly impair the receiving waters.**

(Less Than Significant Impact).

IMPACT 3.10-E. Depletion of Groundwater or Interference of Recharge Resulting in a Net Deficit - Vineyards Project: The proposed Vineyards project would not substantially deplete groundwater supplies or interfere with recharge. The Vineyards project would utilize municipal sources for its water supply. Development of the site has been anticipated in the City of Brentwood's Urban Water Management Plan (UWMP), which found that there has not been a substantial decrease in aquifer volumes from municipal groundwater pumping. (Less Than Significant Impact).

The proposed Vineyards project water supply would through the City of Brentwood's municipal water system. Approximately 67% of the City's water supply is provided by groundwater (refer to § 3.14).

The City's UWMP includes water demands and supplies through the year 2020 based on growth projections of the Association of Bay Area Governments (ABAG). ABAG assumed development in the City consistent with the City's General Plan, which included development of SPA J. The UWMP has determined that the City would have sufficient water to meet the needs of projected growth and existing consumers (City of Brentwood, 2000).

The proposed Vineyards project site was included in the area projected for urban growth in the UWMP. Additionally, the UWMP assumed growth throughout SPA J that has since been acquired by the State for park purposes and placed outside of the Urban Limit Line (ULL) and is no longer available for development (refer to Section 2.2). Therefore, the UWMP included growth throughout a larger area than is currently available for development.

The City's UWMP found that when comparing conditions from the late 1950's to present, there has been no apparent overdraft of the aquifer system from which groundwater is extracted. This suggests that historical extraction patterns have not exceeded the safe yield of the basin. Static water level readings have indicated a 20 to 40 feet difference in water level likely caused by municipal pumping. However, the City's pumping has not impacted the larger regional system (City of Brentwood, 2000).

The proposed Vineyards project would not exceed the water supplies of the City or require an increase in groundwater pumping and, therefore, would not result in a substantial depletion of groundwater supplies (refer to § 3.14).

Natural recharge is derived from deep percolation of rainfall, storm flow in creek channels, and irrigation (City of Brentwood, 2001b). The Vineyards project would not substantially interfere with groundwater recharge rates. The project would maintain a substantial amount of open space and landscaped areas that would allow for infiltration of stormwater. Stormwater runoff would be discharged to Marsh Creek, allowing for natural recharge in the creek channel.

Mitigation 3.10-E Depletion of Groundwater or Interference of Recharge Resulting in a Net Deficit - Vineyards Project: The proposed Vineyards project would not result in a substantial depletion of groundwater resources, or interfere substantially with groundwater recharge and, therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.10-F. Depletion of Groundwater or Interference of Recharge Resulting in a Net Deficit – Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These improvements would not require substantial amounts of groundwater. Potential development of the College Site has been anticipated in the City of Brentwood’s Urban Water Management Plan (UWMP) which found that there has not been a substantial decrease in aquifer volumes from municipal groundwater pumping. (Less Than Significant Impact).

The potential development of the community college would result in increased water demands. This site was included in the City of Brentwood’s UWMP and anticipated for development under its current General Plan designation of Business Park. Prior to project development the CCCCDD would conduct project-level water analysis to determine the project specific use of groundwater resources.

Mitigation 3.10-F Substantial Depletion of Groundwater or Interference of Recharge Resulting in a Net Deficit – Annexation Sites: Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These improvements would not require substantial amounts of groundwater. Development of the community college site is included in the UWMP. Potential development of these sites would result in less than significant impacts, which do not require mitigation. (Less Than Significant Impact).

IMPACT 3.10-G. Structures Within 100-Year Flood Hazard Areas or Within Dam Failure Inundation Zones - Vineyards Project: The proposed Vineyards project would not result in significant impacts from structures within 100-year flood hazard areas or within dam failure inundation zones; therefore no mitigation is required. However, to minimize further the potential for a significant impact to occur, mitigation measure is recommended.

The proposed Vineyards project site would not contribute to on- or off-site flooding and is located outside of the 100-year flood zone as mapped by FEMA. Portions of the commercial land use area would be located within the dam failure inundation boundary for Marsh Creek Dam, however, the site grading would result in grades in this area above the elevation of the mapped zone. (Less Than Significant Impact).

The proposed Vineyards project site is located outside of the 100-year flood zone as mapped by FEMA (refer to Exhibit 3.10-1). No housing or structure would be located within the 100-year flood plain and, therefore, a less than significant impact would occur.

The very eastern portion of the project site would be located within the dam failure inundation boundary for Marsh Creek Dam (Exhibit 3.10-3). Portions of the planned commercial land use area currently lie within the flood inundation boundary. However, grading of the Vineyards project will be completed such that the resulting pads would be 2 feet above the 100-year flood level elevation.

The proposed Vineyards project would not result in significant impacts from structures within 100-year flood hazard areas or within dam failure inundations zones; therefore no mitigation is required. However, to further minimize the potential for a significant impact to occur, the following mitigation measure is recommended.

Recommended Mitigation 3.10-G. Structures Within 100-Year Flood Hazard Areas or Within Dam Failure Inundation Zones - Vineyards Project: The proposed Vineyards project would not result in significant impacts from structures within 100-year flood hazard areas or within dam failure inundation zones; therefore no mitigation is required. However, to further minimize the potential for a significant impact to occur, the following mitigation measure is recommended.

Prior to the issuance of grading permits, the City of Brentwood shall review the grading plans to verify that no structures are located within the mapped dam failure inundations zones or that no structures are constructed at an elevation below inundation levels. (Less Than Significant Impact).

IMPACT 3.10-H. Structures Within 100-Year Flood Hazard Areas or Within Dam Failure Inundation Zones - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. Potential development of a community college, however, could place structures in the flood inundation boundary in the event of failure of Marsh Creek dam. These potential effects could result in a significant impact. (Potentially Significant Impact).

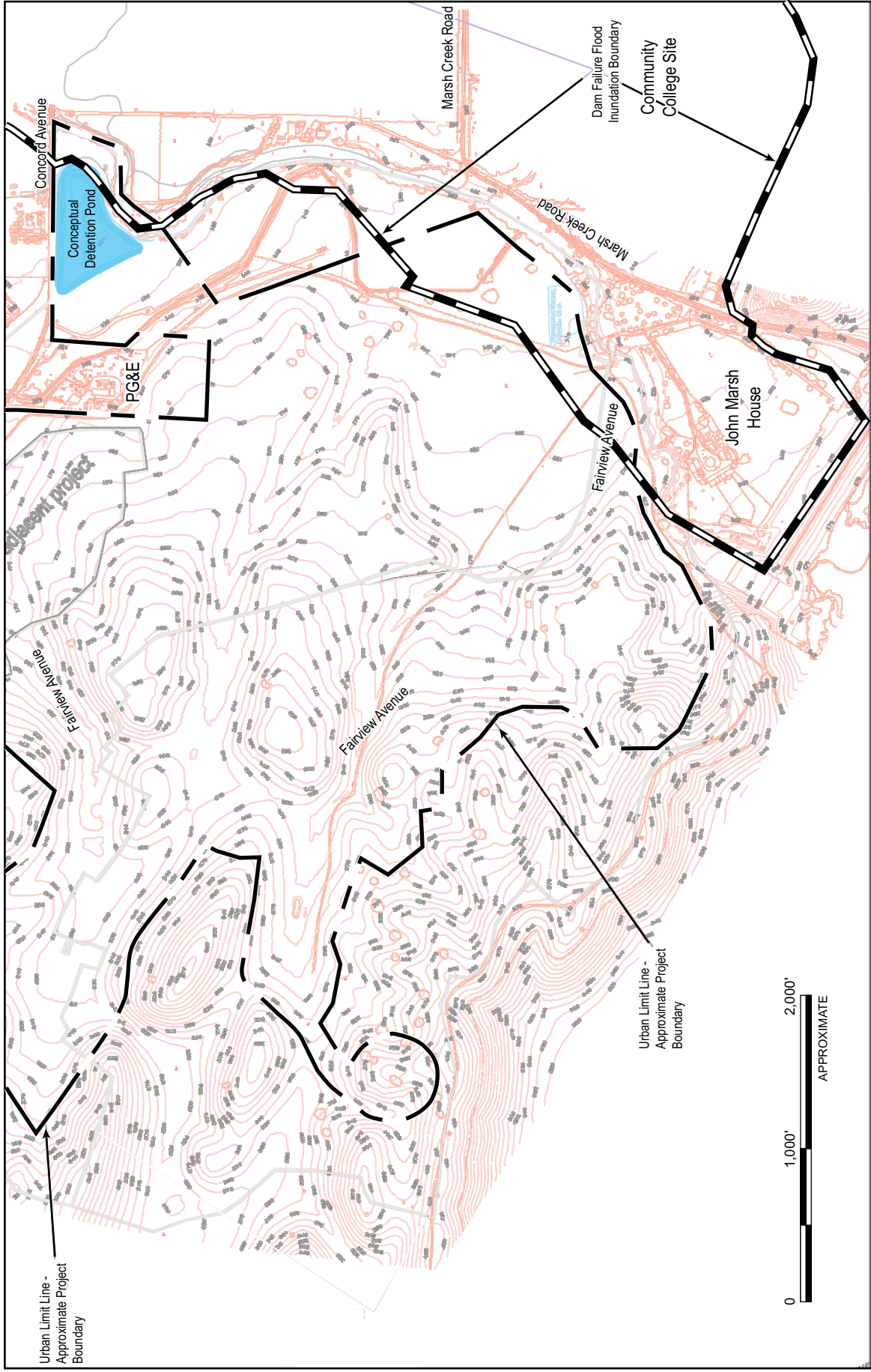
Both the John Marsh Home and the community college site are located outside of the 100-year flood zone as mapped by FEMA (refer to Exhibit 3.10-1). The John Marsh Home site is located within the dam failure inundation boundary. No new structures are proposed on this site and, therefore, a less than significant impact with regard to the John Marsh Home site would occur.

The community college site is located within the dam failure inundation for Marsh Creek Reservoir (Exhibit 3.10-3). The development of structures in this area would potentially be susceptible to damage as a result of dam failure. The CCCCD should work with the CCCFCWCD during the site design to identify measures such as constructing building pads at an elevation that would limit flooding in the event of dam failure, or other measures as deemed appropriate by the CCCFCWCD to avoid risks associated with dam failure are employed in the sites design.

Mitigation 3.10-H.1 Structures Within 100-Year Flood Hazard Areas or Within Dam Failure Inundation Zones – Annexation Sites: Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These potential improvements would result in less than significant impacts which do not require mitigation. (Less Than Significant Impact).

Mitigation 3.10-H.2 Structures Within 100-Year Flood Hazard Areas or Within Dam Failure Inundation Zones – Annexation Sites: Potential development of a community college would result in potentially significant impacts associated with placement of structures in a dam failure inundation zone. These impacts would be reduced to a less than significant level with application of the following mitigation measure(s):

- ❖ Prior to initiation of site grading, the CCCCD shall conduct a project level environmental review. During the project level environmental review, impacts associated with potential failures of Marsh Creek Dam and the placement of structures within the inundation zone shall be assessed.
- ❖ The Contra Costa Community College District shall work with the CCCFCWCD during the site design to identify measures such as constructing building pads at an elevation that would limit flooding in the event of dam failure, or other measures as deemed appropriate by the CCCFCWCD. The CCCCD shall implement measures in the sites design to avoid risks associated with dam failure. (Less Than Significant Impact).



Source: Balance Hydrologics, Inc. (2003)



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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR
Flood Inundation Boundaries - Vineyards Project

Exhibit 3.10-3

IMPACT 3.10-I. Cumulative Impacts – Substantial Changes in Drainage Patterns: The proposed Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the Brentwood Planning Area, could result in significant cumulative drainage impacts in terms of flooding, erosion, sedimentation, and/or siltation. (Potentially Significant Cumulative Impact).

The Vineyards project would incorporate a stormwater management plan, including two stormwater basins, to regulate the flow and volume of runoff in a manner that emulates existing, pre-project conditions and that avoids any significant drainage impacts. As explained above, the water quality/detention basin for the northern sub-watershed would reduce flows from the 100-year storm event, as compared with existing, pre-project conditions. For regional flows during the 10-year, 12-hour storm event, the Vineyards project would result in a minor increase in the peak regional discharge of 4 cubic feet per second, an increase of 0.8%. The basin has been designed to accommodate not only flows from the Vineyards project, but also flows from a portion of the SR4 Bypass.

With respect to the Annexation Sites, any potential future improvements to the John Marsh Home are anticipated to be minor and would not result in significant drainage impacts. Potential development of a community college, however, could result in development and site grading with the potential to alter drainage patterns in a manner that could result in on- or offsite flooding, erosion, and/or siltation. As explained above, any development of the community college site would include a stormwater management plan to control flows in a manner that avoids any on- or off-site flooding, erosion and/or siltation impacts. By implementing Mitigation 3.10-B.2, impacts would be mitigated to a less than significant level.

With respect to cumulative development in the City of Brentwood, the EIR for the City of Brentwood's General Plan Update explained that the goals and policies in the General Plan would reduce cumulative impacts due to stormwater runoff to a less than significant level. These policies include adherence to Best Management Practices, improving Brentwood's storm drainage facilities and providing that new development will contribute its fair share of the cost of on- and off-site public infrastructure and services. As explained above, the Vineyards project would develop a stormwater detention system to accommodate not only the flows from the project, but also the flows from a portion of the SR4 Bypass. With respect to the potential future development of the community college, under Mitigation 3.10-B.2, the CCCCD would contribute its fair share towards improvements of downstream drainage facilities prior to the initiation of site grading. With mitigation, the potential impacts of developing the community college would be less than significant. Moreover, development would be in conformance with applicable stormwater requirements, including adherence to best management practices.

Mitigation 3.10-I. Cumulative Impacts – Substantial Changes in Drainage Patterns: Implementation of project-specific mitigation measures (see Mitigations 3.10-A, 3.10-B.1, and 3.10-B.2), would reduce the projects' incremental contribution to cumulative drainage impacts to a less than significant level. (Less Than Significant Cumulative Impact).

IMPACT 3.10-J. Cumulative Impacts – Exceed Water Quality Standards or Substantially Degrade Water Quality: The Vineyards project and the potential future development of the Annexation Sites would include stormwater quality protection to minimize water quality impacts; as a result, the incremental effect of the actions studied in this EIR to the cumulative water quality impacts caused by development throughout the watershed would not be cumulatively considerable and would therefore be less than significant. (Less Than Significant Cumulative Impact).

The Vineyards project would include a stormwater quality plan – including two water quality basins, adherence to best management practices and use of site design features – to maximize water quality protection and to limit water quality impacts. It is anticipated that any potential future development of the Annexation Sites would also include best management practices to protect water quality in accordance with State Water Resources Control Board requirements. Therefore, impacts to water quality would be less than significant.

The EIR for the City of Brentwood’s General Plan Update explained that while cumulative development in the Brentwood Planning Area would have the potential for significant water quality impacts, mitigation (including best management practices as well as conservation and open space policies) would reduce these impacts to a less than significant level. As a result, cumulative water quality impacts are not anticipated to be significant.

Mitigation 3.10-J. Cumulative Impacts – Exceed Water Quality Standards or Substantially Degrade Water Quality: The incremental effects of the Vineyards project and the potential future development of the Annexation Sites on water quality are not cumulatively considerable and are therefore less than significant; therefore, no mitigation is required. (Less Than Significant Cumulative Impact).

IMPACT 3.10-K. Cumulative Impacts – Impacts on Groundwater Resources: The proposed Vineyards project and the potential future development of the Annexation Sites, in combination with past, present, and probable future project in the Brentwood Planning Area would not substantially deplete groundwater supplies or substantially interfere with groundwater recharge. (Less Than Significant Cumulative Impact).

As explained above, the UWMP includes water demands and supplies through the year 2020. The UWMP, by assuming growth throughout SPA J, assessed growth throughout a larger area than is currently available for development. This suggests that future water demands may be lower than what is projected in the UWMP.

The UWMP compared conditions from the late 1950’s to the present and found no apparent overdraft of the groundwater system. This suggests that historical extraction patterns have not exceeded the safe yield of the system. The UWMP further found no substantial changes in the movement of groundwater within the City since the late 1950’s. The UWMP also found that the City’s groundwater pumping has not impacted the regional groundwater system.

The UWMP concluded that the City would have sufficient water supplies to meet the needs of projected growth and existing customers. In fact, the UWMP shows a substantial surplus of water supplies through 2020. In particular, the UWMP shows that, long-term, this water supply surplus is

projected to exceed the City's total groundwater supply (refer to Tables 3.14-1 and 3.14-2). Moreover, the UWMP assumes that no additional groundwater supplies will be identified beyond the supplies that are currently available to the City. The UWMP shows an increasing reliance over the long-term on surface water supplies and on recycled water from the Brentwood WWTP. Finally, the UWMP did not assume the benefit of water conservation measures that are available to the City to reduce future water demands.

In light of all of these factors, significant cumulative impacts in terms of potential depletion of groundwater resources are not anticipated. Nevertheless, the City has indicated that it periodically conducts monitoring of static water levels to determine if municipal pumping is having adverse effects on groundwater supplies.

Mitigation 3.10-K. Cumulative Impacts – Impacts on Groundwater Resources: No significant cumulative impacts to groundwater resources are anticipated and, therefore, no mitigation is required. (Less Than Significant Cumulative Impact).

IMPACT 3.10-L. Cumulative Impacts – Flood Hazard/Dam Failure Impacts: Impacts resulting from the placement of structures within flood or dam failure inundation zones are site-specific impacts, not cumulative impacts. (Less Than Significant Cumulative Impact).

The Vineyards project site and the Annexation Sites are located outside of the 100-year floodplain. Portions of the Vineyards project site would be located within the dam failure inundation zone, but the project would be designed such that project grades would be located above the elevation corresponding to the fringe of the mapped inundation zone. The community college site is also located within the dam failure inundation zone; as a result, the EIR proposed mitigation to reduce potential impacts to a less than significant level.

The impacts at issue are potential impacts *on the development* due to the possibility of flooding and dam failure, not impacts *caused by the development* on the environment. As a result, these impacts are site-specific – i.e., specific to the development studied in this EIR – and are not cumulative in nature.

In any case, the EIR for the City of Brentwood's General Plan Update explained that policies and goals in the General Plan would reduce potential flood hazard impacts on cumulative development to a less than level.

Mitigation 3.10-L. Cumulative Impacts – Flood Hazard/Dam Failure Impacts: Impacts resulting from the placement of structures within flood or dam failure inundation zones are site-specific impacts, not cumulative impacts; therefore, no mitigation is required. (Less Than Significant Cumulative Impact).

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3.11 HAZARDS AND HAZARDOUS MATERIALS

This section describes the current on- and off-site conditions related to hazards and hazardous materials on the proposed Vineyards Project, and provides an evaluation of the potential for the project to result in related environmental impacts. This section also includes an analysis and discussion of potential hazards and hazardous materials effects that could occur from the annexation, related General Plan amendments, and potential improvements to the John Marsh Home and the Contra Costa Community College District (CCCCD) site. Mitigation measures that are necessary to reduce or avoid significant impacts during the construction and/or operation of the projects are also discussed.

According to the California Health and Safety Code, §25124, a “hazardous waste” is any hazardous material that is abandoned, discarded, or stored prior to recycling. The categories that apply to hazardous material and to hazardous wastes are toxicity, ignitability, corrosivity, or reactivity. Certain chemical and physical properties of a substance may cause it to be considered hazardous. Under state law, hazardous properties are grouped into four general categories: toxic, ignitable, corrosive, and reactive. As defined in the California Code of Regulations (CCR), Title 22, §66084, a “hazardous material” is a “substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either: (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or (2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of or otherwise managed.”

The analysis in this section is based on three reports prepared for the Vineyards project by ENGEO, Incorporated (ENGEO), of Tracy, California. These three reports include a Phase 1 Environmental Site Assessment (ESA) (ENGEO, 2003b), a Chevron Petroleum Pipeline Assessment (ENGEO, 2003c), and a Pipeline Exploration report (ENGEO, 2003d). These reports are available for review at the City of Brentwood Community Development Department, 104 Oak Street, Brentwood, California.

Methodology of Research

According to ENGEO, the Phase 1 ESA (ENGEO 2003b) was prepared in conformance with the American Society for Testing and Materials (ASTM) Standard Practices E 1527-00. The purpose of a Phase 1 ESA is to identify recognized environmental conditions associated with the proposed Vineyards Project. As defined in the ASTM Standard Practices E 1527-00, a recognized environmental condition is the “presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.” The following methods were used to determine the potential for recognized environmental conditions to occur at the site:

- ❖ A review of publicly available and practicably reviewable standard, state, and federal environmental record sources.
- ❖ A review of several publicly available and practicably reviewable standard historical sources, aerial photographs, fire insurance maps, and physical setting sources.

- ❖ A site reconnaissance of the Vineyards project property.
- ❖ Interviews with knowledgeable property owners/representatives and/or government officials.
- ❖ Preparation of a Phase 1 ESA with findings and conclusions.

The Chevron Petroleum Pipeline Assessment (ENGE0, 2003c) was performed to evaluate the presence of petroleum products along a 4,000 linear foot underground pipeline that extends across the northeastern portion of the Vineyards project site. The following methods were used to determine the presence or absence of petroleum releases in the soil:

- ❖ Drilling of 10 borings to the groundwater level along the pipeline alignment and collection of a water sample at each location.
- ❖ Screening of soil samples at five-foot intervals for the presence of organic vapor using an organic vapor meter (OVM).
- ❖ Collection of select soil samples in areas of detected organic vapors.
- ❖ Laboratory analysis of soil and groundwater samples for petroleum hydrocarbons.
- ❖ Preparation of the Pipeline Assessment report.

The Pipeline Exploration report (ENGE0, 2003d) was conducted to further analyze the documented petroleum pipeline release reported in the Chevron Petroleum Pipeline Assessment. The following methods were used to characterize the extent of the release in the soil:

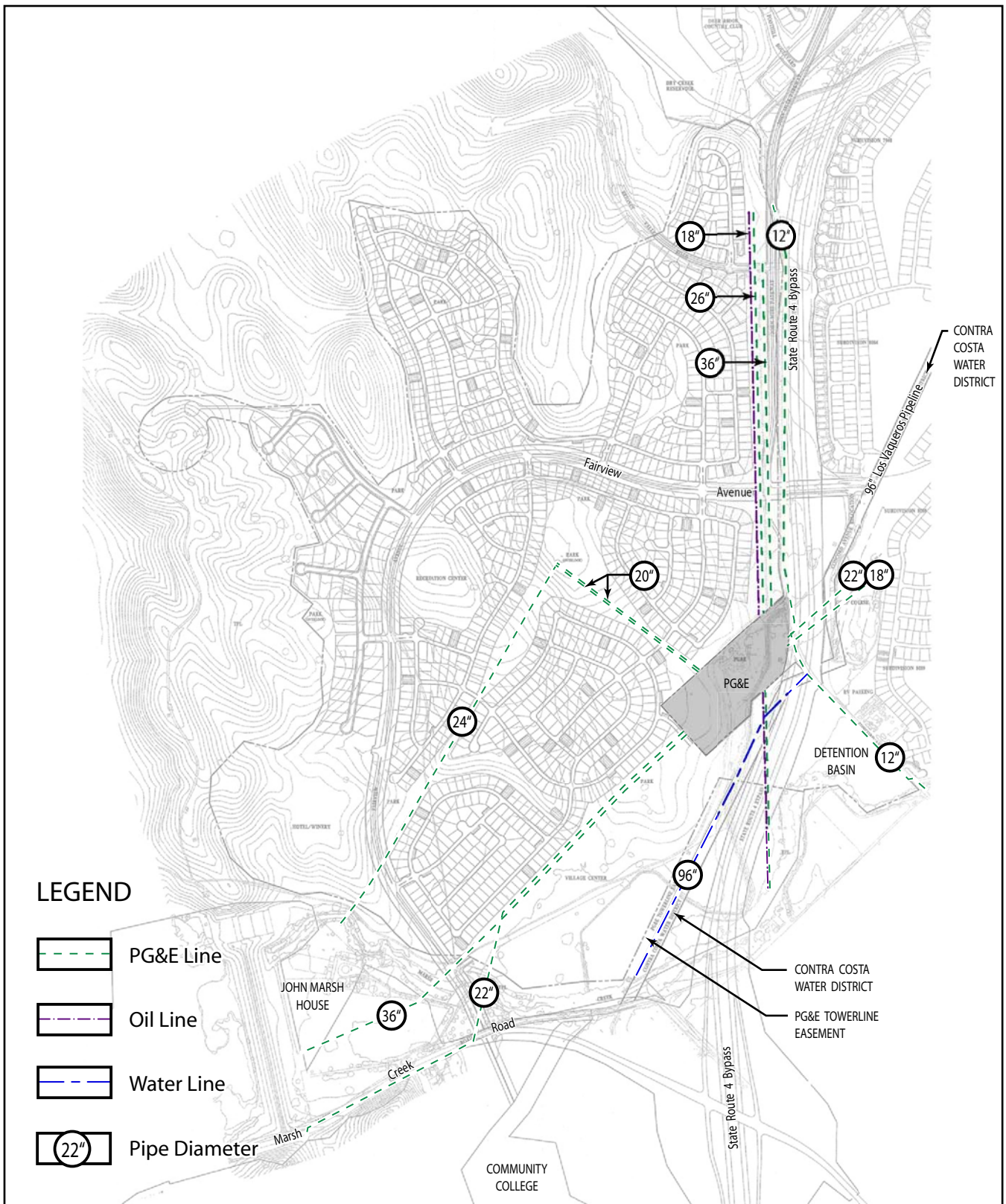
- ❖ Excavation of 23 test pits and 2 trenches to a depth of 10 feet in the area of the release.
- ❖ Collection of 29 soil samples from mostly 10 foot depths for analysis.
- ❖ Screening of soil samples recovered from 5 foot and 10 foot depths for the presence of organic vapor using an OVM.
- ❖ Laboratory analysis of selected soils samples for total petroleum hydrocarbons for gasoline, diesel, motor oil, and benzene, toluene, ethyl benzene, and xylenes.
- ❖ Preparation of the Pipeline Exploration report documenting field activity, laboratory analysis, and conclusions and recommendations.

3.11.1 ENVIRONMENTAL SETTING

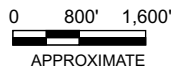
Existing Conditions

Vineyards Project

The proposed Vineyards Project is an undeveloped 481-acre property that is primarily used as grazing land for cattle. The site does not contain any buildings or major improvements except for underground natural gas, water, and petroleum pipelines that traverse or abut the project site (Exhibit 3.11-1).



Source: Carlson, Barbee and Gibson (2003)



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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR
Location of Underground Pipelines

Exhibit 3.11-1

The majority of the property consists of a series of hillslopes and valleys trending northwesterly with drainages trending northeasterly towards Marsh Creek. The eastern portion of the site consists of an alluvial plain. Elevations at the site vary from approximately 375 feet at the western property line to approximately 145 feet at the eastern property line. Vegetation on the proposed project site primarily consists of scattered trees and grasslands.

The Vineyards project is generally surrounded by the existing Summerset residential development (an active adult community) to the north and northeast; a California State Park to the west, south, and southwest; and vacant and developing residential land to the east; and the future site of Segment 3 of the SR 4 Bypass. The state park includes the historic John Marsh Home and the Marsh Creek Reservoir, which are both located just south of the site. Other uses in the vicinity of the site include the East Contra Costa Irrigation District (ECCID) Canal (located within the site), a Pacific Gas and Electric (PG&E) substation (located adjacent to the eastern edge of the site at 1800 Concord Avenue), and an aluminum-sided, tilt-up warehouse where diving equipment is manufactured (located ½ mile north of the site on Concord Avenue on the Landgraphy property).

Historical Land Uses

ENGEO reviewed historical topographic maps, aerial photographs, and building/planning department records from local, state, and federal agencies to determine previous uses or occupancies of the site and its surroundings. The topographic maps that were reviewed were dated 1911, 1946, 1968, and 1978. No buildings or structures or substantial changes to the topography or hydrology of the site and its vicinity were present on the maps. However, a Natural Gas Meter Facility is shown on the 1949, 1968, and 1978 topographic maps. The aerial photographs that were reviewed were dated 1957, 1963, 1970, 1979, 1988, 1992, 1996, 1999, and 2002. The review of the maps found the site to be relatively unchanged from the earliest photograph to present site conditions. The site was shown as unimproved with the exception of underground pipelines, which are evident as lineaments on the larger scale aerial photographs. The review of building/planning department records from local, state, and federal agencies did not indicate previous uses or occupancies of the site and its surroundings. Based on the review of historical maps, aerial, photographs, and local, state, and federal files, it appears that the site has been historically used for cattle ranching/grazing.

Hazardous Materials Conditions

According to the ENGEO Phase 1 ESA (ENGEO, 2003b), a review of regulatory hazardous material databases maintained by county, state, and federal agencies found no documentation of hazardous materials violations or discharges on the proposed Vineyards site. A review of historic topographic maps, aerial photographs, and building and planning records indicate that the site has been historically used for cattle ranching. The site reconnaissance and records review did not reveal documentation or physical evidence of soil or groundwater contamination. Property representatives were not aware of any existing or preexisting environmental conditions associated with the site. However, the Phase 1 ESA did identify the underground petroleum pipelines on the site as a potential environmental concern.

A site reconnaissance was conducted on March 19, 2003 by ENGEO (ENGEO, 2003b). This reconnaissance revealed no documentation or physical evidence of soil or groundwater contamination. The project site was inspected for the presence of surficial staining or discoloration, debris, stressed

vegetation or other conditions that may be indicative of potential sources of soil or groundwater contamination. The proposed project site was also inspected for fill/ventilation pipes, ground subsidence, or other evidence of existing or pre-existing underground storage tanks. The results of the inspection concluded that there was no new evidence of hazardous materials use or storage on the site.

On April 9, 2003, ENGEO completed an environmental site assessment questionnaire with property representative Ms. Mary S. Metz, President of the S.H. Cowell Foundation (ENGEO, 2003b). Ms. Metz had no knowledge of existing or pre-existing environmental conditions associated with the proposed Vineyards project site. Further, Ms. Metz had no knowledge of any previous environmental site assessments, audits, or environmentally related permits on or near the proposed development site.

A review by ENGEO of regulatory databases maintained by county, state, and federal agencies revealed no documentation of hazardous material violations or discharges on the proposed Vineyards project site (ENGEO, 2003b). The database search did not identify any Resource Conservation and Recovery Act (RCRA) treatment/storage/disposal facilities; Federal National Priority List (NPL) sites; or Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) equivalent site within one mile of the Vineyards project site. Additionally, no leaking underground storage tanks (USTs) are documented within one-half mile of the proposed site, and no registered UST facilities are documented within one-quarter mile of the proposed project. One registered hazardous waste generator (HWG) is documented for the PG&E Brentwood Terminal, located east of the project site at 1800 Concord Avenue (ENGEO, 2003b). The HWG site has no reported violations.

The Phase 1 ESA concluded that the petroleum and gas pipelines located adjacent to and under the site represent a potential recognized environmental concern (ENGEO, 2003b). A total of nine PG&E underground pipeline easements and 8 pipelines are located within the proposed Vineyards project site. Five of the pipelines are underground natural gas lines owned by PG&E. There is one Chevron crude oil pipeline, one Tosco and one Standard Pacific/PG&E natural gas pipeline. A portion of the Contra Costa County Water District (CCCWD) underground Los Vaqueros water pipeline runs within the eastern portion of the proposed Vineyards project site (refer to Exhibit 3.11-1). In addition, there exists a 60KV PG&E pole line located adjacent to Concord Avenue and Briones Valley Road. These poles will remain above ground. Table 3.11-1 below provides the name and diameter of each underground pipeline within the proposed Vineyards site. Exhibit 3.11-1 shows the general location of the pipelines.

Based on the fact that the underground petroleum pipelines on the site were identified in the Phase I ESA as a potential recognized environmental concern, ENGEO prepared a Pipeline Assessment for the Chevron pipelines (ENGEO, 2003c). The assessment determined that detectable concentrations of toluene, ethyl benzene, xylenes, and TPH as gasoline, diesel, kerosene, and motor oil were present in soil and groundwater samples collected from a boring near the 18-inch Chevron pipeline that runs along the west side of Concord Avenue. An area of concern (Boring B-3) is located near the intersection of the future extension of Fairview Avenue and existing Concord Avenue. The assessment concluded that the area is “adversely impacted” as a result of releases from the petroleum pipeline.

**TABLE 3.11-1
EXISTING UNDERGROUND PIPELINES
VINEYARDS PROJECT SITE**

Owner/Name of Underground Pipeline and Contents	Diameter of Underground Pipeline Segment
Contra Costa Water District Los Vaqueros Water Pipeline	96 inch
Tosco, natural gas pipeline	12 inch
PG&E Line 303, natural gas pipeline	36 inch
PG&E / Standard Pacific, natural gas pipeline	26 inch
Chevron, oil pipeline	18 inch
PG&E Line 114, natural gas pipeline	22 inch
PG&E Line 57A, natural gas pipeline	18 inch
PG&E Line 131, natural gas pipeline	20 inch
PG&E Line 131, natural gas pipeline	24 inch

Source: Carlson, Barbee & Gibson, Vineyards at Marsh Creek Constraints Map, March 20, 2003.

Based on the findings in the pipeline assessment report, a pipeline exploration was conducted to confirm the source and extent of the product release from the petroleum pipeline (ENGE0, 2003d). Because the pipelines were known to have contained mainly petroleum hydrocarbon products, laboratory analysis of only TPH and the BTEX compounds were required. Of the 29 samples collected and analyzed, 12 had elevated organic vapor meter (OVM) readings and/or elevated levels of TPH, ethyl benzene and xylenes. An OVM reading is taken in the field during sampling, and provides a basis for determining the areas from which to collect samples for laboratory analysis. Table 3.11-2 presents a summary of the sample analysis results.

**TABLE 3.11-2
SUMMARY OF SOIL SAMPLE ANALYSIS
VINEYARDS PROJECT SITE**

Sample No.	OVM Reading (ppm)	TPH (ppm)			Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylenes (ppm)
		Gasoline	Diesel	Oil				
<i>Detection Limits</i>	10	1.0	1.0	5.0	0.005	0.005	0.005	0.005
303-S	905 (10')	1,600	9,100	7,000	ND	ND	8.0	2.8
CS-2	443 (5')	ND	7.9	6.3	ND	ND	ND	ND
CS-3	881 (5')	320	4,000	2,900	ND	ND	0.10	0.23
M-3	671 (10')	300	2,000	1,800	ND	ND	0.44	0.83
M-4	566 (10')	250	3,800	3,500	ND	ND	0.16	0.40
M-5	737 (10')	750	4,500	3,800	ND	ND	ND	1.2
M-6	432 (10')	470	2,900	2,000	ND	ND	0.50	0.86

**TABLE 3.11-2
SUMMARY OF SOIL SAMPLE ANALYSIS
VINEYARDS PROJECT SITE**

Sample No.	OVM Reading (ppm)	TPH (ppm)			Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylenes (ppm)
		Gasoline	Diesel	Oil				
P-3	566 (10')	950	5,000	3,800	ND	ND	1.5	1.5
P-4	458 (10')	690	2,500	1,900	ND	ND	0.61	ND
P-5	930 (10')	1,000	4,000	3,100	ND	ND	3.8	9.7
T-1-6'	1,046 (6')	2,400	8,400	8,700	ND	ND	11	90
T-4-5'	720 (5')	850	3,300	2,600	ND	ND	2.6	1.3

Source: McCampbell Analytical, Inc., 2003, as reported in ENGE0, 2003d.

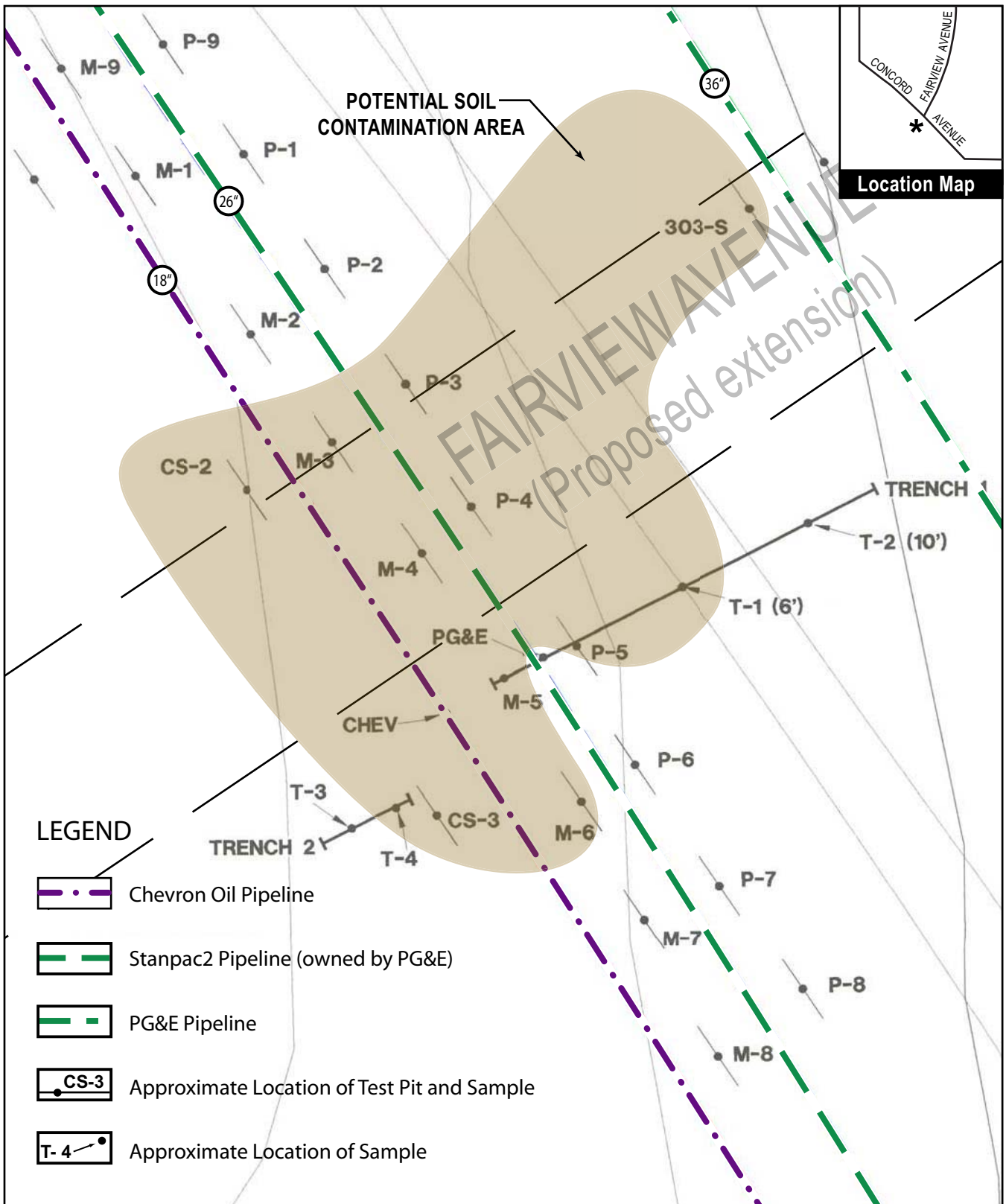
A map showing the locations of the soils samples and potential area of contamination is presented in Exhibit 3.11-2. Based on the above analysis, the size of the area of concern is approximately 110 feet by 80 feet, or about 8,800 cubic feet. Affected soils will need to be removed or treated prior to any grading activity at the site. Removal would entail excavating and transporting the impacted soils to a Class 3 facility for disposal. Alternatively, excavated soils could be biologically treated onsite. With biotreatment, excavated soils would be placed in 18-inch lifts, where nitrogen, phosphorous and potassium would be added. These soils would then be aerated and disced to allow natural degradation of the contaminants. These treated soils could then be reused as engineered fill under non-residential uses.

Groundwater was not encountered during the pipeline exploration sampling, and no groundwater monitoring has been conducted in this area to date. Analysis of groundwater samples during the pipeline assessment activity indicated that groundwater contains levels of TPH and volatile organic compounds. Therefore, because groundwater is already affected, a site characterization may be required by the local enforcement agency and/or the RWQCB. Since the Pipeline Assessment and the Pipeline Exploration activities were unable to determine a definite source of the releases, the project applicant has been working with the potentially responsible parties to address groundwater issues.

Offsite Conditions

In addition to existing on-site conditions, the Phase 1 ESA identified the following off-site land uses:

- ❖ Ranch dwellings and appurtenant structures located to the south of the proposed Vineyards at Marsh Creek project site which include the Marsh Family Historic Home;
- ❖ The Marsh Creek Reservoir, constructed in 1962, located south of the proposed project;
- ❖ The ECCCID Canal and the PG&E substation located east of the proposed project site;
- ❖ 230KV PG&E power lines run adjacent to the east boundary of the site;
- ❖ Single-family ranch style homes and farms located southeast of the proposed project site;



Source: ENGEO (2003)



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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR
Soil Exploration Location Map

Exhibit 3.11-2

- ❖ Recently constructed subdivisions located north and northeast of the proposed project site;
- ❖ An aluminum-sided tilt-up warehouse, manufacturing diving equipment and road signs located ½ mile north of the proposed development;
- ❖ Open space and cattle grazing land on the adjoining properties to the west of the proposed project; and
- ❖ The Suncal School (Krey Elementary) site located near Balfour Road and Concord Avenue.

The Phase 1 ESA indicated that the PG&E substation is listed as a small quantity waste generator. The hazardous material databases did not record any violations at the PG&E substation site. The Suncal School site is listed on the Cal-Site hazardous material list. However, the Phase 1 ESA concluded that the school site would not impact the Vineyards project due to its distance and location (approximately one mile northwest) to the Vineyards project site. Therefore, there are no known off-site hazardous material conditions that would have an adverse effect on the Vineyards project site.

Annexation Sites

The Annexation Sites currently include the John Marsh Home and State Park and grazing lands. The John Marsh Home State Park would be under the jurisdiction of the Department of Parks and Recreation. The community college site is under the jurisdiction of the CCCCD. Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. When and if development plans are created for the John Marsh Home improvements or construction of a community college, the State Parks Department and CCCCD would conduct CEQA analysis. As part of that analysis, a Phase I ESA would be required prior to development or improvement on the Annexation Sites. Therefore, no Phase I ESA or other studies have been conducted for these sites at this time.

Relevant Goals, Objectives, and Policies

Brentwood General Plan, 2001-2021

The Brentwood General Plan contains a number of policies that direct the future and long-term use of the Vineyards project and Annexation Sites. Other General Plan policies relevant to other environmental issues are incorporated into those EIR sections and are not duplicated in this hazards and hazardous materials discussion. Goals and policies relevant to hazardous materials are found in the Community Safety Element of the General Plan. Among the policies relevant to the hazardous materials discussion are the following:

Goal 2 – Hazardous Materials:

The Hazardous Materials goal of the Community Safety Element seeks to, “maintain Brentwood safe from risks associated with hazardous materials.” The specific policy to accomplish this goal that is applicable to the proposed project is listed below.

- ❖ Policy 2.1 – Hazardous Substances: Protect the community of Brentwood from hazards associated with the use, transport, treatment, and disposal of hazardous substances.

3.11.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Regulatory Framework

Hazardous wastes and hazardous materials are regulated by numerous federal, state, county, and local laws and regulations. The hazardous waste and hazardous materials laws and regulations are enforced by federal, state, county, and local agencies such as the RCRA and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Hazardous wastes, materials, and remediation issues are addressed in the CEQA process to identify and evaluate potentially significant impacts to the environment that could potentially result from implementation of the proposed project and to provide a forum for the application of mitigation measures.

Thresholds of Significance

Significant impacts related to hazards and hazardous materials were determined from criteria stated in the questions found in *Appendix G of the State CEQA Guidelines*. A significant impact would result if the project would:

- ❖ Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- ❖ 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;
- ❖ Be located on a site that is included on a list of hazardous materials sites compiled pursuant Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- ❖ Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; and
- ❖ Expose people or structures to a significant risk of loss, injury or death involving Wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

IMPACT 3.11-A. Use of Hazardous Materials - Vineyards Project: Construction of the proposed Vineyards project would potentially require the use and transport of some hazardous materials in the form of petroleum-based fuels, fertilizers, paints and glues. An accidental spill or release of such materials could result in potentially significant impacts to construction workers, adjacent land uses, and the environment. However, standard construction practices are regulated by the Occupational Safety and Health Administration (OSHA) and supervised by a construction manager. Any materials released would be contained and cleaned up or remediated as required and monitored by local, state, and federal law. Residential and non-residential uses within the proposed Vineyards project would not create a significant hazard to the public or the environment through the routine use, transport, or disposal of hazardous materials. (Less Than Significant Impact).

Construction Impacts

Some hazardous materials may be used during construction of the Vineyards project. These materials would be in the form of petroleum-based fuels for construction vehicles, and paints and various glues used for the construction of structures. As such, there is the possibility of accidental release of hazardous materials during construction activities. The level of risk associated with the accidental release of hazardous substances is not considered substantial due to the small volume and low concentration of hazardous materials utilized during site construction phases. Project contractors responsible for the proposed uses within the project area would be required to use standard construction controls and safety procedures that would avoid and minimize the potential for accidental release of such substances into the environment. Any materials released would be contained and remediated as required and monitored by the onsite construction manager and regulated by local, state, and federal law. Hazardous materials would also be handled and disposed of according to the manufacturers guidelines and pursuant to State regulations. Implementation of the following mitigation measure would further minimize the potential less than significant impacts.

Project Impacts

The proposed land uses within the Vineyards project would not create a substantial hazard to the public or environment through the routine use, transport, or disposal of hazardous materials. The land uses within the proposed Vineyards project would include residential units, retail and commercial uses, a congregate care facility, a hotel, parks and open space, and a winery. These uses may use, store, and transport small quantities of hazardous materials, such as household cleaning products, paints, solvents, and petroleum products. However, the quantities of hazardous materials would be anticipated to be low, and would not create a significant hazard to the public or the environment.

Fertilizers, pesticides, and fungicides would likely be used by the land uses within the Vineyards project for landscaping maintenance and to control pests within the vineyards. Commercially available fertilizers, pesticides and fungicides are generally sold in quantities and in containers that make it difficult to release large quantities on to the soil or into the air. Commercial packages of such materials are also sold with strict application instructions for the protection of homeowners. Consequently, these fertilizers, pesticides and fungicides do not pose a substantial risk of contamination to the environment. Residential uses do not typically generate hazardous wastes or materials. Some localized runoff may result from the use of fertilizers, pesticides and fungicides. However runoff is usually controlled by the small volume of materials applied to residential landscape areas, by the absorption of materials into the landscaping, and by directing runoff into swales located throughout the project site.

The landscape areas of the village center and other non-residential areas are proposed to be maintained by professional landscape companies. Professional landscape firms are trained in the safe practices of applying fertilizers, pesticides and fungicides. Such practices include, among others, avoiding the application of aerial sprays during days or times of high winds, and not applying excessive amounts of materials in landscape areas.

The proposed vineyards use may use sulphur as a soil treatment and to control mildew. The proposed vineyards would be planted over approximately 60 acres, thereby limiting the amount of sulphur that may be required. In general, vineyards require about 10 to 20 gallons of water-based sulphur for

manual application (Meadows, 2003). The sulphur would be applied at specific periods of time (i.e., seasonally, prior to leafing) or when mildew conditions exist, which would limit the amounts used on the project site. Many jurisdictions (e.g., Napa County) consider sulphur a naturally occurring material and not a hazardous material. Additionally, many vintners now follow the Code of Sustainable Wine Growing, which stipulates the use of naturally-occurring or eco-friendly agriculture practices (Meadows, 2003). In addition, water-based sulphur is not associated with high levels of odor.

The proposed congregate care facilities would generate biomedical waste products. Biomedical wastes include a wide variety of items that may carry disease-causing germs, such as hepatitis. It also includes live vaccines, laboratory samples, cultures, used needles and medical equipment, and human body fluids and wastes. The mishandling of biomedical wastes could result in potential health hazards. However, all congregate care facilities would be required to comply with the California Medical Waste Management Act. This Act requires generators of medical waste to develop a plan that specifies the procedures that are to be used in handling, storing, treating, transporting, and disposing of medical waste. Mandatory compliance with this act would minimize the potential risk for health hazards related to biomedical wastes.

Recommended Mitigation 3.11-A. Use of Hazardous Materials During Construction - Vineyards Project: The proposed Vineyards project would not result in a significant impact associated with the use, transport or disposal of hazardous materials; therefore no mitigation is required. However, to further minimize the potential for a significant impact, the following mitigation measure is recommended:

Procedures to be followed in the event of an accident shall be included on the contractor's notes of all grading and construction plans. Inclusion of the procedures shall be verified by the City of Brentwood prior to the issuance of grading permits. In the event of a spill of hazardous materials (e.g., fuel leak, spill of paint or glue) used during project construction, the development team shall be responsible for the complete and immediate cleanup. The City of Brentwood Community Development Department shall be immediately notified, and shall verify satisfactory cleanup. (Less Than Significant Impact).

IMPACT 3.11-B. Use of Hazardous Materials - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Construction would potentially require the use and transport of some hazardous materials in the form of petroleum-based fuels, fertilizers, paints and glues. An accidental spill or release of such materials could result in potentially significant impacts to construction workers, adjacent land uses, and the environment. However, standard construction practices are regulated by the Occupational Safety and Health Administration (OSHA) and supervised by a construction manager. Any materials released would be contained and cleaned up or remediated as required and monitored by local, state, and federal law. Potential development of a community college may include storage, use, and transport of small quantities of hazardous materials such as janitorial supplies/cleaning products, paints, solvents, and petroleum products. (Less Than Significant Impact).

Construction Impacts

As discussed for the Vineyards project in Impact 3.11.A, above, some hazardous materials may be used during construction activities at the Annexation Sites. These materials would be in the form of petroleum-based fuels for construction vehicles, and paints and various glues used for the construction of structures. As such, there is the possibility of accidental release of hazardous materials during construction activities. The level of risk associated with the accidental release of hazardous substances is not considered significant due to the small volume and low concentration of hazardous materials utilized during site construction phases. Project contractors responsible for the proposed uses within the project area would be required to use standard construction controls and safety procedures that would avoid and minimize the potential for accidental release of such substances into the environment. Any materials released during construction shall be immediately cleaned up under the supervision of the onsite construction manager, as required by local, state, and federal law. Hazardous materials would also be handled and disposed of according to the manufacturers guidelines and pursuant to State regulations. Implementation of the following mitigation measure would further minimize potential impacts are reduced to a less than significant level.

Project Impacts

Potential development of a community college would increase the intensity of existing uses as well as the conversion of existing uses from agricultural grazing land to a college campus. This use may result in the storage and use of limited amounts of household hazardous materials (i.e., cleaning solutions, aerosols, halogen light fixtures, solvents) onsite. However, these substances would not be anticipated to be stored in quantities that would pose a significant environmental risk to students, faculty, and employees of the college. Additionally, these substances would be required to follow strict regulatory procedures for their use, storage, transport, and disposal. Therefore, potential accidental conditions would not perpetuate a release of hazardous materials, and the storage, use, transport, and disposal of hazardous materials resulting from development of a community college would not create a significant hazard to the public or the environment.

Recommended Mitigation 3.11-B. Use of Hazardous Materials - Annexation Sites. Potential future development of the Annexation Sites project would not result in a significant impact associated with the use, transport or disposal of hazardous materials; therefore no mitigation is required. However, to further minimize the potential for a significant impact, the following mitigation measure is recommended:

Procedures to be followed in the event of an accident shall be included on the contractor's notes of all grading and construction plans. Inclusion of the procedures shall be verified by the CCCC prior to the issuance of grading permits. In the event of a spill of hazardous materials (e.g., fuel leak, spill of paint or glue) used during project construction, and CCCC shall be responsible for the complete and immediate cleanup. During project operation, household and maintenance hazardous materials are not anticipated to be stored in quantities that would pose a significant environmental risk to human health. Additionally, these substances are required to follow strict local, state, and/or federal regulatory procedures for their use, storage, transport, and disposal, and therefore no significant impacts are

anticipated to result from development or improvements to the Annexation Sites. (Less Than Significant Impact).

IMPACT 3.11-C. Reasonably Foreseeable Upset and Accident Involving Hazardous Materials Release - Vineyards Project: Project construction, including grading and drilling, could potentially result in accidental damage to underground petroleum and natural gas pipelines. Such damage could result in the release of hazardous materials into the environment and related hazards. (Potentially Significant Impact).

One crude oil and seven natural gas underground pipelines are located within the proposed Vineyards project site (see Table 3.11-1 and Exhibit 3.11-1 of this section). The pipelines on the proposed Vineyards project site are sealed to protect them from external erosion. Gas pipelines experience less internal corrosion than do liquid pipelines. Since natural gas and crude oil distribution lines are present, the potential exists for these pipelines to be damaged during construction, resulting in the possibility of the release of crude oil or natural gas. Project contractors responsible for construction of future development projects within the project area would be required to use standard construction controls and safety procedures that would avoid and minimize the potential for accidental release of such substances into the environment. As required by the Subdivision Map Act, pipeline operators in the project area must be included in the review and approval process of all tentative and final development maps in areas of pipeline easements. As required by the California Building Standards (CCR Title 24), no buildings shall be permitted in pipeline rights-of-way and no machine excavation shall be permitted within 10 feet of a pipeline unless it is to relocate the pipeline according to an approved plan. To minimize potential impacts related to underground pipelines during construction, the following mitigation measure would be required.

Mitigation 3.11-C. Reasonably Foreseeable Upset and Accident Involving Hazardous Materials Release - Vineyards Project. Prior to the issuance of the first grading permit, the applicant will be required to obtain “as built” drawings or otherwise validate the location, size and depth of underground crude oil and natural gas pipelines. No construction shall occur within 10 feet of the pipelines, except for pipelines below new roadways. For these pipelines, the contractor shall employ safety and containment policies and procedures to avoid the potential of risk or upset of the pipelines. (Less Than Significant Impact).

IMPACT 3.11-D. Reasonably Foreseeable Upset and Accident Involving Hazardous Materials Release - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. Extensive excavation is not anticipated to occur for the John Marsh Home. No pipelines are located on the community college site. Project construction, including grading and drilling, would not result in accidental damage to underground crude oil and natural gas pipelines. (Less Than Significant Impact).

To date, no site-specific plans have been prepared for either of the Annexation Sites. Future development of the John Marsh Home Site is not anticipated to include extensive excavation or relocation of pipelines. Any pipelines on the site would be avoided. The EIR for Cowell Ranch reviewed the potential for pipelines on the Community College Site and concluded none were present. (Contra Costa County 1996). Thus, project construction is unlikely to result in accidental damage to underground crude oil and natural gas pipelines. This is a less than significant impact.

Recommended Mitigation 3.11-D. Reasonably Foreseeable Upset and Accident Involving Hazardous Materials Release - Annexation Sites. Future development of the Annexation Sites is not likely to result in accidental damage to underground crude oil or natural gas pipelines; therefore no mitigation is required. However, to further minimize the potential for a significant impact, the following mitigation measure is recommended:

CCCCD will be required to obtain “as built” drawings or otherwise validate the location, size and depth of any underground pipelines, if present. No construction activities shall occur within 10 feet of the pipelines, except for pipelines below new roadways that are relocated according to an approved plan. Plans shall be developed such that development or construction on the Annexation Sites would not interfere with any pipelines. The contractor shall employ safety and containment policies and procedures to avoid the potential of risk or upset of the pipelines. (Less Than Significant Impact).

IMPACT 3.11-E. Located on a Known Hazardous Materials Site - Vineyards Project: One area of the Vineyards project site is known to be contaminated as a result of historic leaks or spills from underground pipelines that previously carried petroleum. Approximately 8,800 cubic feet of soils near the pipelines at the intersection of the future Fairview Avenue extension and existing Concord Avenue are contaminated with toluene, ethyl benzene, xylenes, and TPH gasoline, diesel, kerosene, and motor oil. These contaminants would be disturbed during the relocation of the pipelines for the construction of the Fairview Avenue/John Muir Parkway intersection. Construction workers could be exposed to these contaminants, but it is unlikely that offsite residents would be exposed due to the nature of these contaminants. (Significant Impact).

Pursuant to the California Government Code §65962.5, certain state agencies must compile and report any site that may pose hazardous materials risks. The State of California Department of Toxic Substances Control (DTSC) is required to compile and update as appropriate, but at least annually, a list of hazardous materials sites including, but not limited to, hazardous waste facilities, all land designated as hazardous waste property, and all sites included in the Abandoned Site Assessment Program.

In addition to the sites reported by the DTSC, the State Department of Health Services also is required to compile and update annually, and shall submit to the Secretary for Environmental Protection, a list of all public drinking water wells that contain detectable levels of organic contaminants and that are subject to water analysis.

The State Water Resources Control Board (SWRCB) shall also report all underground storage tanks for which an unauthorized release report is filed, all solid waste disposal facilities from which there is a migration of hazardous waste, all cease and desist orders, and cleanup/abatement orders issued after January 1, 1986. The local enforcement agency must also compile and report all solid waste disposal facilities where there is a known migration of hazardous materials. The information is then consolidated by the Secretary for Environmental Protection and submitted and distributed to each city and county in which sites on the lists are located.

The proposed Vineyards project site is not currently listed as a hazardous materials site pursuant to California Government Code §65962.5. However, a Pipeline Assessment prepared by ENGEО determined that detectable concentrations of toluene, ethyl benzene, xylenes, and TPH gasoline, diesel, kerosene, and motor oil were present in soil and groundwater near the proposed intersection of Fairview Avenue and John Muir Parkway. The assessment concluded that the area has been adversely impacted as a result of historic releases of petroleum. A subsequent Pipeline Exploration analysis was conducted to confirm the extent of the contamination and identify a source of the releases. Results of soil sampling indicated elevated levels of TPH, ethyl benzene and xylenes in 11 soil samples, which could expose construction workers to contaminated soils during construction of that intersection if construction workers are not adequately protected. During construction, these types of contaminants are unlikely to migrate through the air to offsite residents or other receptors due to the nature of the contaminants. However, protective steps (e.g. through a soil management plan) would be taken to further minimize the likelihood that offsite residents would be exposed. For example, air monitoring would be conducted and downwind migration, if any, would be controlled through moisture conditioning or temporary discontinuation of work to allow for volatilization.

No effects are expected beyond the construction period because residential uses are not proposed in the areas of known contamination. Thus, no exposure pathway would occur for residents.

The pipeline owners potentially responsible for the contamination and the RWQCB have been notified of the contamination. The RWQCB has been provided copies of the Chevron Petroleum Pipeline Assessment dated June 16, 2003 and the Pipeline Exploration Report dated August 22, 2003.

Mitigation 3.11-E. Located on a Known Hazardous Materials Site - Vineyards Project. Prior to grading of the site, a Site Remediation Plan will be prepared by a qualified geotechnical engineer or equivalent to address remediation of contaminated soils. The Site Remediation Plan will be submitted to the Contra Costa County Environmental Health, Hazardous Materials Division for approval. The Site Remediation Plan will include procedures for remediation of the soils. Remediation could include, but is not limited to: 1) excavation of the contaminated soils and disposal at a Class 3 landfill; or 2) onsite treatment of soils using bioremediation techniques. In addition, a Soils Management Plan shall be prepared and shall contain measures to protect construction workers from potential exposure to contamination as well as measures to prevent offsite exposure to residents. Measures in the Soils Management Plan would include air monitoring during construction, protective clothing for any workers who would be in contact with contaminated soils, soil conditioning and/or procedures to stop work if indicated by monitoring.

In addition, prior to grading of the site, a site characterization study shall be prepared by the developer to determine the extent, if any, of groundwater contamination. The findings of the site characterization shall be included in the Site Remediation Plan and submitted to the Contra Costa County Environmental Health Department, Hazardous Materials Division and the San Francisco Regional Water Quality Control Board (RWQCB) for approval. Since the Pipeline Assessment and the Pipeline Exploration activities were unable to determine a definite source of the releases, the project applicant shall work cooperatively with Potentially Responsible Parties and the County Department of Environmental Health and the RWQCB to address groundwater issues. The site characterization study may require the installation of monitoring wells, and remediation, if required, may include, but is not limited to, groundwater treatment or placement of a barrier to prevent further migration. (Less Than Significant Impact).

IMPACT 3.11-F. Located on a Known Hazardous Materials Site - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These potential activities would avoid pipeline areas on the John Marsh Home Site. Grading and construction activities conducted pursuant to potential development of a community college are unlikely to encounter contaminated soils and/or groundwater because there are no known pipelines under the college site. (Less Than Significant Impact).

Pursuant to the California Government Code §65962.5, certain state agencies must compile and report any site that may pose hazardous materials risks. The State of California Department of Toxic Substances Control (DTSC) is required to compile and update as appropriate, but at least annually, a list of hazardous materials sites including, but not limited to, hazardous waste facilities, all land designated as hazardous waste property, and all sites included in the Abandoned Site Assessment Program.

In addition to the sites reported by the DTSC, the State Department of Health Services also is required to compile and update annually, and shall submit to the Secretary for Environmental Protection, a list of all public drinking water wells that contain detectable levels of organic contaminants and that are subject to water analysis.

The State Water Resources Control Board (SWRCB) shall also report all underground storage tanks for which an unauthorized release report is filed, all solid waste disposal facilities from which there is a migration of hazardous waste, all cease and desist orders, and cleanup/abatement orders issued after January 1, 1986. The local enforcement agency must also compile and report all solid waste disposal facilities where there is a known migration of hazardous materials. The information is then consolidated by the Secretary for Environmental Protection and submitted and distributed to each city and county in which sites on the lists are located.

The Annexation Sites have mainly been used for cattle grazing. Potential future development on the John Marsh Home site is not likely to disturb pipeline areas. There are no known pipelines on the

Community College Site. Thus, it is unlikely that exposure to contaminated soils would occur. However, prior to any improvements or site grading, a Phase I Environmental Assessment is recommended for each Annexation Site.

Recommended Mitigation 3.11-F. Located on a Known Hazardous Materials Site - Annexation Sites. Potential future development of the Annexation Sites would not be located on a known hazardous materials site; therefore no mitigation is required. However, to further minimize the potential for a significant impact, the following mitigation measure is recommended:

Prior to any site improvement or grading activity, a Phase I Environmental Site Assessment shall be conducted for each site. The Phase I ESA will determine if historical uses of the sites indicate a potential for soil and/or groundwater contamination from hazardous materials. Any additional assessments or remediation that could be required would be based on the findings of the Phase I ESA. (Less Than Significant Impact).

IMPACT 3.11-G. Impair or Interfere with Emergency Response Plans - Vineyards Project: The City of Brentwood has an Emergency Operations Plan. The plan provides standard operating procedures for various emergencies that could occur in the City, such as earthquakes, fires, and floods. The proposed Vineyards project would not impair the implementation of or physically interfere with the Emergency Operations Plan. (Less Than Significant Impact).

The City of Brentwood Emergency Operations Plan generally describes the standard operating procedures to be enacted by police, fire, emergency medical, and other government officials and agencies during an emergency within the City. The Plan addresses emergencies that could likely occur within the City of Brentwood, including fires, earthquakes, extreme weather, floods, and landslides. Uncommon emergencies, such as terrorism and hazardous material spills are also addressed in the Plan.

The proposed Vineyards at Marsh Creek Project would not impair or physically interfere with the implementation of the Emergency Operations Plan. The project does not involve any components that would prevent city departments, emergency agencies, and government officials from implementing the Plan during a major emergency. The project would not physically block or interfere with a component of the plan, such as an emergency evacuation route. Therefore, less than significant impacts would occur as a result of the project.

Mitigation 3.11-G. Impair or Interfere with Emergency Response Plans - Vineyards Project: The proposed Vineyards project would result in a less than significant impact on any applicable emergency response plans and, therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.11-H. Impair or Interfere with Emergency Response Plans - Annexation Sites: The potential future improvements to the John Marsh Home, and potential development of a community college would not impair the implementation or physically interfere with the City of Brentwood's Emergency Operations Plan. (Less Than Significant Impact).

The City of Brentwood Emergency Operations Plan generally describes the standard operating procedures to be enacted by police, fire, emergency medical, and other government officials and agencies during an emergency within the City. The Plan addresses emergencies that could likely occur within the City of Brentwood, including fires, earthquakes, extreme weather, floods, and landslides. Uncommon emergencies, such as terrorism and hazardous material spills are also addressed in the Plan.

Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. Site improvements to the John Marsh Home and potential development of a community college are not anticipated to impair or physically interfere with the implementation of the City's Emergency Operations Plan because they would not obstruct access to emergency routes, such as the SR4 Bypass. Neither project is anticipated to involve any components that would prevent city departments, emergency agencies, and government officials from implementing the Plan during a major emergency. The project would not be expected to physically block or interfere with a component of the plan, such as an emergency evacuation route. Therefore, less than significant impacts would occur as a result of the potential future development of the Annexation Sites.

Recommended Mitigation 3.11-H. Impair or Interfere with Emergency Response Plans - Annexation Sites: Potential development of a community college or improvements to the John Marsh Home would result in a less than significant impacts on any applicable emergency response plans; therefore, no mitigation is required. However, to minimize the potential that plans would interfere with the City's Emergency Operations Plan, it is recommended that State Parks Department and the CCCCDCD coordinate with emergency response providers to ensure emergency routes would not be impaired. (Less Than Significant Impact).

IMPACT 3.11-I. Exposure to Wildland Fires - Vineyards Project. The State Park will develop a wildfire management plan for the new park and is currently maintaining existing fire breaks and onsite roads for use by emergency vehicles and to act as additional fire breaks. State Parks has notified the Department of Forestry that the new park has been formed, since they are mandated to provide fire suppression of the park. The Vineyards project would develop an on-site fire break between the project and the state park (also for maintenance vehicles, drainage and other uses), which would be maintained by the Homeowners Association or CFD. Residences will include sprinkler systems in each home. This combination of fire prevention and suppression components would result in less than significant wildland fire impacts. (Less Than Significant Impact).

The Vineyards project would be developed in an area that is adjacent to a vast amount of open space. The open space includes an approximately 3,700-acre state park that will remain undeveloped. This park is managed by the State of California, Department of Parks and Recreation, Bay Area District – Diablo Sector. The state park may be susceptible to wildfires ignited by lightning, or accidental disposal of undistinguished cigarettes or other similar accidents. No “day-use” facilities (e.g., barbeque and picnic tables) currently exist on the park and the park is currently still being used for cattle grazing. The state park contemplates day use of the park some time in the future. Day use facilities may be developed, but cannot include “permanent” facilities until a General Plan is approved

for the state park. Wildfires in proximity to the Vineyards project site may travel into urban areas of the project.

Wildfire protection is provided in at least two ways: the State Department of Forestry has fire suppression responsibility for state parks; and the State Parks normally prepares wildfire management plans. Since the park is so new, State Parks has yet to develop a wildfire management plan. However, the state parks wildfire plan would normally include maintenance of existing fuel breaks (Hickey, 2003). This year, the State Parks Diablo Sector disked along Marsh Creek Road to minimize wildfire hazards. While not required this year, the State Parks will also manage the existing onsite roads and fire roads to maintain access to fire equipment (if needed) and to use the roads as additional fire breaks. The State Parks will also contact the State Department of Forestry to ensure that they are aware of the new state park in the event of a wildfire emergency in which fire suppression is needed.

The State Parks Department also recommends that the proposed Vineyards project set development back from the project boundaries by 30 feet, and that fire breaks be provided in this setback area, between the Vineyards project and the state park. The State Park has also indicated a desire for fire breaks to be disked annually.

The Vineyards project proposes a buffer between development and the state park of at least between 15 to 25 feet and often more (varies by location). This buffer will be used for drainage, trails, and access by maintenance vehicles. In addition, this area could be used to access the State Park Land for fire fighting. The Homeowners Association would maintain the buffer area annually. In addition, all homes would be equipped with automatic fire suppression sprinklers inside the homes.

The combination of fire prevention and suppression components would result in less than significant wildland fire impacts.

Mitigation 3.11-I. Exposure to Wildland Fires – Vineyards Project: The Vineyards project would result in less than significant wildland fire impacts and, therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.11-J. Exposure to Wildland Fires – Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. The John Marsh Home and community college sites are currently exposed to wildfires that may occur in the State Park and open space areas. Although no uses currently exist on the community college site, Marsh Creek Road provides an existing fire break on the west side of the community college site and the future Highway 4 Bypass will provide a fire break around the community college site to the north and northeast. As part of the State Park system, the John Marsh Home will be included in a wildfire management plan prepared for the new park and is currently maintaining existing fire breaks and onsite roads for use by emergency vehicles and to act as additional fire breaks. State Parks has notified the Department of Forestry that the new park has been formed, since they are mandated to provide fire suppression assistance to the park. (Less Than Significant Impact).

The State Park may be susceptible to wildfires ignited by lightning, or accidental disposal of undistinguished cigarettes or other similar accidents. No “day-use” facilities (e.g., barbeque and

picnic tables) currently exist on the park and the park, which is not currently open to the public, is still being used for cattle grazing. Day use facilities may be developed, but would not include “permanent” facilities until a General Plan is approved for the state park. Wildfires in proximity to the John Marsh Home could expose that structure to risk of fire.

The East Contra Costa County Fire Protection District (ECCFPD) currently serves both the John Marsh Home and community college site. Moreover, the ECCFPD has a mutual aid and automatic agreement with local and state agencies. In the event of a major emergency, other fire districts, such as the Contra Costa Fire Protection District, the San Ramon Valley Fire Protection District, and the California Department of Forestry, would provide additional fire services to the ECCFPD. Mutual aid would occur when the ECCFPD local fire stations requests local or state fire agencies for assistance. With annexation of the sites, the John Marsh Home and community college would continue to be served by the ECCFPD, with mutual aide provided by other agencies.

Mitigation 3.11-J.1. Exposure to Wildland Fires – Annexation Sites. Potential development of a community college or improvements to the John Marsh Home would result in less than significant wildland fire impacts and, therefore, no mitigation is required. However, to further minimize the potential for a significant impact to occur, the following measures are recommended:

Recommended Mitigation 3.11-J.2. Maintain Acceptable Fire Response Service - Annexation Sites. The CCCCD will coordinate any plans developed for a new community college with the ECCFPD to determine if they can provide services within adequate response times from then-current existing facilities.

If the ECCFPD determines that a new fire station is required to serve the community college, the CCCCD shall work with the ECCFPD and the City of Brentwood to assist with the provision of a site for a new station. Furthermore, the City of Brentwood shall review the new fire station site in accordance with the California Environmental Quality Act (CEQA) to determine if significant impacts would occur. Should it be determined through the CEQA review that significant impacts of a new fire station would result in significant impacts, mitigation measures will be required. (Less Than Significant Impact).

Other Considerations for Fire Response Services – Annexation Sites

Opening the John Marsh Home to the public or development of the community college site would increase the demand for response by fire personnel. The ability of the ECCFPD to serve the volume of potential emergency response calls within their desired response times from existing fire stations would need to be determined by the ECCFPD at the time that a community college plan is developed/approved. Provision of fire service to the community college may result in the need for development of a new fire station that is more proximate to the college to maintain emergency services within their desired response times. The construction of a new fire station could result in environmental impacts such as biological resources, cultural resources or other effects. The potential need for a new fire station and related potential effects of constructing a new fire station would need to be evaluated by the CCCCD, in consultation with the EDDFPD, at the time that community college plans are developed/approved by the CCCCD. To assist with fire response services and to augment

fire personnel needs, the following mitigation measures are recommended for California State Park and CCCCDC consideration.

IMPACT 3.11-K. General Plan Consistency Regarding Safety Element - Vineyards Project: The proposed Vineyards project would be consistent with the General Plans Safety Element policies regarding hazards associated with the use, transport, treatment, and disposal of hazardous substance, and would result in a less than significant impact. (Less Than Significant Impact).

Goal 2 of the General Plan Safety Elements is to “Maintain Brentwood safe from risks associated with hazardous materials. Policy 2.1 of the Safety Element is to “Protect the community of Brentwood from hazards associated with the use, transport, treatment, and disposal of hazardous substances.” As previously discussed, the proposed Vineyards project, as mitigated, would result in less than significant impacts related to hazardous materials. The proposed project would not create unsafe conditions related to hazardous materials, and would not compromise the safety of the community. Therefore, the proposed Vineyards project would comply with the General Plan policies related to hazardous materials.

Mitigation 3.11-K. General Plan Consistency Regarding Safety Element - Vineyards Project: The proposed Vineyards project would not result in any inconsistencies with the goals and policies of the General Plan applicable to hazards associated with the use, transport, treatment, and disposal of hazardous substances and therefore no mitigation is required. (Less Than Significant Impact).

IMPACT 3.11-L. General Plan Consistency Regarding Safety Element - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. The proposed Annexation Sites would be consistent with the General Plan Safety Element policies from hazards associated with the use, transport, treatment, and disposal of hazardous substance, and would result in a less than significant impact. (Less Than Significant Impact).

Goal 2 of the General Plan Safety Elements is to “Maintain Brentwood safe from risks associated with hazardous materials. Policy 2.1 of the Safety Element is to “Protect the community of Brentwood from hazards associated with the use, transport, treatment, and disposal of hazardous substances.” As previously discussed in Impact 3.11.F, above, the proposed Annexation Sites, as mitigated, would result in less than significant impacts related to hazardous materials. Potential development of the community college and improvements to the John Marsh Home would not create unsafe conditions related to hazardous materials, and would not compromise the safety of the community. Therefore, the proposed Annexation Sites would comply with the General Plan policies related to hazardous materials.

Mitigation 3.11-L: General Plan Consistency Regarding Safety Element - Annexation Sites: The Annexation Sites would not result in any inconsistencies with the goals and policies of the General Plan applicable to hazards associated with the use, transport, treatment, and disposal of hazardous substances and therefore no mitigation is required. (Less Than Significant Impact).

IMPACT 3.11-M. Cumulative Impacts – Hazardous Materials: The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in Brentwood, would have the potential to cause significant cumulative impacts to public health and safety resulting from the use, handling and transport of hazardous materials. (Potentially Significant Cumulative Impact).

Neither the Vineyards project nor the potential future development of the Annexation Sites would result in a significant impact from the use of hazardous materials. Any release of hazardous materials would be contained, remediated, and monitored as required by local, state, and federal law. The EIR for the City of Brentwood General Plan Update similarly explains that state and federal regulations regarding management of hazardous materials and wastes and the City's General Plan goals and policies would reduce potential cumulative impacts to a less than significant level.

Construction of the Vineyards project could potentially result in accidental damage to underground pipelines. This is considered a potentially significant impact. The EIR includes mitigation (Mitigation 3.11-C) to reduce this impact to a less than significant level. The EIR concludes that potential development of the Annexation Sites would not cause a significant impact in terms of the potential for accidental releases of hazardous materials.

Therefore, through compliance with federal, state, and local requirements pertaining to hazardous materials, and through the implementation of Mitigation 3.11-C, any contribution of the Vineyards project and the potential future development of the Annexation Sites to potential cumulative hazardous materials impacts would be less than significant.

Mitigation 3.11-M. Cumulative Impacts – Hazardous Materials: Through compliance with federal, state, and local requirements pertaining to hazardous materials, and through the implementation of Mitigation 3.11-C, any contribution of the Vineyards project and the potential future development of the Annexation Sites to potential cumulative hazardous materials impacts would be less than significant. (Less Than Significant Cumulative Impact).

IMPACT 3.11-N. Cumulative Impacts – Other Hazard Impacts: Other hazard impacts (e.g. location on a contaminated site, exposure to wildland fires) are site-specific impacts, not cumulative impacts. (Less Than Significant Cumulative Impact).

One area of the Vineyards project site is known to be contaminated as a result of historic leaks or spills from underground pipelines that previously carried petroleum. As a result, construction workers for the Vineyards project could potentially be exposed to contaminants. The EIR includes mitigation (Mitigation 3.11-E) to reduce any impact to a less than significant level. The EIR concludes that the potential future development of the Annexation Sites would not result in any significant impacts in terms of location on a known hazardous materials site.

These are site-specific impacts, not cumulative impacts, since cumulative development does not affect the issue of whether the Vineyards project or the Annexation Sites are located on a known hazardous materials site.

The EIR also explains that neither the Vineyards project nor the potential future development of the Annexation Sites would pose a significant impact in terms of potential exposure of development to wildland fires. This is also a site-specific impact, since it pertains to potential impacts on the development, not impacts caused by the development on the environment.

Mitigation 3.11-N. Cumulative Impacts – Other Hazard Impacts: These are site-specific impacts, not cumulative impacts; therefore, no mitigation is required. (Less Than Significant Cumulative Impact).

3.12 CULTURAL AND HISTORIC RESOURCES

This section of the EIR evaluates potential impacts to historical and archaeological resources on the Vineyards project site and the Annexation Sites. The analysis is based on phased research conducted by Holman & Associates, Archaeological Consultants. Phase I consisted of records research, archaeological literature review, and a field check of recorded historical and prehistoric archaeological sites within the area. Phase II involved a program of subsurface investigation and testing of a previously recorded archaeological site (CA-CCO-548) within the Vineyards project boundaries. The purpose of the subsurface testing was to define the northern border of the archaeological site and to better understand the make up of archaeological soils.

In August of 2003, Holman & Associates prepared a report that summarized the findings of the Phase I and Phase II investigations. The report is entitled: *A Discussion of Cultural Resources Located Inside the Vineyards at Marsh Creek Project Area, Brentwood, Contra Costa County, California*. The final phase of research involved evaluative test excavations at Site CA-CCO-548. The test excavations were completed to further evaluate the site and to determine if the site would be eligible for nomination to the California Register of Historic Resources (CRHR). On October 17, 2003, Holman & Associates prepared a letter report entitled *Interim Report of CEQA Evaluation of Site CA-CCO-548, Vineyards at Marsh Creek Project*. This Interim Report summarized what Holman & Associates believed would be the major points of their final report, which will be prepared following lab work and complete analysis of recovered data. Copies of the cultural resource reports prepared by Holman & Associates are available at the City of Brentwood, Community Development Department at 104 Oak Street, Brentwood, CA 94513.

3.12.1 ENVIRONMENTAL SETTING

The proposed Vineyards at Marsh Creek project includes development of an approximately 481-acre site east of Concord Avenue and north of Marsh Creek Road, one site and an extension of Fairview Avenue to the south, which would cross Marsh Creek and terminate into Marsh Creek Road. Two additional "Annexation Sites," including the John Marsh Home (located adjacent to the southwest boundary of the Vineyards project site and north of Marsh Creek Road), and the Community College site (located across Marsh Creek Road), are being considered by the City of Brentwood for annexation into the City's municipal boundaries. No development plans currently exist for the Annexation Sites.

Methodology

Literature Review and Consultations

As reported in the Vineyards project history (EIR Section 2.2), the Vineyards at Marsh Creek project site has a lengthy history. However, historic records pertaining to cultural resources on the site are sparse prior to the 1980s. The first cultural resources report evident in the record is an unpublished report produced by Glenn Farris under the direction of the California Department of Parks and Recreation in 1987. Since 1987, cultural records were produced for the project area in association with investigations related to previous proposals to develop Cowell Ranch. These investigations were

prepared by William Self Associates in 1993, and were peer reviewed by Holman & Associates in 1994. The 1993 investigations covered the Vineyards project site and the Annexation Sites.

Cultural resource records and literature were reviewed by Holman & Associates to identify known cultural and historic resources on the proposed Vineyards project site and the Annexation Sites. An archaeological literature review was conducted at the Northwest Information Center (NWIC) located at Sonoma State University to obtain records and to identify archaeological studies done subsequent to the 1993 field inventory work conducted by William Self Associates (and the subsequent peer review of that work done by Holman & Associates).

In addition to the review of existing cultural records and literature, Holman & Associates conducted consultation with individuals associated with the John Marsh Home and others to obtain unpublished information regarding potential historic and prehistoric sites that may exist in the vicinity and potentially extend to the Vineyards at Marsh Creek project site. Holman & Associates conducted consultation with the following individuals:

- ❖ Jeff Fentriss: Archaeologist/Native American Graves Protection and Repatriation Act (NAGPRA) coordinator for San Francisco State University
- ❖ Carol Jensen: Member of the John Marsh Historic Trust
- ❖ Gene Metz: Member of the John Marsh Historic Trust
- ❖ Athena Randolph: Member of the John Marsh Historic Trust
- ❖ Tim Wirth: Trust for Public Land

Field Inspections of Previously Recorded Archaeological/Historical Sites

In June of 2003, Holman & Associates inspected all recorded archaeological and historical sites within the Vineyards project boundaries to assess the adequacy of previously prepared archaeological site records, to determine if further research at these locations was required in order to prepare more accurate archaeological site records, and to assess potential project impacts. A total of four sites (two historic sites and two prehistoric sites) on the Vineyards Project site were inspected.

Archaeological sites in upland areas either occur on the surface or do not exist. Holman & Associates determined that three of the four sites had been adequately surveyed and inventoried surface cultural resources within the upland areas of the Vineyards project site. Therefore, additional surveys of upland areas were not required.

Holman & Associates recommended additional research and testing for one archaeological site (CA-CCO-548) located in the southeast section of the Vineyards project.

Further Investigation of CA-CCO-548 (hereinafter CCO-548)

Holman & Associates conducted additional subsurface investigations at CCO-548 in July of 2003. Subsurface investigation and testing was conducted to define the northern border of the archaeological site and to better understand the composition of archaeological soils. A summary of the work performed by Holman & Associates is presented below.

Backhoe Testing of Commercial Area Outside of CCO-548

A total of 39 trenches were excavated to the north of the recorded map boundaries of CCO-548. This general area is proposed for Village Center land uses by the Vineyards project. These trenches were made to search for potential buried archaeological deposits, to help locate midden associated with CCO-548, and to determine whether significant resources are located outside of CCO-548 borders mapped by William Self Associates in 1995. Trenching commenced in the northern portion of the proposed commercial zone and was extended southwards to the vicinity of CCO-548. Trenching log records are available at the City of Brentwood Community Development Department, 104 Oak Street, Brentwood, CA 94513.

Shovel Test Units at CCO-548

A total of 14 shovel test units (STUs) were dug at CCO-548 to provide information relating to archaeological soils (midden and artifact distribution patterns). Twelve of the test units were located along the periphery of the site to test previous archaeological boundary information. The remaining two STUs were located within the center of the site. This process provided information that was missing from the previous investigations conducted by William Self Associates in the 1990s, which consisted solely of mechanical twist augering and burial removal along the creek bank. The STU data tabulations are contained in the Cultural Resources Report available at the City of Brentwood Community Development Department, 104 Oak Street, Brentwood, CA 94513.

Evaluative Test Excavations at Site CCO-548

Evaluation of archaeological resources under CEQA criteria must be done in the context of the regional archaeological record and research topics and concerns. Therefore, a research design was prepared to form the basis for evaluation of CCO-548 for eligibility for listing in the California Register of Historic Resources (CRHR).

To determine eligibility for the CRHR, Holman & Associates conducted test excavations at site CCO-548. Excavations were only done within the area of the site that would be impacted by the construction of the proposed Fairview Avenue extension (part of the proposed Vineyards project). Ten archaeological test units, each ranging in size from 1 to 2 square meters, were excavated within the area. Excavations were conducted in accordance with standard contemporary archaeological field and recording methods. Approximately 17.675 cubic meters of soil were excavated.

A preliminary evaluation of the archaeological test units was then conducted to determine the significance of Site CCO-548. On October 17, 2003, Holman & Associates prepared an Interim Report summarizing their preliminary findings.

Holman & Associates are currently conducting lab work and analysis of the recovered data from the excavations. A final report will be prepared following the completion of their analysis.

Summary of Findings

Literature Review and Consultations

Although the location of the John Marsh Home (CA-CCO-18) has been the subject of interest by historians and archaeologists throughout the last half of the 20th century, archaeological research inside the project area was limited prior to 1993. The first formal recognition that the area contained archaeological resources was made in an unpublished report by Glenn Farris on the archaeological project conducted for the California Department of Parks and Recreation (CDPR) in 1987 and 1988.

While the Farris report deals mainly with the results of archaeological research conducted at the Marsh House (recorded as CCO-18), his report does present a history of earlier archaeological research done in the area that eventually resulted in the informal recording of CCO-548. In 1961, Richard Clemmer was contracted by the County of Contra Costa to search for the original location of the Marsh Adobe. Utilizing a description from Hendry and Bowman, which located the adobe approximately 125 feet north of the stone house, Clemmer excavated a total of ten 5x5 foot units and four trenches hoping to intersect the building. He did not find any traces of it, but noted up to 4 feet of silt in the area researched, which may have been the result of a lake that was adjacent to the stone house around 1874.

In 1987, Farris dug two shallow trenches approximately 122 feet from the stone house also looking for the adobe, but found nothing; he remarked that in hindsight he wished he had excavated with a backhoe down through the deep alluvial buildup found there. (Farris 1988;10).

The purported adobe location was situated on the east side of Marsh Creek outside of the Vineyards project site. It was not until researchers became interested in the location of the historic Indian village that was known to exist in the area that researchers crossed over the creek to search for it. Farris described the search for the village in his report:

“As late as 1852, Abby Tuck Marsh stated that about twenty Indians lived in huts “a few rods from the door” of the adobe (Abby Marsh letter, May 16, 1852). However, in February 1854 she states, “We have no Indians in our family or near us now” (Abby Marsh letter, February 12, 1854). It is interesting to note that there is no mention of any Indian huts or rancheria on either the Whitcher map of the Rancho de las Meganos, dated October 1853, or the Hays map of November 1853. It has been suggested that the Indians were simply moved across the creek, and indeed, a site has been noted there:

Surface evidence of the aboriginal site was found immediately north of Marsh Creek. Here, about 100 feet from the edge of the creek, the site is clearly recognized by a thin midden deposit and six house pits. A leaf shaped blade of obsidian, 3-1/8" in length by 3/8" wide, and two projectile fragments, one of gray chert and one of obsidian, were recovered from the surface. These, in association with a broken phallic charmstone, suggest some antiquity for the site, although no accurate conclusion can be arrived at from these few pieces. No attempt was made to explore the site in depth.

The midden accumulation measures approximately 150 feet across the north-south axis, by some 275 feet from east to west. (cf. Clemmer 1961)”

Farris went on to discuss the archaeological site and his contribution to its recording:

“Unfortunately, Clemmer did not officially record this site. The recording was finally done in the course of the current investigation. It now bears the trinomial CA-CCO-548 (Fig. 1-1). It has been designated the Pearl site in honor of Pearl Silva, protectress of the John Marsh Stone House.

Clemmer’s remarks do not clarify whether this is the site to which the Indians were removed or not. The mention of a shallow midden development (compared to the 2 feet and more of midden at CCO-18) and the six visible housepits could suggest a late period site; however, the artifacts found would seem to be clearly prehistoric without evidence of historic occupation. Without a test excavation on the site, we will probably not resolve the question. Unfortunately, the land is currently Cowell Corporation property and not owned by the state. (1988:11-12)”

Access to the archaeological resources inside the Cowell property was finally possible when the Cowell Foundation contracted with William Self Associates to conduct archival research and a field survey of the 4,277-acre property in 1993. Plans for development at that time included a mixed residential and commercial development with open space. William Self conducted a Phase I inventory of cultural resources. In keeping with the requirements of Section 106 of the National Historic Preservation Act, the literature review and field study were focused on identifying properties meeting the criteria for eligibility for placement on the National Register of Historic Places.

Volume I of the 1993 Self report identified two prehistoric sites (CCO-595 and CCO-548) and two historic sites (CCO-667H and CCO-675H) that were situated in and around the Vineyards project and the Annexation Sites. These prehistoric and historic sites are described below:

Prehistoric Sites

- ❖ CCO-595 (Vineyards project site): This site was originally recorded by others in 1986, and reported by Farris in 1987, as an apparent habitation site with what appeared to be 24 circular shaped depressions scattered on a knoll. The Self team visited this location in 1993 and failed to find any surface indications of a prehistoric site. No further recommendations were made regarding this site.
- ❖ CCO-548 (Vineyards project site): The Self team visited this site, noting several locations of human bone on the surface, as well as human remains eroding out of the bank of the creek. Stone artifacts were also noted on the surface of this site. A new archaeological site record was prepared for the location, and Self went on to make the following recommendations:

“It is recommended that subsurface testing be conducted at Site CA-CCO-548 to adequately define the site extent, both areal and subsurface, and to define the cultural components of the site. This

will permit the project to effectively plan around the limits of the site, if so desired, and will allow preparation of the Site Record to professional standards.” (Self 1993:84).

Self went on to comment that the general vicinity of CCO-548 should be subject to a program of mechanical subsurface presence/absence testing, noting that there was up to 80 centimeters of silt covering visible midden in the banks of Marsh Creek in this area.

In 1994, William Self Associates returned to the location of CCO-548 to complete at least part of the work they had recommended the previous year. In a report dated 1995, Lori Harrington, William Self, and James Allan described a program of mechanical subsurface augering at the site and the results of the removal of a number of human remains and associated grave goods eroding from the banks of Marsh Creek.

A total of 23 holes were drilled with a 6-inch flight auger in an effort to better define the borders of the archaeological site. Twelve of the 23 holes revealed evidence of archaeological soils reaching depths of perhaps 1-1.5 meters below the surface. Two of the holes yielded additional evidence of human remains.

While Mr. Self had recommended evaluative testing of the site to determine its significance under CEQA and Section 106 guidelines, his work in 1994 focused more on the retrieval and reburial of human remains eroding from the banks of Marsh Creek. After consultation with Mr. Dwight Dutschke who was acting as the Miwok Most Likely Descendant (MLD) at the time, a decision was made to relocate the burials to the east side of the creek near the Marsh House for reburial. The locations of the two suspected burials inside of CCO-548 were left in place.

New, more accurate maps were prepared in 1995 by William Self Associates, showing the locations of the redefined site borders and the approximate locations of the newly discovered human remains. These maps are on file at Sonoma State University, Northwest Information Center (NWIC).

Historic Sites

- ❖ CCO-667H (Vineyards project site): This is a historic well and windmill site with other architectural features. The site was formally recorded, and Self concluded that it did not appear to meet the then current standards of CEQA for significance, and probably did not meet the standards of Section 106 for inclusion on the National Register of Historic Places.
- ❖ CCO-675H (Vineyards project site): This is a cement irrigation canal built around 1913-1914 in the proposed commercial area of the proposed Vineyards project; Self formally recorded this site and concluded that it was probably significant under both state and federal guidelines, but did not recommend any further work.

In addition to the above sites, the John Marsh Home (CCO-18) is located on one of the Annexation Sites, adjacent to the southwest boundary of the Vineyards project site and north of Marsh Creek Road. This structure is listed on the National Register of Historic Places.

The John Marsh Home is one of the major residential structures of mid-19th century Contra Costa County. The house was designed by Thomas Boyd (Pierce and Wood Contractors) and built by John Marsh, a pioneer physician, between 1853 and 1856. Marsh began construction of his house, one of the largest houses to be built on the West Coast at the time. Marsh based the design of the home's architecture on styles common in his native New England, but using native sandstone and brick made on the property. Stylistically, the house is a cross between a Victorian Gothic "cottage" and an Italian Villa. The three-story house (with a lofty off-center tower on the façade) was never important for its interiors. However, the Gothic and Italianate details of the exterior represent a unique fusion of those forms in this still rural section of Contra Costa County (National Park Service [NPS], 1966).

John Marsh, an advocate for the early American settlement of California, in 1837 purchased Rancho Los Meganos (The Sand Dunes), located east of Mount Diablo. Marsh started a cattle ranch and medical business, and the property became a key stopover for immigrants and settlers to the Golden State (NPS, 1966). The John Marsh Home and property sit outside Contra Costa County's "Urban Limit Line."

Field Inspections of Previously Recorded Archaeological/Historical Sites

Holman & Associates conducted an inspection of the previously recorded archaeological and historical sites inside the Vineyards project area in June 2003. The inspections of these sites were conducted to determine any changes that may have occurred since the 1993 study done by William Self Associates, and to determine if there was a need to conduct further research at these locations in order to prepare more accurate archaeological site records. The following is a summary of observations at the four site locations inside the Vineyards project area discussed above:

- ❖ CCO-675H: This site is the cement irrigation canal that was originally recorded by Self in 1993. It is located inside the future commercial area of the Vineyards project. There appears to be no change in its condition since its original recording. William Self Associates formally recorded the site in 1993, and he concluded that it was probably significant under both state and federal guidelines. Based on the previous findings and the findings from the reinspection effort, this site was adequately recorded.

Holman & Associates subsequently inspected the cement irrigation canal and concluded additional archival documentation and photographic recordation to supplement existing documentation should be performed prior to demolition of the canal. Holman & Associates has learned, however, that cement irrigation canals are commonly found throughout Contra Costa County. CCO-675H would not be considered a significant historic resource because pieces of similar canals exist in profusion elsewhere throughout Contra Costa County.

- ❖ CCO-667H: This site consists of a well, windmill, and associated material. It appears to be much as it was when it was originally recorded. Self (1993) commented that this feature probably did not qualify for inclusion on the National Register, nor is it a historical resource under CEQA (see description in CCO-675H, above). The original site record prepared by Self provides adequate documentation for the site features and no further research need be conducted.

- ❖ CCO-595: Self (1993) was unable to locate this prehistoric site during his original inspection of the Cowell Ranch. Holman & Associates surveyors also failed to find any traces of a prehistoric site. Since this site has not been located during the last two site inspections (Self, 1993 and Holman, 2003), designation of this site as a historical resource cannot be confirmed.
- ❖ CCO-548: During the site investigation by Holman & Associates in 2003, this archaeological site was identified inside the borders mapped by Self Associates in 1994. The site is located in the southeastern section of the proposed project site. The archaeological deposit is represented by a silty soil containing abundant amounts of chert flaking material, scant obsidian flakes, fragments of burnt faunal bone, fire affected rock and one small shell fragment. Two or three circular depressions were noted in the southern portion of the site. This deposit appears to extend further into the Vineyards project site. It was recommended that a subsurface investigation be conducted at this location to determine the extent of the deposit.

Further Investigation of CCO-548

The Holman & Associates 2003 subsurface investigation of CCO-548 generally supports earlier boundary information presented by Self. However, the trenching and STU data expands the boundaries of the site slightly to the north to include a scant perimeter scatter of cultural materials, mostly flaked stone items.

One trench (#29) showed possible evidence of cultural materials. Located on the far side of the irrigation canal (CCO-675H), near a transmission tower on the eastern edge of the proposed Village Center commercial area, the trench soils were a silty dark brown between 30 and 90 centimeters (cm) below the surface with distinct flecks of charcoal and pockets of baked clay. One clay concentration visible in the sidewall measured about 15 x 20 cm. No rock or any other cultural materials were observed. Nearby trenches did not have a similar stratum.

Trenches #35, #36 and #37 exhibited a stratum of silty soil and rock (possibly fire affected) from about 30-70 cm below the surface. Although no other cultural materials were noted in the trenches, the presence of what may be fire affected rock suggest that the actual borders of the archaeological deposit do extend beyond the 1995 borders mapped by William Self Associates, and that this area may contain evidence of peripheral cultural activity at this location.

Testing clearly established that appreciable differences in archaeological material occur across the site boundaries. In contrast to the scarce cultural materials identified along the periphery of the site (and in the backhoe trenches), the two STUs in the center of the site revealed a well developed midden deposit, a dark grayish brown anthrosol containing relatively high densities of fire cracked rock (FCR), chert and obsidian flakes, and small pieces of calcined bone.

Though the STUs were not excavated to search for human remains, Native American skeletal remains were identified in two STUs. The find was secured, left in place and the STUs were backfilled. The STUs are located near where William Self Associates recorded human remains in 1995. The STUs and the burial locality identified by Self are located along the periphery of the currently established site boundary, suggesting that human burials may extend an undetermined distance outside the

currently established site in non-midden deposits. Lastly, portions of a cranial vault were observed eroding from the creekbank near the southwest margin of the site.

The Contra Costa County Coroner's Office and the Native American Heritage Commission were notified within an hour of the discovery of human remains on July 8, 2003, to report the discovery of Native American skeletal remains. Ms. Debbie Treadway of the Native American Heritage Commission named Ms. Kathy Perez as the most likely descendant (MLD) for the project. RBF Consulting, on behalf of the City of Brentwood, send a letter to Ms. Perez on July 9, 2003. Ms. Perez replied with a recommendation for the sensitive treatment of the remains, and requested realignment of the proposed Fairview Avenue southern extension. The development team considered the request to realign the roadway but determined that environmental, planning and engineering constraints prohibited roadway realignment. These constraints involved: designing the extension of the roadway to result in a perpendicular intersection with Marsh Creek Road; locating the creek crossing at the narrowest point of the creek to reduce the disturbance to biological resources; and minimizing the engineering and construction costs related to developing the infrastructure to cross over the creek.

Such information was provided in a response letter from RBF to Ms. Perez on July 24, 2003. An invitation was also made to determine if Ms. Perez had additional recommendations for the sensitive treatment of remains. When a second response did not arrive, RBF sent a letter to Ms. Perez on August 13, 2003, to inform her that the proposed project would proceed forward under the professional guidance of Holman & Associates for the sensitive treatment of the human remains. Any human remains that are identified in areas that would be impacted by future development would be exposed utilizing standard archaeological procedure. All skeletal material and associated grave goods would be carefully removed for reburial in an area as close to their original location which will be protected from future disturbance. Burial inventories will be available for inspection at the completion of burial removal.

Evaluative Test Excavations at Site CCO-548

On October 17, 2003, Holman & Associates prepared an Interim Report that provides preliminary findings from the evaluative test excavations at Site CCO-548. The interim report answers the basic questions posed within the Research Design prepared for the excavation. The purpose of answering these questions was to determine if the archaeological site would be eligible for the CRHR. Positive answers to the first two questions generally confirm that the site is eligible for CRHR listing. The answers to the basic questions are presented below:

Research Question 1: Are there subsurface deposit(s) of cultural materials within the impact zone? If so, do these original deposit(s) remain sufficiently intact to allow scientifically valid samples to be extracted and analyzed for comparison with other archaeological assemblages?

Answers: Yes and yes. All of the ten test units contained at least some prehistoric cultural materials. The site appears to have been a habitation (village), perhaps used for some hundreds of years.

Research Question 2: What time span is included in the site? That is, are there materials datable, either by technical means such as Carbon-14 dating or obsidian-

hydration, or by typological seriation, such as projectile points or shell beads and ornaments, that will allow placing the site within a regional chronological framework?

Answer: Yes, such materials were recovered. There are radiocarbon samples, obsidian, and typable artifacts that will allow both absolute and relative dating of the deposit. The time span for the site has not yet been determined. However, the age of the deposit appears to be much earlier than anticipated, probably corresponding to the “Early Period” or “Middle and Upper Archaic Period”, perhaps beginning prior to 2500 years ago (circa 500 B.C.).

Research Question 3: Are prehistoric or protohistoric/contact or early historic deposits present? If so, was the site a contact period and earlier habitation location? Both earlier and later—that is, clearly into the historic (John Marsh ranch) period? Is the site an ethnohistoric and/or historic Native American habitation?

Answer: Only prehistoric deposit appears to be present. Prior to excavations, Holman & Associates had hypothesized that CCO-548 might be the location of historic habitation by Indians who returned from the missions and worked on the John Marsh Ranch. No evidence of this historic habitation was found. Based on artifacts and stratigraphy, the site appears to be single component habitation site from a much earlier period than the historic or ethnohistoric era.

Research Question 4: Does the site contain data related to subsistence strategies and regional economy?

Answer: Yes, data on subsistence strategy and the regional exchange economy were found. Faunal materials were recovered that will identify and allow quantification of various animal species used by the prehistoric inhabitants. Few ground stone items were found, and very little evidence of mortar and pestle use, pointing to an earlier subsistence strategy prior to heavy reliance on acorn use (this also indicates the site is older than originally thought).

Research Question 5: What data does the site contain relative to area, regional, and wider trade networks?

Answer: The site contains obsidian—though relatively scant, still hundreds of pieces—that will furnish dates and data on changing trade patterns through time. The site seems to contain obsidian from a wide horizontal and vertical range, useful for dating and data on trade patterns that may be compared with other assemblages. Another connection with a wider trade network is evidenced by *Olivella* shell beads and abalone ornaments, which tie the site to trade routes that spread throughout California and into the Great Basin. No historic trade goods were recovered.

Research Question 6: Does the site contain human burials outside of the creek bank burials recovered by William Self Associates and evidence of human remains that came to light in mid 1990s WSA research?

Answer: Yes, human bones were found in at least eight of the ten test units. One unit, the last one started, encountered three instances of articulated human bones that may indicate three separate and relatively intact human burials (because time was not available to recover these burials, the location was marked horizontally and vertically for later recovery). The other units recovered isolated or disarticulated human bones ranging from infants to old adults. Human remains appear to occur throughout the midden, but a concentrated cemetery area is not precluded by extant data.

Research Question 7: Regional changes in cultural styles and practices through time are documented. What data does the site contain to further document and help explain these changes?

Answer: Foremost in usefulness are the *Olivella* shell beads, which appear to place the site near the beginning of interregional exchange of such goods based on the types found. Several typable projectile points or fragments were recovered; in concert with temporal information, these will document such changes, but the data is admittedly scant. Ground stone ornaments are also present that will link the site to others in the Delta and Central California. If the burials encountered are found to be relatively intact, data on mortuary practices at an early Central California site may be gained.

Research Question 8: Are there historic archaeological materials present in the impact zone? If so, what is the nature of that component of the deposit? What is its age? How did these materials come to be associated with possible prehistoric cultural deposits? Can this deposit be identified well enough to tie it to use of the Project Area during the previous two centuries? Can it be associated with another historic location or event? What can historic materials tell us about the refuge and acculturation processes the Bay Miwok went through when the area came to be dominated by a foreign culture?

Answer: No historic materials of any note were recovered. The hypothesized connection between the historic Spanish/Mexican era and succeeding American/John Marsh era was not found in the impact zone. Although it is known the Bay Miwok not only continued some cultural traditions after the EuroAmerican onslaught, but returned from the missions to some of the same locations occupied by their ancestors, including the John Marsh Ranch, this site appears to be much earlier than the nineteenth century.

In summary, CCO-548 displays the characteristics required for an archaeological resource to be eligible for the California Register of Historic Resources. Sufficiently intact data is present to date, characterize, analyze, and link the site to others in the region and Central California. Human remains are present and widespread. CCO-548 would be considered under CEQA to be a significant archaeological and historic resource.

3.12.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the State CEQA Guidelines. For the purposes of this project, a cultural impact is considered significant if the project would:

- ❖ Cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines §15064.5;
- ❖ Cause a substantial adverse change in the significance of an historical resource as defined in State CEQA Guidelines §15064.5;
- ❖ Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; and/or
- ❖ Disturb any human remains, including those interred outside of formal cemeteries.

IMPACT 3.12-A. Substantial Adverse Change in the Significance of Archaeological Site CCO-548 - Vineyards Project: The construction of the proposed Vineyards project would involve grading and construction activities within the mapped boundaries of a significant archaeological resource (CA-CCO-548). Disturbance to this resource would result in a significant impact. (Significant Impact).

CCO-548, as mapped by Self (1994) and by Holman & Associates (2003), is located within the southeastern boundaries of the proposed project site. This archaeological site is eligible for listing in the CRHR, and is therefore a significant resource as defined by CEQA.

The Vineyards project would involve the construction of an extension to Fairview Avenue that would pass through CCO-548. The road would be constructed within a 140-foot right-of-way. The construction of the proposed roadway would cause an unquantifiable amount of damage to CCO-548, since the current alignment appears to pass through the approximate center of the site. While the exact nature of earthmoving activities is not known, it is presumed that the site would be damaged during construction of a bridge over Marsh Creek, during grading of the roadbed, preparation of landscaping elements inside the right-of-way, and possibly by trenching for utilities, which would run somewhere inside the right-of-way. Other archaeological deposits located within potential construction staging areas that are outside of the 140-foot road right-of-way could also be damaged during construction activities.

At a June 10th meeting at the Brentwood Planning Department, it was recommended that the most effective method of mitigating impacts to CCO-548 would be to realign the roadway and move it northwards. Discussion at that time between the City representatives, the project sponsors and the project engineer suggested that environmental and other constraints made it infeasible to move the road out of its projected alignment.

A second attempt to realign the roadway was undertaken by the project sponsor after the discovery of human remains at the site during the STU excavation undertaken by Holman & Associates. When the most likely descendant was contacted to solicit recommendations regarding the human remains, Ms. Kathy Perez requested that the road be moved. The project proponent requested the project

engineering team to reevaluate whether or not the roadway could be realigned. However, the proponent's reevaluation of the roadway alignment confirmed that engineering, planning, and environmental constraints would prohibit realignment of the road off of the archaeological site. The specific alignment of Fairview Avenue was based on consideration of substantial design issues such as: designing the extension of the roadway to result in a perpendicular intersection with Marsh Creek Road; locating the creek crossing at the narrowest point of the creek to reduce the disturbance to biological resources; and minimizing the engineering and construction costs related to developing the infrastructure to cross over the creek. Since realignment of the roadway is not a feasible, additional mitigation measures would be required.

Additional midden deposits associated with CCO-548 are also located within an area planned for Village Center uses by the proposed Vineyards project. Grading and construction activities associated with commercial development projects within the surrounding area could impact cultural resources associated with Site CCO-548.

The applicants for the proposed Vineyards project have also been requested by the City of Brentwood to construct a trail that was approved in the City's Master Trail Plan. The portion to be constructed would be located under the tree canopy along the western portion of Marsh Creek in the eastern and southeastern Vineyards project area. The trail segment would be part of the Marsh Creek Trail, which would be extended from its current terminus at Concord Avenue, south along Marsh Creek to the future Village Center/Fairview Avenue intersection. This trail is a component of the City of Brentwood's approved Parks and Recreation Trails Master Plan. The alignment of the trail could potentially cross through the boundaries of CCO-548, and could therefore result in significant impacts to cultural resources.

As described in the methodology discussion, Holman & Associates has already been proceeding with evaluative test excavation, scientific analysis and cataloguing of resource significance for SHPO consideration for CCO-548 within the Fairview Avenue extension area. However, there is a potential that development of the Village Center, the trail, and other landscaping or improvements in the southernmost Vineyards project area may occur within CCO-548. Any potential damage to resources within CCO-548 would result in a significant impact. Implementation of the following mitigation measure would reduce impacts to a less than significant level.

Mitigation 3.12-A. Substantial Adverse Change in the Significance of Archaeological Site CCO-548 - Vineyards Project: Prior to the construction of the Village Center area, the proposed Marsh Creek Trail Segment, and other improvements and construction activities within the southeastern section of the Vineyards site, a program to mitigate impacts to CCO-548 shall be developed and implemented. The mitigation program shall include (but not be limited to) the following actions:

- ❖ **Avoidance: Consultation with a qualified archaeologist during design of projects in the vicinity of CCO-548. To the extent feasible, construction activity shall avoid resources within CCO-548.**
- ❖ **Controlled Data Recovery: If avoidance of resources in CCO-548 is not feasible, a qualified archaeologist shall conduct controlled data recovery of resources. Resources shall be catalogued and analyzed and a final report of findings of**

mitigation data shall be submitted to the Northwest Information Center to demonstrate that mitigation has been completed.

- ❖ **Archaeological Monitoring/Recordation/Removal:** A qualified archaeologist shall monitor all construction related grading and earthmoving activities in the southeastern portion of the Vineyards site. If cultural resources are encountered during construction, all work within the vicinity of the find shall stop immediately. The cultural resource shall be identified, recorded, and/or removed by a qualified archaeologist before grading and trenching activities can recommence in the area of discovery.
- ❖ **If any human remains are discovered, all work within the vicinity of the discovery shall stop immediately and the County Coroner will be notified.**
- ❖ **Human remains that are encountered shall be sensitively treated under the professional guidance of a qualified archaeologist. Any human remains that are identified in areas that will be impacted by construction activities shall be exposed utilizing standard archaeological procedures. All skeletal material and associated grave goods shall be carefully removed for reburial in an area as close to their original location as possible. This area shall be protected from future disturbance. Burial inventories shall be completed and made available for inspection at the completion of burial removal.**

(Less Than Significant Impact)

IMPACT 3.12-B. Substantial Adverse Change in the Significance of Archaeological Resources - Annexation Sites: Approval of proposed general plan amendments and annexations of the John Marsh Home and the Contra Costa Community College site could allow for the future improvements to the John Marsh Home and development of a new community college. However, no improvement/development plans currently exist to determine the extent of potential impacts to cultural resources. Nonetheless, annexation of the sites and approval of general plan amendments may indirectly result in significant impacts to historic and/or archaeological resources on these sites. (Potentially Significant Impact).

Farris prepared the most comprehensive study of the archaeological resources in and around the Marsh House in 1988. The Farris study does not, however, represent a useful inventory of resource deposits. CCO-18 remains a wide-spread resource that extends north, east and west of the Marsh House at an unspecified distance. It could potentially be a part of the CCO-548 site, forming a large, contiguous archaeological site established from thousands of years of native settlements. The original Marsh adobe, searched for on two occasions, also may still exist in some form north of the house and in proximity to the proposed Fairview Avenue extension.

Annexation and general plan amendments on the two Annexation Sites may allow for improvements to be made at the John Marsh Home (i.e., new parking area, interpretation center inside the House) and development of a new community college. Development plans for the community college do not currently exist. However, such plans may be prepared after annexation and general plan amendments on the site are approved. Potential development of a community college could result in significant

impacts to historical and/or archaeological resources on the site. In addition, improvements to the John Marsh Home, such as grading for a parking area, could result in significant impacts to historical and/or archaeological resources on the site. Therefore, mitigation measures would be required.

Mitigation 3.12-B.1. Substantial Adverse Change in the Significance of Archaeological Resources – John Marsh Home: Prior to the approval of any site improvement plans for the John Marsh Home, the California Department of Parks and Recreation (CDPR) shall require a cultural resource analysis of the site. The inventory and analysis shall include a review of available records from the Northwest Information Center at Sonoma State University and field surveys. Subsurface presence/absence exploration shall be conducted on any portion of the site on which new construction is proposed and that has been determined to have potential archaeological resources. If the subsurface explorations determine the need for additional archaeological testing and analysis to determine the significance of identified resource, then a detailed subsurface excavation program shall be developed and implemented by a qualified archaeologist. All discoveries shall be accurately mapped, recorded, and analyzed.

If significant archaeological resources are found at the site, future improvements to the property shall be located and designed to avoid or minimize impacts to these resources to the extent feasible. If avoidance is not feasible, and if data recovery through excavation is the only feasible mitigation for impacts to such resources, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared, approved and adopted by the CDPR prior to any construction activities. The recovered information shall be deposited with the Northwest Information Center at Sonoma State University. (Less than Significant Impact).

Mitigation 3.12-B.2 Substantial Adverse Change in the Significance of Archaeological Resources – Community College Site: Prior to approval of a development plan for a community college, the Contra Costa Community College District (CCCCD) shall require a cultural resource inventory and analysis of the site. The inventory and analysis shall include a review of available records from the Northwest Information Center at Sonoma State University and field surveys. If preliminary research indicates the potential for archaeological resources, CCCCC shall require a program of mechanical subsurface presence/absence testing within the construction areas for the campus. If the subsurface explorations determine the need for additional archaeological testing and analysis to determine the extent and significance of resources, then a detailed subsurface excavation program plan shall be developed and implemented by a qualified archaeologist. All discoveries shall be accurately mapped, recorded, and analyzed.

If significant archaeological resources are found at the site, future improvements to the property shall be located and designed to avoid or minimize impacts to these resources. If avoidance is not possible, and if data recovery through excavation is the only feasible mitigation for impacts to such resources, a data recovery plan,

which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared, approved and adopted by CCCC prior to any construction activities. The recovered information shall be deposited with the Northwest Information Center at Sonoma State University.

(Less Than Significant Impact)

IMPACT 3.12-C. Substantial Adverse Change in the Significance of An Historic Resource (CCO-675H) – Vineyards Project: A cement irrigation canal (CCO-675H) was identified on the Vineyards project site in an earlier study conducted by William Self Associates. Current information indicates that this resource is commonly found throughout Contra Costa County and is not, therefore, considered a significant historical resource. (Less Than Significant Impact).

A cement irrigation canal (CCO-675H), originally recorded by Self in 1993, is located within the future commercial area of the proposed Vineyards project. Self indicated that the resource might be eligible for inclusion on the National Register of Historic Places and the California Register of Historic Resources. Holman & Associates has learned, however, that cement irrigation canals are commonly found throughout Contra Costa County. CCO-675H would not be considered a significant historic resource because pieces of similar canals exist in profusion elsewhere throughout Contra Costa County. Holman & Associates concluded that site CCO-675H has been adequately recorded and that no further work is required at the site until specific plans for development in the area are available. Nonetheless implementation of the following mitigation measure is recommended.

Recommended Mitigation 3.12-C. Substantial Adverse Change in the Significance of An Historic Resource (CCO-675H) – Vineyards Project: Supplemental archival and photo recordation of resources shall be conducted prior to issuance of grading permits. The documentation shall be submitted to Northwest Information Center at Sonoma State University. (Less Than Significant Impact).

IMPACT 3.12-D. Substantial Adverse Change in the Significance of An Historic Resource (CCO-667H) – Vineyards Project: An old well, windmill, and associated materials (CCO-667H) are located on the Vineyards project site. These resources would be demolished to construct the proposed project. However, these structures are not considered significant historical resources. (Less Than Significant Impact).

The proposed Vineyards project would demolish an existing well, windmill, and associated materials. These structures were analyzed and recorded by William Self Associates in 1993. The Self report indicated that these features are not historical resources under CEQA, meaning they are not associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; are not associated with the lives of persons important in our past; do not embody the distinct characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual or possess high artistic values; or they have not yielded, nor are they likely to yield, information important in prehistory or history. Holman & Associates affirmed the conclusion of the Self report, noting that the structures are not historically significant.

Based on the documentation in the Self report, and the findings from the reinspection by Holman & Associates, these sites have been adequately recorded and documented. Impacts to these structures would not be considered significant.

Mitigation 3.12-D. Substantial Adverse Change in the Significance of An Historic Resource (CCO-667H) – Vineyards Project: The well and windmill on the Vineyards project site are not significant; therefore no mitigation is required. (Less Than Significant Impact)

IMPACT 3.12-E. Substantial Change in the Significance of An Historic Resources - Annexation Sites: Potential future improvements to the Marsh House annexation area (e.g., restoration of the house and the addition of a new parking area) would have the potential to benefit the preservation and educational experience of historic resources in the area. (Potentially Beneficial Impact)

The annexation of the John Marsh site would allow the City of Brentwood to provide public services to the property. Although no plans exist for specific improvements to the site, it is anticipated that improvements would include renovation of the structure and perhaps inclusion of a new interpretative center inside the structure. A small parking area could be developed to allow for public visitation to the House.

All building renovation efforts would be conducted in compliance with the Secretary of Interior's Standards and Guidelines for the Rehabilitation of Historic Buildings. Modifications to a historic resource in compliance with these standards and guidelines are generally considered to be less than significant impacts. The restored home would provide opportunities for cultural interpretation and education on the interwoven and rich history of John Marsh, Native Americans, rancheros, and many pioneers who have passed through the area over the years (Torlakson, Feb. 2003). Moreover, after renovation, the House may be used for school field trips or other scheduled public events, thereby enhancing the site's historic value to the area. Therefore, the annexation of the site could result in beneficial impacts related to cultural resources.

Mitigation 3.12-E. Substantial Change in the Significance of An Historic Resources - Annexation Sites: Potential improvements to the John Marsh Home would result in beneficial impacts to historic resources in the community and, therefore, no mitigation is required. (Potentially Beneficial Impact).

IMPACT 3.12-F. Destroy Unique Paleontological Resource or Site – Vineyards Project. Existing records for the Vineyards site have not indicated paleontological resources on the Vineyards site and no such resources were indicated during subsurface investigations on the southern portion of the Vineyards site. (Less Than Significant Impact).

Review of archaeological records for the Vineyards project site did not reveal the presence or potential presence of paleontological sites or resources on the property. Holman & Associates conducted subsurface investigation of archaeological sites on the southern portion of the Vineyards project site. No indications of paleontological resources were revealed during these subsurface investigations.

Mitigation 3.12-F. Destroy Unique Paleontological Resource or Site – Vineyards Project. The Vineyards project would not result in significant impacts to unique paleontological resources; therefore no mitigation is required. (Less Than Significant Impact).

IMPACT 3.12-G. Destroy Unique Paleontological Resource or Site – Annexation Sites. While no known unique paleontological resources exist on the Annexation Sites, future development of the sites have the potential to results in adverse effects to paleontological resources. (Potentially Significant Impact).

Review of archaeological records for the Vineyards project site did not reveal the presence or potential presence of paleontological sites or resources on the property. No subsurface investigation of archaeological or paleontological resources was conducted on the Annexation Sites during the preparation of this EIR.

Potential future improvements on the John Marsh Home are anticipated to be minimal, including restoration of the House, inclusion of an interpretative center inside the House, and development of a small parking lot for public use. If water and sewer line improvements needed to be made to allow for public service use, then perhaps some limited subsurface work could occur.

Plans also do not exist for development of a community college. However, it is anticipated that plans will be developed for a new community college campus on the college site and that up to 30 acres of site disturbance could occur.

Unless and until precise development plans are approved for the John Marsh Home or the community college site, it cannot be conclusively determined whether paleontological resources exist on potential development areas of the Annexation Sites. Therefore, a potentially significant impact would result.

Mitigation 3.12-G. Destroy Unique Paleontological Resource or Site – Annexation Sites. Prior to the approval of grading permits for either the John Marsh Home or the community college, a records search for paleontological resources shall be conducted by the California Department of Parks and Recreation for the John Marsh Home, and the CCCCD for the community college site.

If records indicate that potential resources exist in the vicinity of planned grading areas for either the John Marsh Home or the community college, then subsurface investigation shall be conducted to determine the presence or absence of paleontological resources.

If it is determined that paleontological resources are present in areas that would be potentially graded by either project, then controlled data recovery shall be conducted prior to any grading the vicinity of the resource. Resources shall be catalogued and analyzed. A final report of findings of mitigation data shall be prepared and recorded.

(Less Than Significant Impact).

IMPACT 3.12-H. Undiscovered or Unknown Resources – Vineyards Project: Given the nature of the site, it is possible that previously undiscovered or unknown sites could be uncovered during construction of the project. (Potentially Significant Impact)

Development of the proposed Vineyards project will require site grading and trenching activities. To the extent that these activities intrude into native soil (as opposed to imported fill material), the possibility exists that archaeological deposits could be encountered. Uncovering prehistoric resources could result in the damage or destruction of significant cultural resources. Therefore, mitigation measures would be required.

Mitigation 3.12-H. Undiscovered or Unknown Resources – Vineyards Project. In the event that prehistoric traces are encountered during construction (human remains, artifacts, or concentrations of shell, bone, rock, or ash), all construction within a 50-meter radius of the find shall be stopped immediately. The City of Brentwood shall be notified, and an archaeologist shall be retained to examine the find and make appropriate recommendations.

If human remains are discovered, the County Coroner shall be immediately notified. There would be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the conditions specified in Section 15064.5(e) of the CEQA Guidelines are satisfied. In particular, if the coroner determines that the remains are Native American and not subject to County authority, the Coroner shall notify the Native American Heritage Commission, which shall attempt to identify descendants of the deceased Native American. The descendants shall then have an opportunity to make recommendations regarding the treatment or disposal of the remains.

If the City of Brentwood and the archaeologist determine that the archaeological find is a significant historical resource, the resource will be avoided and preserved in place if possible. If avoidance is not possible, and if data recovery through excavation is the only feasible mitigation for impacts to such resources, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared, approved and adopted by the City prior to any excavation being undertaken. The recovered information will be deposited with the Northwest Information Center at Sonoma State University.

These measures shall be described on the Contractor's notes of all applicable plans. Inclusion of these measures shall be verified by the City of Brentwood Community Development Department prior to the issuance of grading permits. (Less Than Significant Impact)

With the implementation of the above mitigation measure, potential impacts to undiscovered or previously unrecorded resources on the proposed Vineyards site would be considered less than significant.

IMPACT 3.12-I. Disturbance to any Human Remains – Annexation Sites: Given the nature of the Annexation Sites, it is possible that undiscovered or unknown human remains could be uncovered during construction of any future development. (Potentially Significant Impact).

Future development of the Annexation Sites potentially could include the construction of a new community college campus east of Marsh Creek Road, and the extension of the proposed Fairview Avenue to the edge of the campus. This area was originally surveyed by Self in 1993 with negative findings. No additional field surveys of the proposed development area and connecting roadway were required for this EIR, since development is not currently proposed in the area. However, the usefulness of the visual field survey done by Self & Associates has been questioned by recent research. Holman & Associates consulted with Mr. Jack Meyer of the Anthropological Studies Center regarding the community college site. Mr. Meyer is a specialist in geo-archaeological research, who helped produce a report on the potential for the discovery of buried archaeological resources in and near the Marsh Creek riparian zone for the Los Vaqueros Dam project.

Holman & Associates was originally concerned about the potential for the discovery of archaeological resources near Marsh Creek which might be buried under silt or alluvial materials; evidence of this silting is reported by Self (1993) at CCO-548, and by Farris (1988) north of the Marsh House where the original adobe is thought to be located. Consultation with Mr. Meyer led to the backhoe presence/absence testing program completed inside the proposed Vineyards project commercial zone, which led to the discovery of a potentially buried prehistoric resource on the eastern edge of the property.

Mr. Meyer speculated that prehistoric archaeological resources might be found on the surface at the junction of the hills and flood plains (the exact location of CCO-548), but that they may be buried under as much as several meters of silts and alluvial materials adjacent to the creek drainages and in the flood plains to the north and east of it. Of specific interest is the proposed alignment of Fairview Avenue and the community college campus, which are located in areas where silting may have buried archaeological sites in the past. Thus, a potential exists for the discovery of a significant cultural resource during construction of any developments or improvements to the Annexation Sites.

Mitigation 3.12-I. Disturbance to any Human Remains – Annexation Sites. A qualified archaeologist shall monitor all future grading and earthmoving activities within the Annexation Sites. In the event that prehistoric traces are encountered during construction (human remains, artifacts, or concentrations of shell, bone, rock, or ash), all construction within a 50-meter radius of the find shall be stopped immediately, the CDPR notified (for finds on the John Marsh Home site) and/or the CCCCDC notified (for finds on the community college site), and an archaeologist retained to examine the find and make appropriate recommendations.

If human remains are discovered, the County Coroner shall be immediately notified. There would be no further excavation or disturbance of the site or any nearby area reasonable suspected to overlie adjacent human remains until the conditions specified in Section 15064.5(e) of the CEQA Guidelines are satisfied. In particular, if the coroner determines that the remains are Native American and not subject to County authority, the Coroner would notify the Native American Heritage

Commission, which would attempt to identify descendants of the deceased Native American. The descendants would then have an opportunity to make recommendations regarding the treatment or disposal of the remains.

If the CDPR and/or the CCCCD determine that the archaeological find is a significant historical resource, the resource will be avoided and preserved in place if possible. If avoidance is not possible, and if data recovery through excavation is the only feasible mitigation for impacts to such resources, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared, approved and adopted by the CDPR and/or CCCCD prior to any excavation being undertaken. The recovered information will be deposited with the Northwest Information Center at Sonoma State University.

These measures shall be described on the Contractor's notes of all applicable development plans. Inclusion of these measures shall be verified by the CDPR and CCCCD prior to the issuance of grading permits. (Less Than Significant)

IMPACT 3.12-J. Cumulative Impacts – Historical, Archeological, and Paleontological Resources: No cumulative impacts are anticipated because impacts to these resources are site-specific. (Less Than Significant Cumulative Impact).

Impacts to the historical, archeological, and/or paleontological resources that may be affected by the actions studied in this EIR are site-specific. Cumulative impacts to such resources would occur if two or more projects affected the same resource – e.g., if two projects affected the same historic structure or archeological site. There is no evidence to indicate that another planned or probable future project in the vicinity of the Vineyards project or the Annexation Sites would affect any of the specific resources analyzed in this EIR for the Vineyards project or the Annexation Sites. Therefore, no cumulative impact on those resources is anticipated.

Moreover, the EIR for the City of Brentwood General Plan Update explains that the goals and policies in the General Plan would minimize any potential impacts from cumulative development in the Brentwood Planning Area to historic, archeological, and paleontological resources to a less than significant level. That EIR also explained that – by implementing measures from the City's General Plan, open space elements of general plans from other jurisdictions, community design guidelines that reflect and incorporate features of the community's historic and architectural heritage, and sound environmental review practices – cumulative impacts to cultural resources in the east Contra Costa County area and in the western San Joaquin Valley would be mitigated to a less than significant level.

Mitigation 3.12-J. Cumulative Impacts – Historical, Archeological And Paleontological Resources: No significant cumulative impacts are anticipated, therefore, no additional mitigation beyond the project-specific mitigation identified above for impacts to cultural resources is required. (Less Than Significant Cumulative Impact).

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3.13 PUBLIC SERVICES

This section of the EIR addresses the environmental effects of the proposed Vineyards at Marsh Creek project and the potential annexation and General Plan amendments for the John Marsh Home and community college site (collectively, Annexation Sites) on governmental facilities necessary for police protection, fire protection and emergency medical services, schools, and park services and other facilities. Where appropriate, mitigation measures are implemented to minimize or eliminate potentially significant impacts, which could occur due to the proposed Vineyards project or Annexation Sites.

This environmental analysis is based on consultation with affected public service providers. The following public service providers were consulted:

- City of Brentwood Police Department
- East Contra Costa Fire Protection District
- Brentwood Union School District
- Liberty Union School District
- Contra Costa Water District
- East Bay Regional Parks District
- California Department of Parks and Recreation.
- City of Brentwood Parks and Recreation Department
- American Medical Response

These public agencies and departments provided relevant information through correspondence and telephone communications. Other resources, references, and documents used to prepare this section of the EIR are identified both within this section and Section 10.0, References Cited and Personal Communications.

3.13.1 ENVIRONMENTAL SETTING

Existing Fire Protection and Emergency Medical Services

East Contra Costa Fire Protection District

The East Contra Costa Fire Protection District (ECCFPD) provides fire protection and first-response medical emergency services to the cities of Brentwood and Oakley, and the unincorporated areas of Bethel Island, Byron, Discovery Bay, Knightsen, and Marsh Creek-Morgan Territory. The Vineyards at Marsh Creek project site, the John Marsh Home, and the community college site are located within the service area of the ECCFPD.

The ECCFPD was created on September 12, 2002 by the unification of the Bethel Island, East Diablo, and Oakley Fire Protection District's. The new organization was created to allow a more cost-effective application of existing resources, and to provide a higher level of fire protection and emergency medical response services to the area. The Contra Costa County Board of Supervisors governs the ECCFPD.

The ECCFPD has nine existing fire stations with fire suppression capabilities (Station numbers 51, 52, 54, 57, 58, 59, 93, 94, and 95). The ECCFPD's staff includes a total of 117 uniformed and non-

uniformed personnel, including full time and paid on-call officers. Dispatch and communication services continue to be provided by the Contra Costa County Fire Protection District's dispatch center on a contractual basis with ECCFPD. The ECCFPD's administration offices are located at 134 Oak Street in the City of Brentwood.

Fire Station #52, which was built in 2001, would provide fire protection services to the proposed Vineyards project site. Fire Station #52 is located at 201 John Muir Parkway, approximately 1.5 miles north of the proposed project site. At any given time, Station #52 is staffed with a captain, a fire engineer, and a fire fighter. Station #52 is equipped with what is known as a Type 1 Structural Response Fire Engine and a Type 3, Wildlands Engine. Station #52 is also the satellite "wing" office for the City of Brentwood Police Department.



View of ECCFPD Fire Engine Truck



View of ECCFPD Fire Truck

Fire Emergency Calls

In 2002, the ECCFPD responded to approximately 5,183 emergency calls within the entire fire protection District. Approximately 78 percent of the calls were for emergency medical services. Only 2 percent of the calls were for structural and non-structural fires. (ECCFPD Incidents website <http://www.eccfpd.org/2002.htm>).

Existing Response Time Goals

The ECCFPD has a goal to respond to all emergency calls within five minutes of travel time for emergencies that are within 1.5 miles from the station. The ECCFPD has a total response time goal (which include the time for dispatch, travel, and setup) of five minutes. According to Fire Assistant Chief Dave Wahl, the ECCFPD does not have current response time statistics. The City of Brentwood General Plan includes similar, but slightly different response time goals in Policy 1.3.2:

- 1.3.2-Fire Services: The Fire Services District shall strive to meet the following standards: a maximum driving time of three minutes and/or 1.5 miles from the first due station; three paid firefighters per apparatus in all central business district, urban, and suburban areas; and a total response time (dispatch plus running and set-up time of five minutes in central business district, urban, and suburban areas for 90 percent of all emergency responses.

ISO Rating

The City of Brentwood has an Insurance Services Office (ISO) rating of Class 4. A Class 4 ISO rating indicates that the Fire District is strategically placed throughout the City, and has more than adequate personnel, equipment, and expertise to serve the current population.

Existing Mutual Aid and Automatic Agreement

The ECCFPD has a mutual aid and automatic agreement with local and state agencies. In the event of a major emergency, other fire districts, such as the Contra Costa Fire Protection District, the San Ramon Valley Fire Protection District, and the California Department of Forestry, would provide additional fire services to the ECCFPD. Mutual aid would occur when the ECCFPD local fire stations requests local or state fire agencies for assistance. The ECCFPD mutual aid agreement is consistent with Policy 2.2, *Disaster Planning*, of the Safety Facilities section of the General Plan, which states “Plan for City and citizen actions to respond effectively to and recover from a disaster.”

Existing Emergency Medical Services

The firefighters and engineers of the ECCFPD are licensed Emergency Medical Technicians (EMTs). EMTs are trained to provide basic emergency medical services, such as Cardio-Pulmonary Resuscitation (CPR) and splint application. Paramedic services in the City of Brentwood are provided by a private agency called the American Medical Response (AMR). Medical emergencies are treated at Sutter Delta Medical Center, which is located in the City of Antioch at 3901 Lone Tree Way.

The City of Brentwood approved the construction of the John Muir Medical Center in March of 2003 for medical services. Phase 1 of the John Muir Medical Center project will be to construct the medical center. The center will provide medical offices and in-out patient facilities. Phase 2 of the John Muir Medical Center project will be to construct the hospital facility, which is scheduled to be completed by the fifth year of construction. The proposed John Muir Medical Center would be located on Balfour Road, off of the State Highway 4 Bypass.

Existing Police Protection Services

Brentwood Police Department

The City of Brentwood Police Department provides police protection services to the City of Brentwood. Currently, the Brentwood Police Department (BPD) is operating with the following personnel: 48 sworn officers, 8 administrative staff, 6 community service officers, 3 reserve officers, 22 Brentwood Active Citizen Uniformed Patrol (BACUP) volunteers, and 7 police chaplains. The number of sworn officers in Brentwood has increased 106 percent since 1992.

According to the California Department of Finance, the City of Brentwood had a population of approximately 33,000 persons in January of 2003. The Police Department currently has 48 sworn officers and three reserve officers. Therefore, there are approximately 1.5 officers per 1,000 residents in the City. This police officer-to-population ratio achieves the standard established in Brentwood General Plan Policy 1.3.1 *Police Services*, which states “[c]apital facilities and personnel shall be provided sufficient to maintain a force level of at least 1.5 officers per 1,000 population.”

In addition to traditional enforcement services, the BPD provides an extensive list of activities and services designed to enhance the public safety, law enforcement, and the community. These services include Youth and Family Services, the BACUP volunteer program, Drug Abuse Resistance Education, Neighborhood Watch, National Night Out, Red Ribbon Week, Vacation Watch, Bicycle Helmet Program, Operation Identification, Business Crime Alert, Safe Roads Program, Explorer Scout Program, Police Activities League, Chaplain's Program, and Trigger Lock Giveaway Program.

Police Station

The BPD headquarters is located at 100 Chestnut Street. Additional administrative offices are located at 8440 Brentwood Boulevard, Suite F. To replace the existing police headquarters the former US Print facility is being retrofitted for the BPD and is scheduled for occupancy at the end of summer of 2004. The new police headquarters will be relocated on Brentwood Boulevard, and is anticipated to serve the proposed project site. The recent addition of Fire Station #52, located at 201 John Muir Parkway, also provides a satellite "wing" for police services. Station #52 would also provide police services to the proposed Vineyards project and to the Annexation Sites.

Existing Response Time Goals

According to the Brentwood General Plan, the Brentwood Police Department has the goal to respond to all emergency calls within three minutes. The response time goal for non-emergency calls varies depending on the severity of the emergency and the call volume.

California Highway Patrol

The goal of the California Highway Patrol (CHP) is to ensure safety and provide law enforcement services to the public as they use California's highway transportation system. Highways that are patrolled by the CHP near the Vineyards project site and the Annexation Sites include Highway 4 and Highway 160. In addition, the CHP contracts with the Contra Costa County Sheriff's Department to provide patrol services on some unincorporated roads in the County. Roads that are patrolled by the CHP near the project sites include Marsh Creek Road and Concord Avenue. The CHP also assists local police and sheriffs during emergencies when requested.

Contra Costa County Sheriff's Department

The Contra Costa County Sheriff's Department provides law enforcement services to the rural and unincorporated areas of the County. The Sheriff's Department would assist the Brentwood Police Department during major emergencies when requested by the Brentwood Police Department. These situations are infrequent, but nonetheless occur. These infrequent calls do not substantially impact the service responsibilities of the Sheriff's Department.

Existing Schools

The Vineyards project would be served by two public school districts: the Brentwood Union School District and the Liberty Union High School District. The Brentwood Union School District and the Liberty Union School District both operate on a modified traditional calendar. Classes begin in early August with a ten-day break in October and another ten-day break in March. These breaks are in addition to the traditional holidays, which include a two-week winter break. Summer break is

approximately eight weeks beginning with the second week in June. The Vineyards project would also be served by community colleges within the Contra Costa Community College District.

Brentwood Union School District

The Brentwood Union School District would provide elementary and middle school educational services to the proposed Vineyards project. The R. Paul Krey Elementary (Krey Elementary) School would serve the project. Krey Elementary (grades K-5) is located at 190 Crawford Drive and is approximately 1.5 miles northeast of the proposed Vineyards project site. The current student population at Krey is 569 students. The school is operating at 71 percent of its total capacity (800 students).

According to Barbara Tittle, Construction & Facilities Assistant for the Brentwood Union School District, a new middle school is expected to open in 2007. This new middle school would serve the proposed Vineyards project site. The name and location of the school and the student enrollment capacity is being discussed at this time. Until the new middle school is completed, the existing Edna Hill Middle School (grades 6, 7, and 8) could serve the project. Edna Hill Middle School is located at 140 Birch Street, approximately 2.5 miles northeast of the proposed Vineyards project site. The current student population of Edna Hill is 851 students. The school is operating at 85 percent of its total capacity (1,000 students).

Liberty Union High School District

The Liberty Union High School District would serve the proposed Vineyards project. The District operates Liberty High School, which is located at 850 Second Street and is approximately 2.5 miles northeast of the proposed project site. The ninth through twelfth grade student population at Liberty High is currently 2,122 students. The school is operating at 91 percent of its total capacity (2,322 students).

Liberty Union High School District's Strategic Facilities Plan for 2003 to 2008 includes the construction of the new Heritage High School. Heritage High School is scheduled to open in 2005, and would serve the high school population of the Vineyards project.

Existing Funding Mechanisms

School districts can levy and collect school facility fees from new development projects to generate revenue to accommodate the students associated with regional growth. Currently, state law limits schools fees to \$1.72 per square foot for new residential developments, and \$0.28 per square foot for commercial or industrial development projects (State Government Code § 65995). State legislation authorizing and limiting school facilities fees specify that the fees constitute "full mitigation" of impacts to schools. Because East Contra Costa County has a two-tiered school district system where two school districts serve a given area, developer fees that are collected from new development projects, are split between the high school district (i.e., Liberty Union) and the elementary/middle school district (i.e., Brentwood Union).

Senate Bill 50 (SB 50), also known as the Leroy F. Greene School Facilities Act of 1998, allows school districts to charge a fee on new residential construction as an alternative to the standard

residential developer fee, if certain requirements are met. The alternative fees are referred to as Level 2 and Level 3 fees. Level 1 and Level 2 fees may exceed the standard “Level 1” fee up to an amount justified through the preparation of a “school facilities needs analysis” in accordance with Government Code § 65995.6 and the related fee calculation requirements of §§ 65995.5 and 65995.7. In 1999, the Brentwood Union School District prepared a School Facilities Needs Analysis in accordance with State Law. The School Facilities Needs Analysis provides factual basis for the District to consider and adopt alternative school fees that may be collected from residential development in accordance with § 17072 of the Education Code and § 65995.5, 65995.6, 65995.7, and 66000 *et. seq.* of the Government Code. The School Facilities Needs Analysis is updated annually. The most recent Draft School Facilities Needs, dated March 25, 2003, concludes that Level 2 and Level 3 fees would be \$3.34 and \$6.68, respectively, per square foot of residential development.

Contra Costa Community College District

The Contra Costa Community College District (CCCCD) is the eighth largest multi-community college district in California. The District boundaries include almost all of Contra Costa County. The district currently includes Contra Costa College, Diablo Valley College, Los Medanos College, Brentwood Center (an outreach campus of Los Medanos College), the Regional Training Institute, and San Ramon Valley Center (an outreach campus of Diablo Valley College). The main campus of Los Medanos College is located in the City of Pittsburg. The College operates an extension program in the City of Brentwood.

The CCCCDC recently entered into an agreement to purchase property to the east of the Vineyards project site, which is one of the Annexation Sites addressed in this EIR. Approximately 30 acres of the site may be developed by the CCCCDC with a new community college for local residents and surrounding towns. The College District anticipates the potential for student enrollment at the new community college site to reach approximately 5,000 by the year 2012.

Existing Parks

Parks within the general vicinity of the Vineyards project site are managed by four different agencies. The Brentwood Parks and Recreation Division manages a number of parks within the Brentwood City limits. These parks are primarily urban or neighborhood parks. The East Bay Regional Parks District manages parks throughout the East Bay Area, including a number in the Antioch/Brentwood vicinity. These parks are less “urban” and provide open space and outdoor recreation opportunities, such as horseback riding, hiking, and nature viewing. Adjacent to the proposed Vineyards project site is the new state park, which is managed by the California Department of Parks and Recreation. The state park is a historical park, which also offers some hiking and nature viewing opportunities. The John Marsh Home site is part of the almost 4,000 acres acquired by the State of California in November 2002.. The California Department of Recreation also manages Mount Diablo State Park, a 20,000-acre park located approximately 7 miles west of the Vineyards project site. The Contra Costa Water District (CCWD) manages the Los Vaqueros Reservoir, which is located just south of the Vineyards project site and serves as water storage for the CCWD and also provides recreational opportunities such as hiking, boating and fishing. The locations of major regional park facilities in relation to the Vineyards at Marsh Creek site are illustrated in Exhibit 3.13-1.



Source: East Bay Regional Park District (1997)



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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Regional Park Facilities

Exhibit 3.13-1

Brentwood Parks and Recreation Division

The City of Brentwood Parks and Recreation Division (PRD) manages 24 parks within the City and four trail systems. The PRD is also responsible for guidance and implementation of the Parks and Recreation Master Plan, which is a vision plan and implementation strategy for acquiring park land; constructing parks, trails, and recreational facilities; preserving open space; and administrating, managing and maintaining parks and recreational resources (Exhibit 3.13-2).

The parks within the vicinity of the proposed Vineyards project site include Apple Hill Park (approximately 1.5 miles from the project site) Balfour Guthrie Park (approximately 1 mile from the Vineyards project/Annexation Sites) and Lake Park (approximately 1 mile from the Vineyards project/Annexation Sites). The City's Aquatic Complex and Skate Park is also in the vicinity of the Vineyards project/Annexation Sites. The Apple Hill Park and Balfour-Guthrie Park both offer soccer fields, baseball fields, basketball courts, as well as play areas and picnic tables. The other 22 parks throughout the City offer similar amenities (City of Brentwood, May 2003).

The City of Brentwood has approximately 98 acres of park facilities. Based on the City's projected 2003 population of 33,000 persons, the City currently has approximately 3 acres of park space per 1,000 persons. The current amount of park space does not achieve the City's park standard established in General Plan Park Acreage Policy 1.75, which states "[t]he City shall provide at least five acres of parkland citywide per 1,000 population to accommodate recreation open space needs."

East Bay Regional Parks District

The East Bay Regional Parks District (EPRPD) manages four parks in the vicinity of the Vineyards project and the Annexation Sites. These parks include the Black Diamond Mines Regional Preserve, the Morgan Territory Regional Preserve, the Round Valley Regional Preserve, and the Vasco Cave Regional Preserve (refer to Exhibit 3.12-2).

These areas are generally unimproved and are classified as regional preserves by the EPRPD. The EPRPD defines regional preserves as areas of outstanding natural and/or cultural features that are protected for their intrinsic value as well as for the enjoyment and education of the public. The primary objective of the regional preserve designation is to preserve and protect significant natural and cultural resources (EPRPD, 1996).

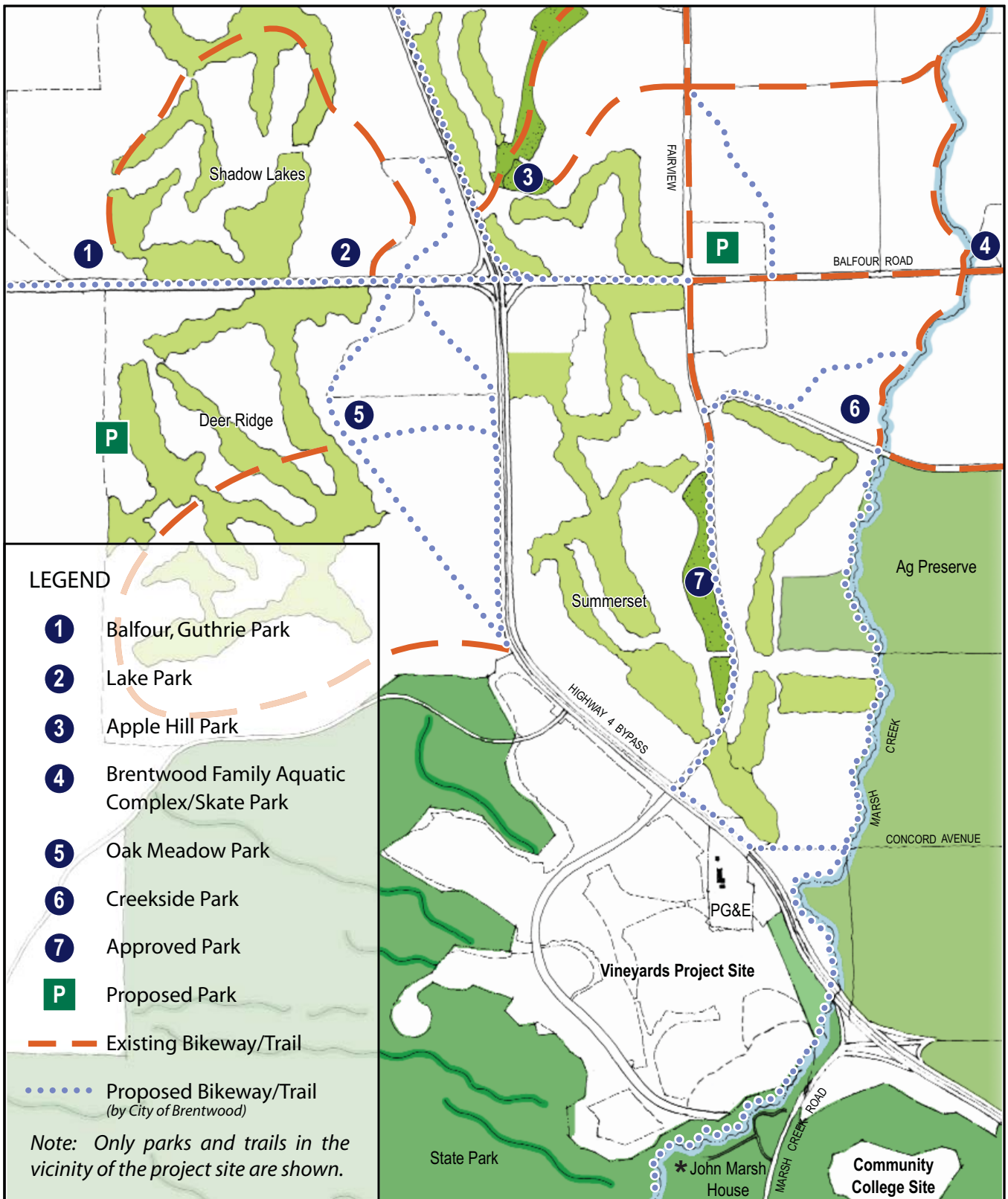
In addition to serving as areas of preservation for significant natural and cultural resources, these regional preserves provide passive recreational opportunities such as horseback riding, hiking, and nature viewing. Mountain biking is also permitted in certain areas.

California Department of Parks and Recreation

The John Marsh Home, located on one of the Annexation Sites, is located directly adjacent to and south and west of the Vineyards project site. The State Department of Parks and Recreation has owned the John Marsh Home and the surrounding 14 acres since 1978. The John Marsh Home dates back to 1856 and is currently in a state of disrepair. The home is currently closed to the public. John Marsh, an advocate



John Marsh Home; circa 1866



Source: Hart Howerton (2003) and City of Brentwood Parks, Trails, & Recreation Master Plan (2003)



Not to scale

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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Local Parks and Trails

Exhibit 3.13-2

for the early American settlement of California, purchased Rancho Los Medanos in 1837. Marsh started a cattle ranch and medical business, and the property became a key stop-over for immigrants to the Golden State.

Approximately 4,000 acres of land adjacent to the John Marsh Home was conveyed to the California Department of Parks and Recreation in November 2002, for state park uses. This land was previously part of the historic Cowell Ranch, a 4,907-acre ranch that was owned by Samuel Henry Cowell. The 4,000 acres are near the approximately 20,000-acre Mount Diablo State Park. The preservation of the majority of the Ranch as a state park, combined with the Mount Diablo state park and intervening parklands, constitutes an approximately 24,000-acre expanse of protected wild habitat, scenic open space and recreation opportunities for residents of Contra Costa County. Currently, the new 4,000-acre state park, including the John Marsh Home, is mostly open grassland, and provides opportunities for passive recreation and open space enjoyment.

The state park properties are located outside Contra Costa County's recently modified Urban Limit Line (ULL), which will protect the area from future urban development and provide open space and potential parklands for the fast-growing East Bay region.

The California Department of Parks and Recreation plans to develop a master plan for the new state park. The park may include a restored John Marsh Home, over 4,000 acres for recreation and habitat preservation, and opportunities for cultural interpretation and education. The state park will provide cultural education on the interwoven and rich history of John Marsh, Native Americans, rancheros, and many pioneers who have passed through the area over the years (Torlakson, Feb. 2003). State funding has not yet been budgeted for the park improvements. However, the park can compete for state funding from a pool of money budgeted to the California Department of Parks and Recreation.

Contra Costa Water District

The Contra Costa Water District (CCWD) manages the Los Vaqueros Reservoir and 20,000 acres of surrounding watershed. The Los Vaqueros Reservoir can store up to 100,000 acre-feet of water, which is used by the CCWD for municipal purposes. In addition to serving as a municipal water storage facility, the reservoir and surrounding watershed lands provide recreational opportunities for residents of Eastern Contra Costa County and adjacent areas.

The Los Vaqueros area provides over 55 miles of trails available for hiking, biking, and horseback riding. Fishing is also permitted in the reservoir. In addition, the CCWD operates the Los Vaqueros Interpretative Center where the public and school programs are held regarding the history of the area, the ecology of the reservoir and watershed lands, and the construction of the dam (CCWD, 2003).

Relevant Goals, Objectives, and Policies

Brentwood General Plan, 2001-2021

The Brentwood General Plan contains a number of policies that direct the future and long-term use of the project sites. While the Vineyards project and Annexation Sites are not within the City's municipal boundaries, they are within the General Plan "planning area." General Plan policies relevant to other environmental issues are incorporated into those sections and are not duplicated in the Public Services discussion. Goals and policies relevant to public services resources are found in

the Community Facilities Element of the General Plan. The following policies are relevant to the Public Services section of this EIR.

Goal 1 – Quality Facilities:

The Quality Facilities goal of the Community Facilities Element seeks to, “provide high quality community facilities to serve Brentwood’s diverse existing and future needs.” The specific policies to accomplish this goal that are applicable to the proposed project are listed below.

Police and Fire Services

- ❖ Policy 1.3 – Public Safety (Police and Fire): Police and fire services shall be provided in a manner which ensures that adequate response times are maintained for emergencies.
- ❖ 1.3.1 – Police Services: Capital facilities and personnel shall be provided sufficient to maintain a force level of at least 1.5 officers per 1,000 population.
- ❖ 1.3.2 – Fire Services: The Fire Service District shall strive to meet the following standards: a maximum driving time of three minutes and/or 1.5 miles from the first-due station¹; three paid firefighters per apparatus in all central business district, urban and suburban area; and a total response time (dispatch plus running and set-up time) of five minutes in central business district, urban and suburban areas for 90 percent of all emergency responses.
- ❖ 1.3.3 – Coordination: The City shall work with the Fire District and Police Department for the review and comments on all development plans.
- ❖ 1.3.4 – Fees: The City shall ensure that impact fees are collected and shall work with the developers to establish mitigation measures to ensure that adequate facilities will be available.
- ❖ 1.3.5 – CIFP: The City shall require all new developments to participate in a Capital Improvement Financing Program and shall make the required findings of 17.805 of the Brentwood Zoning Ordinance (Phased Development Plan) so that the development projects will not create excess demand for police and fire services.

School Services

- ❖ Policy 1.2 – School Facilities: Adequate school facilities shall be provided in a timely manner in accordance with the pace of development.
- ❖ 1.2.1 – Fees: The City shall ensure that school facility impact fees are collected and shall work with the developers and the school district to establish mitigation measures to ensure that adequate school facilities will be available.

Park Services

- ❖ Policy 1.7 – Park Planning: A variety of park facilities shall be provided in a timely manner in accordance with the pace of development.

¹ The Brentwood General Plan text says “1/5 miles from the first-due station”. According to Jeff Zilm, Senior Planner for the City of Brentwood, the “1/5 miles” is a typo and should read “1.5 miles”.

- ❖ 1.7.2 - Coordination: The City shall work with the Brentwood Parks and Recreation Department and the East Bay Regional Parks District to coordinate development with the adequate provision of neighborhood and regional park facilities. The City shall consider implementation policies that support the dedication and/or acquisition of land for regional park and trail purposes, as identified in the East Bay Regional Park District Master plan, as a condition of new development.
- ❖ 1.7.3 – Fees: The City shall ensure that park facility impacts fees are collected.
- ❖ 1.7.4 – CIFP: The City shall require all new developments to participate in a Capitol Improvement Financing Program and shall make the required findings of Section 17.805 of the City Zoning Ordinance (Phased Development Plan) that the project will not create excess demand for park facilities.
- ❖ 1.7.5: Park Acreage: The City shall provide at least five acres of parkland citywide per 1,000 population to accommodate recreational open space needs. The City shall consider the effects of new development on park facilities and recreation programs and condition them appropriately.
- ❖ 1.7.7 - Maintenance Costs: The City shall pursue all available sources for maintenance of parks, including but not limited to user fees, assessment districts, and homeowners' associations.

Section 17.805 of the Zoning Code: Phased Development Plan

The purpose of Section 17.805 of the Brentwood Zoning Code is to regulate residential development in an orderly manner to ensure that necessary public facilities and services are available when development occurs, to bring facilities and services up to appropriate standards when development occurs, and to ensure that new development pays its fair share of adding facilities and services. Before a new residential project can be constructed, the City manager must make various findings for the project. Findings related to public services include:

- ❖ The project will not create a demand for other public services, as determined necessary by the City Council, greater than those services available to Brentwood at the time of application; or if those other public services need expansion, the project will bear its fair share of the cost of the expanded facilities and such expansion will be completed prior to issuance of a certificate of occupancy for any dwelling unit in the project.
- ❖ The project will not create a demand for educational facilities, as determined to be necessary by the City Council, greater than those facilities available to Brentwood at the time of application; or if these educational facilities need expansion, the project will bear its fair share of the cost of the expanded facilities, and the necessary facilities will be available prior to issuance of a certificate of occupancy for any dwelling unit in the project.

3.13.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Significant impacts related to public services were determined from criteria stated in *Appendix G of the State CEQA Guidelines*. For the purposes of this project, a public service impact is considered significant if the project would:

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 following public services:

- ❖ fire protection
- ❖ police protection
- ❖ schools
- ❖ parks
- ❖ other public facilities

IMPACT 3.13-A. Change in Governmental Facilities to Maintain Acceptable Fire and Emergency Medical Response Services - Vineyards Project: The proposed Vineyards project would increase the demand for fire and first-response emergency medical services. Only two percent of 2002 calls to the East Contra Costa Fire Protection District (ECCFPD) were for structural and non-structural fires. Seventy-eight of the calls were for emergency medical response. All of the Vineyards project site can be reached from Fire Station # 52 within a 4-minute driving time. The East Contra Costa Fire Protection District (ECCFPD) has adequate facilities to serve the proposed project within an acceptable response drive time and no new facilities would be required. (Less Than Significant Impact).

The proposed project would increase the demand for fire and first-response emergency medical services from the ECCFPD. The increase in demand would be generated by increased potential for future automobile accidents, health related problems, potential structural fires, and other emergencies that could occur at the Vineyards site and its vicinity.

Station #52 currently receives a relatively high call volume due to its proximity to the Summerset active adult community, which is located near the Station and north of the Vineyards project site. Assistant Chief Larry Hein of the ECCFPD anticipates that the proposed Vineyards active adult project would similarly generate a relatively high call volume due to the age and related medical needs of the residents. Moreover, Assistant Chief Hein indicated a concern that the southern portion of the Vineyards project site would be located outside of a 1.5-mile radius of Station #52.

With regard to fire response, year 2002 ECCFPD incident records indicate with only two percent of calls were for structural and non-structural fires. A much greater (78 percent) of the calls were for emergency medical services.

Planned roadway improvements in the Vineyards project vicinity (please refer to Section 3.4, Transportation and Circulation) and completion of Segment 3 of the State Highway 4 Bypass would improve emergency access to and within the Vineyards project vicinity. John Muir Parkway and Concord Avenue will allow vehicle speeds up to 40 miles per hour, and the SR 4 Bypass will allow speeds up to 65 miles per hour. Consequently, most of the Vineyards project site could be reached within 3 to 3-½ driving time from Station # 52, with the entire site reachable within a four-minute drive time (Exhibit 3.13-3). Therefore, ECCFPD would be able to adequately respond to emergencies

that may occur within the Vineyards project site and the need for additional governmental facilities would not be required.

The proposed Vineyards “Village Center” and residential buildings would be constructed in accordance with the fire standards and the requirements of the California Code of Regulations (CCR) Title 24 (California Building Code) and the City of Brentwood Fire Code (Chapter 15.16 of the City of Brentwood Municipal Code). Compliance with these building codes would require buildings to be designed and built with adequate fire protection measures including fire alarms, sprinklers, extinguishers, hydrants, adequate water supply, fire walls, and other related fire protection measures.

Since a great majority of the ECCFPD calls were, in 2002, for emergency medical services, the Vineyards project could substantially increase these types of calls. An Emergency Medical Services (EMS) station requires minimal space (e.g., 1,000 s.f.) and could be accommodated within existing or planned structures.

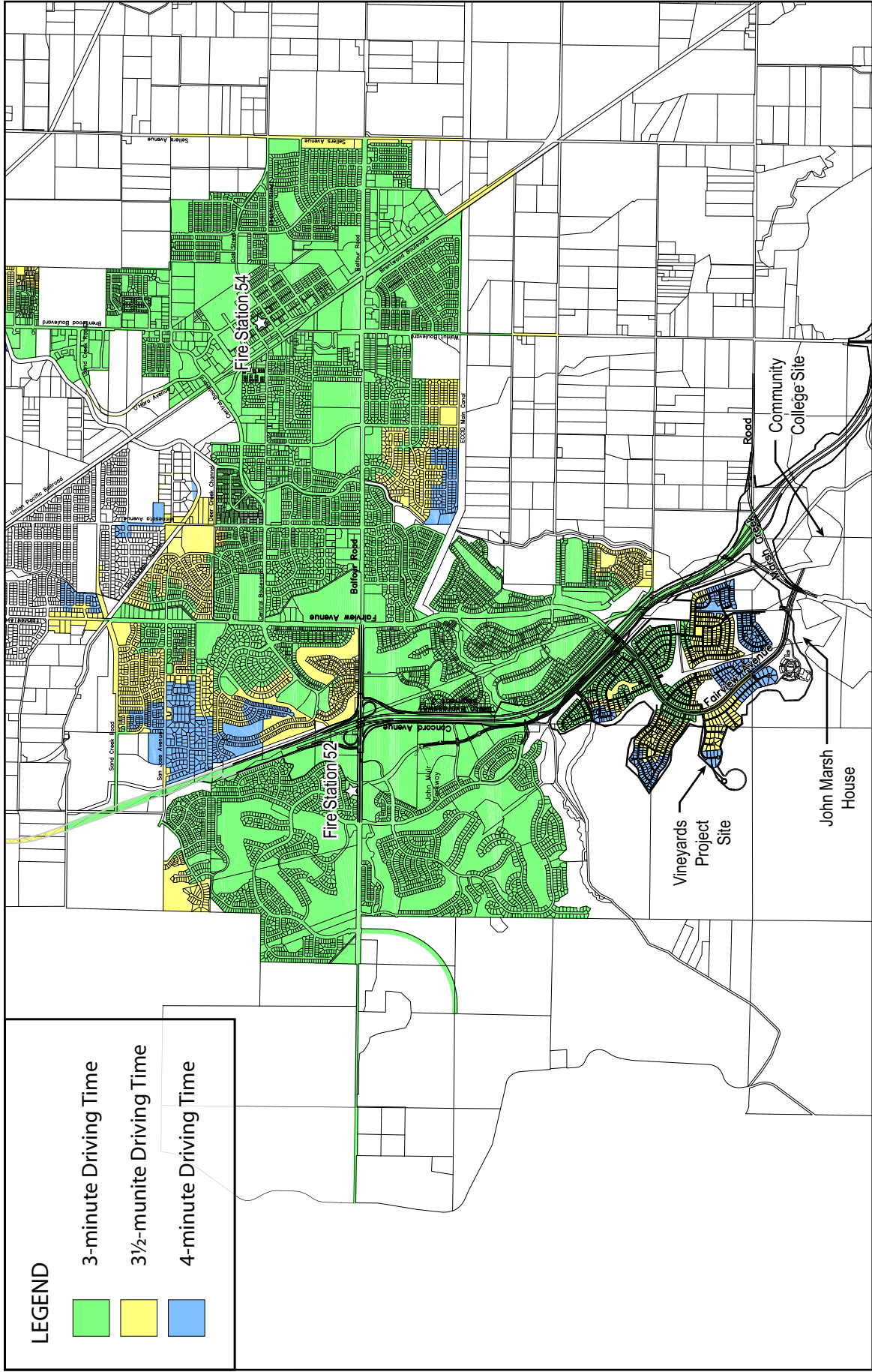
Recommended Mitigation Measure 3.13-A.1. Maintain Acceptable Fire And Emergency Medical Response Services – Vineyards project: Although a fire station is not required pursuant to this CEQA analysis, the proposed Vineyards project has identified three alternative sites (approximately 1 acre each) for the future development of one fire station. These three alternative sites are located: 1) in the Village Center, 2) on the southeast corner of Fairview Avenue and the Realigned Concord Avenue, and 3) on the east side of Fairview Avenue, south of the ECCID canal. An offer of dedication will be made to the ECCFPD to exercise on one of these sites. The offer will expire at the end of five years. If, at the end of five years, the ECCFPD has not begun construction of a new fire station on the selected site, the offer will terminate. In addition, the Vineyards Project would construct an EMS station. The offer of a one-acre site for a future fire station and construction of an EMS station would reduce impacts to a less than significant level.

Recommended Mitigation 3.13-A.2. Reduce On-site Delays in Providing Fire and Emergency Medical Response - Vineyards project: Prior to approval of the first Final Map for the proposed project, the project applicant should coordinate with the ECCFPD to address access delay issues at neighborhood entry gates and EVAs. Opticom devices, or similar devices, should be included in Project Design.

Other Considerations for Fire and Emergency Medical Response Services – Vineyards Project

The City of Brentwood will require the Vineyards project to pay its fair share of costs required for the necessary expansion of fire services and facilities (see Zoning Code Section 17.805). Necessary facilities and equipment required for the Vineyards project may include new fire trucks and equipment, and additional fire personnel.

Fair share costs may be met by payment of development fees via participation in an assessment district and a Capital Improvement Financing Program. It is anticipated that a new Community Facilities District (CFD) would need to be formed by the City of Brentwood to fund additional public services to the Vineyards project. A new CFD would be expected to be similar in nature to existing CFD No. 3



Source: City of Brentwood (2003)



Not to scale

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR
Fire/Emergency Medical Response Time Map

10/27/03 JN 35-100230

Exhibit 3.13-3

(which does not currently include the Vineyards project area). The new CFD would provide facilities for open space, police, flood/storm drain and schools, as well as services for fire and police protection, open space, flood/storm drain, and schools. Compliance with Brentwood Municipal Code § 17.805.005.A.6, including participation in any CFD formed for the project, would provide funding that could be directed towards fire personnel, facilities, and equipment that will, in turn, be available to meet the service needs of project area.

IMPACT 3.13-B. Change in Governmental Facilities to Maintain Acceptable Fire and Emergency Medical Response Facilities - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These improvements would not substantially increase the need for governmental facilities to maintain acceptable fire and emergency medical response facilities (Less Than Significant Impact). The potential development of a community college, however, would increase the demand for fire protection and emergency medical response times. The ability of the ECCFPD to serve the community college from existing stations within their desired response times will not be known unless/until a community college is approved at that site and, therefore, a potentially significant impact would result. (Potentially Significant Impact).

The ECCFPD currently serves the John Marsh Home and the community college site. It is anticipated that the ECCFPD would continue to service the Annexation Sites if they are annexed into the City of Brentwood. Moreover, if the Vineyards project is approved, an EMS station would be included in that project and would be used to assist in responding to emergency medical services locally. Annexation and general plan amendments alone would not directly change the existing uses of the site beyond current conditions.

Plans for development of a community college or for improvements to the John Marsh Home do not currently exist. However, these plans may be developed in the future. Interior improvements made to the John Marsh Home would be made in accordance with California Building Code requirements. Moreover, the ECCFPD would review and approve renovation plans regarding, for example, fire sprinkler locations and fire flow rates. New improvements to the John Marsh Home site are anticipated to be minimal including, for example installation of a parking lot or addition of an interpretive center inside the House. After renovations are made to the John Marsh Home, it is anticipated that the House, which is not currently open to the public, would be opened to the public as a historic park facility. Moreover, after renovation the House may be used for school field trips or other scheduled public events.

Potential development of a community college could increase the demand for fire protection and emergency medical response times. Additional personnel or equipment may be needed by the ECCFPD if a community college plan is developed and approved by the community college district.

The community college would be constructed in accordance with the fire standards and requirements of CCR Title 24 (California Building Code), which are approved by the State Fire Marshall, and fire provisions of the City of Brentwood Fire Code (Chapter 15.16 of the City of Brentwood Municipal

Code). Typically, when a community college is approved, the community college district would coordinate with the ECCFPD regarding issues such as fire protection site access, hydrant location, fire flow throughout the college site, and the need for/location of knox boxes. These issues would be approved by the ECCFPD and are subsequently approved by the State Fire Marshall during final review of the community college plans. Compliance with the California Building Codes and ECCFPD requirements would ensure that buildings are designed and built with adequate fire protection measures. These fire protection measures would reduce the potential for structural fires at the community college site.

The ability of the ECCFPD to serve the volume of potential emergency response calls within their desired response times from existing fire stations would need to be determined by the ECCFPD at the time that a community college plan is developed/approved. Provision of fire service to the community college may result in the need for development of a new fire station that is more proximate to the college to maintain emergency services within their desired response times. The construction of a new fire station could result in environmental impacts such as biological resources, cultural resources or other effects. The potential need for a new fire station and related potential effects of constructing a new fire station would need to be evaluated by the CCCCD, in consultation with the EDDFPD, at the time that community college plans are developed/approved by the CCCCD.

Mitigation 3.13-B. Change in Governmental Facilities to Maintain Acceptable Fire and Emergency Medical Response Facilities - Annexation Sites. The CCCCD will coordinate any plans developed for a new community college with the ECCFPD to determine if they can provide services within adequate response times from then-current existing facilities.

- ❖ If the ECCFPD determines that a new fire station is required to serve the community college, the CCCCD shall work with the ECCFPD and the City of Brentwood to provide a site for a new station. Furthermore, the City of Brentwood shall review the new fire station site in accordance with the California Environmental Quality Act (CEQA) to determine if significant impacts would occur. Should it be determined through the CEQA review that significant impacts of a new fire station would result in significant impacts, mitigation measures will be required to reduce those effects to a less than significant level.

IMPACT 3.13-C. Change in Governmental Facilities to Maintain Acceptable Police Services-Vineyards project: The Vineyards project would increase the population of the City of Brentwood and increase the demand for police protection services. With the replacement of the main police facility (within the next 4 years) and the existing satellite “wing” police station located at Fire Station #52, the Brentwood Police Department would have adequate facilities to serve the proposed project. (Less Than Significant Impact).

The proposed Vineyards project would increase the demand for police protection services. The increase in demand would be generated by potential crimes and misdemeanors that could occur at the site, including traffic violations, thefts, vandalism, loitering, and assaults.

According to the California Department of Finance, the City of Brentwood had a population of approximately 33,000 persons in January of 2003. The Police Department currently has 48 sworn officers and three reserve officers. Therefore, there are approximately 1.5 officers per 1,000 residents in the City. This ratio achieves the standard established in General Plan Policy 1.3.1-*Police Services*: “[c]apital facilities and personnel shall be provided sufficient to maintain a force level of at least 1.5 officers per 1,000 population.”

The proposed Vineyards project would increase the population of the City and would thereby reduce the officer-to-population ratio beyond existing conditions. The proposed project would result in the construction of up to 1,600 new residential units and a 200,000 square foot congregate care facility. Approximately 1,100 of the units would be for active adults and 150 would be apartments for Active Adults. It is assumed that the average household size for these units would be approximately 1.89 persons per unit (General Plan EIR). The remaining 350 units would include 150 executive lots and 200 multifamily units. It is assumed that the average household size for these units would be approximately 2.89 persons per unit (General Plan EIR). It is assumed that the congregate care facility would house up to 1 person per 1,000 square feet (General Plan EIR). Based on these assumptions, the proposed project would generate a population of approximately 3,575 persons:

1,100 active adult units	x	1.89 persons/unit =	2,079 persons
150 senior apartment units	x	1.89 persons/unit =	284 persons
150 executive lot units	x	2.89 persons/unit =	434 persons
200 apartment units	x	2.89 person/unit =	578 persons
+ 200,000 SF of Congregate Care	x	1 person/1,000 SF =	200 persons
Total			3,575 persons

The Brentwood Police Department currently has approved plans to construct a new police station. The police station is scheduled to open within the next four years. District 4 also operates a satellite wing police station at Fire Station #52. With the replacement of the main police facility (within the next four years) and the existing satellite “wing” police station located at Fire Station #52, the Brentwood Police Department would have adequate facilities to serve the proposed project, as well as other parts of the City.

Based on this population increase, the Brentwood Police Department would need five to six additional police officers for the Vineyards project population increase to maintain the City’s standard of 1.5 officers per 1,000 residents (3,575 persons x 1.5 officers/1,000 persons = 5.4 officers).

Other Considerations for Fire and Emergency Medical Response Services

According to Chief Davies of the Brentwood Police Department, personnel, equipment and resources would be added to serve the project area as it is being developed. The Brentwood Police Department has expressed concerns that gated access points with codes may create time delays for police vehicles responding to emergencies at the site. To improve response time, the police department recommends opticom devices to provide activated gate access to all gated communities and facilities.

The City normally assesses development impact fees on projects to fund capital improvements and equipment required to provide police protection services. In accordance with § 17.805.005.A.6 of the

City of Brentwood Zoning Code, the project requires residential projects to bear their fair share of costs for the necessary expansion of police services and facilities. Fair share costs may be met by payment of development fees, participation in an assessment district, or in a capital improvement financing program. Compliance with Brentwood Zoning Code § 17.805.005.A.6, and participation in the new CFD that is anticipated to be formed, would fund police personnel, facilities, and equipment to be available to meet the service needs of project area, and would maintain the officer to population standard established by the City (1.5 officers per 1,000 residents). The payment of development impact fees would help reduce potential impacts caused by the Vineyards project.

The Brentwood Police Department participates in the development review process to ensure that crime prevention measures are incorporated into the design of new development projects. Crime prevention measures may include a project's inclusion of security alarms, surveillance equipment, security guards, adequate lighting for parking lots and walkways, and landscaping and building design requirements to minimize potential crime areas. These measures (if required by the Police Department) would help reduce the proposed project's impact on police protection services.

Based on the above discussion, the proposed project has adequate facilities, but has the potential to have an adverse effect on the Brentwood Police Department services. The following mitigation measures would reduce impacts to less than significant levels.

Recommended Mitigation 3.13-C. Police Services-Vineyards project: As a condition of project approval, all access points to gated communities shall be designed with Opticom activated gates (or similar devices) to reduce emergency response delays. (Less Than Significant Impact)

IMPACT 3.13-D. Change in Governmental Facilities to Maintain Acceptable Police Services-Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home do not exist. However, these plans may be developed in the future. Development of a potential community college would result in less than significant impacts to police facilities because the College District would provide a campus police facility for the community college. (Less Than Significant Impact).

Annexation of, and General Plan amendments for, the community college site and the John Marsh Home would expand the Brentwood Police Department's service area by approximately 100 acres. The annexation of these properties would not directly result in physical changes to the environment and would not substantially increase the demand for police protection services beyond existing conditions.

The Contra Costa Community College District (CCCCD) may develop plans for a new campus on one of the two Annexation Sites. The potential future development and use of the community college would increase the demand for police protection services. Based on 1999 to 2001 Police statistics from the CCCCCD Police Department, crimes that typically occur on campuses in the district include theft, burglary, assault, robbery, and automobile theft.

The CCCCCD currently has a police department that provides police services on its college campuses. The Police Department provides 24-hour coverage to ensure campus safety. According to Dan Henry, Vice President of Los Medanos College, for example, the College District Police Department would

provide police protection services to the future college campus, if and when it is developed. If warranted by student enrollment and demand for police services, full-time police officers may be stationed at the college. Accordingly, development of the college site is not likely to result in the need for additional facilities for police services.

The John Marsh Home is anticipated to be renovated and used as a historic park site in the future. Potential improvements may include new parking areas and the development of an educational/interpretive center inside the House. The California Department of Parks and Recreation would provide police services to the state park and the John Marsh Home. The potential future uses of the John Marsh Home would not substantially increase the demand for police services beyond existing conditions. Accordingly, improvements to the John Marsh Home are not likely to result in the need for additional facilities for police services.

Mitigation 3.13-D. Change in Governmental Facilities to Maintain Acceptable Police Services - Annexation Sites: The CCCCD would provide its own police facility and officers to serve the campus. And, the potential future uses of the John Marsh Home would not substantially increase the demand for police services beyond existing conditions. Additionally, the John Marsh Home would be served by the California Department of Parks and Recreation. Therefore, development or improvements to the Annexation Sites are not likely to result in the need for additional police facilities (Less Than Significant Impact).

IMPACT 3.13-E. Change in Governmental Facilities to Maintain Acceptable School Service - Vineyards project: The proposed Vineyards project would generate approximately 371 students. An increase in students would increase the demand for additional school facilities in the project area. However, the project would be subject to state-mandated fees, which would be used to pay for additional school facilities as needed. (Less Than Significant Impact).

The proposed Vineyards project would increase the population of school-aged children and thereby increase the demand for school facilities and services. According to the City of Brentwood General Plan EIR, the student generation rates for the City are 0.57 students per residential unit for kindergarten through eighth grade and 0.49 students per residential unit for grades 9-12. The proposed Vineyards project would construct up to 1,600 residential units and a 200,000 congregate care facility. The congregate care facility and approximately 1,250 of the units would be provided for senior citizens and retired active adults without school-aged children. These units would not allow children to reside in these communities and would, therefore, not impact school facilities. Based on the student generation rates listed above, the remaining 350 residential units would generate approximately 371 students. Approximately 200 of these students would be in kindergarten through eighth grade, and approximately 171 would be in ninth through twelfth grade.

The kindergarten through eighth grade students would attend Krey Elementary School and the new middle school being planned by the District. If the middle school is not completed when the homes are occupied, those children could possibly attend Edna Hill Middle School. Krey Elementary and Edna Hill Middle schools currently have a combined remaining capacity of 380 students. Therefore, the project would not likely exceed the capacity of the schools. However, cumulative developments within the District boundaries would contribute additional students and would likely result in

overcrowding at the two schools. A new middle school is planned to open in 2007, which would relieve any potential temporary overcrowding at Edna Hill Middle School.

High school students living in the project area would attend Liberty High School until 2005. Liberty High School currently has a remaining capacity of 200 students. The 171 students generated by the proposed project would not likely exceed the capacity of the school, and it is unlikely that 171 high school students would be generated by the project before 2005. However, cumulative developments within the District boundaries could contribute additional students, resulting in potential overcrowding at the high school. However, a new high school (Heritage High School) is scheduled to open in 2005, which would alleviate any potential temporary overcrowding effects. Heritage High School would serve the proposed Vineyards project.

The combined effects of this project and other projects in the area could contribute to overcrowding and the need for other additional school facilities. The project sponsor would be required by State law to pay school fees in the amount of \$0.31 per square foot of commercial space and \$1.93 per square foot of residential space as mitigation for school facilities impacts. In addition, project sponsors would be required to pay alternative fees adopted by the Brentwood Union School District. As previously described, SB 50 allows school districts to charge a fee on new residential construction as an alternative to the standard residential developer fee, if certain requirements are met. The alternative fees are referred to as Level 2 and Level 3 fees and may exceed the standard "Level 1" fee up to an amount justified through the preparation of a school facilities needs analysis". In 1999, the Brentwood Union School District prepared a School Facilities Needs Analysis in accordance with State Law. The School Facilities Needs Analysis provides factual basis for the District to consider and adopt alternative school fees that may be collected from residential development. The School Facilities Needs Analysis is updated annually. The most recent Draft School Facilities Needs Analysis, dated March 25, 2003, concludes that Level 2 and Level 3 fees would be \$3.34 and \$6.69 per square foot, respectively.

Pursuant to § 65995 (3)(h) of the California Government Code (Senate Bill 50, chaptered August 27, 1998), the payment of statutory fees "is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or developed of real property, or any change in governmental organization or reorganization." Subsequent to payment of statutory fees, school impacts would be considered less than significant.

Mitigation 3.13-E. Change in Governmental Facilities to Maintain Acceptable School Service – Vineyards project: Impacts related to school facilities would be less than significant. Therefore, mitigation measures are not required. (Less Than Significant Impact)

IMPACT 3.13-F. Change in Governmental Facilities to Maintain Acceptable School Service - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home do not exist. However, these plans may be developed in the future. Development of a potential community college would result in beneficial impacts to school service because the potential community college would add educational facilities to the City of Brentwood. Improvements to the John Marsh Home would result in less than significant

impacts to school facilities because the site would not result in the generation of new students. (Less Than Significant Impact).

The City of Brentwood's proposed annexation and General Plan amendments for a community college site and the John Marsh Home would not have an adverse effect on school facilities. The proposed General Plan amendments would change the land use designations for both properties. The land use designation for the college site would change from *Business Park* to *School, Community College*. The land use designation for the John Marsh Home would change from *Business Park* to *Park*. Potential future development that is consistent with these proposed land use designations would not involve the construction of new residential units. Therefore, the annexations and general plan amendments, or potential future development of these properties would not directly increase the City's student population, nor increase the demand for new school facilities. Therefore, potential impacts to school facilities would be less than significant.

The potential future development of a community college would improve the City's access to college-level education. A new college would also relieve overcrowding that exists at other community colleges within the CCCCDC. Therefore, the future development of a community college would result in beneficial impacts related to educational facilities in the City of Brentwood.

The John Marsh Home would likely be renovated and used as a historic park site in the future. Potential improvements may include new parking areas and the development of an educational/interpretive center. These potential improvements would not generate new students, and therefore, would not impact existing school facilities in the City of Brentwood.

Mitigation 3.13-F. Change in Governmental Facilities to Maintain Acceptable School Service - Annexation Sites: Potential development of a community college or improvements to the John Marsh Home would result in either beneficial impacts or less than significant impacts to school facilities and, therefore, no mitigation is required.

IMPACT 3.13-G. Change in Governmental Facilities to Maintain Acceptable Park Service - Vineyards project: The proposed Vineyards project would increase demand for park facilities in the City of Brentwood and the Eastern Contra Costa County area. The proposed project would increase the population of the City and could increase the use of existing parks and recreational facilities. However, the Vineyards project also proposes the creation of additional park space, consistent with the requirements of the City's General Plan. Therefore, the project would provide sufficient open space and parkland to serve the proposed development. (Less Than Significant Impact).

As previously stated, the proposed Vineyards project would generate approximately 3,575 persons. This increase in population would increase the demand for parks and recreational facilities and would increase the use of existing parks in the vicinity of the site.

General Plan Policy 1.7.5 (Park Acreage) establishes a standard to provide at least 5 acres of parkland per 1,000 residents to accommodate recreational open space needs. The proposed project would generate a population of approximately 3,575 persons. Based on the City's standard, the project would require the provision of approximately 17.9 acres of park space to accommodate recreational

open space needs of the community. The project would provide this acreage within the Village Green and Village Center area, on the winery parcel, as well as public parks and trails along Fairview Avenue and throughout the project area. John Marsh Home. Therefore, the project would provide sufficient open space and parkland to serve the proposed community, consistent with the General Plan.

The residents of the Vineyards project would primarily use the proposed park and recreational facilities within the project area. Some of the population may also use existing park facilities near the proposed project site. These parks include developed urban parks managed by the City of Brentwood Parks and Recreation Department, the natural open space areas managed by the East Bay Regional Parks District, the newly formed State Park (which is managed by the California Department of Parks and Recreation), and the reservoir and surrounding watershed lands (which are managed by the Contra Costa Water District).

In accordance with § 17.805.005.A.6 of the City of Brentwood Zoning Code for residential projects, the Vineyards project will be required to bear its fair share of costs required for the necessary improvements to park and recreational facilities. Fair share costs may be met by payment of development fees, participation in an assessment district (such as a CFD, as described below), or in a capital improvement financing program. Compliance with § 17.805.005.A.6 will ensure that adequate funds are available to maintain existing park facilities and minimize project impacts.

It is anticipated that a new Community Facilities District (CFD) would be formed to enhance the provision of public services to the Vineyards project. A new CFD would likely be similar to CFD No. 3, which provides funding mechanisms for facilities and services, including open space and joint use of school facilities for parks. The Vineyards project would be required to participate in the new CFD and would provide for adequate park facilities to meet the facility needs of the project area.

Mitigation 3.13-G. Change in Governmental Facilities to Maintain Acceptable Park Facilities - Vineyards project: Parks and open space within the Vineyards project, will provide for adequate park facilities to meet the recreation needs of the project area. (Less Than Significant Impact.)

IMPACT 3.13-H. Change in Governmental Facilities to Maintain Acceptable Park Facilities - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home do not exist. However, these plans may be developed in the future. Development of a potential community college would result in less than significant impacts to park facilities because the college would not increase the population of the City, and would therefore not increase the demand for park facilities. In addition, the future development of a community college would likely include sports courts, fields, gymnasiums, and other recreational facilities for college students. Improvements to the John Marsh Home would result in a beneficial impact to park facilities because the site provides additional park space for the community (Less Than Significant Impact).

Potential future development plans for a community college and improvements to the John Marsh Home would not be expected to have an adverse effect on local, regional, and state parks. The proposed General Plan amendments would change the land use designations for both properties. The land use designation for the college site would change from *Business Park* to *School, Community College*. The land use designation for the John Marsh Home would change from *Business Park* to

Park. Future development that is consistent with these proposed land use designations would not involve the construction of new residential units. Therefore, the annexation, general plan amendments, and potential future development of these properties would not directly increase the City's population, and would not increase the demand for new park facilities. Potential impacts to parks facilities would be considered less than significant.

The potential future construction of a community college may include sports courts, fields, gymnasiums and other recreational facilities. These facilities would be available for use by students. The City of Brentwood and the College could enter into a "joint-use" agreement that would allow City residents and City parks and recreational programs to use recreational facilities on the campus. If this occurs, than the number of recreational facilities for the City would increase, resulting in a beneficial impact.

Improvements to the John Marsh Home would result in a beneficial impact to existing park facilities because the site provides additional park and open space to the community.

Mitigation 3.13-H. Change in Governmental Facilities to Maintain Acceptable Park Facilities -Annexation Sites: Potential development of a community college or improvements to the John Marsh Home would result in less than significant or even beneficial impacts to park facilities, and, therefore, no mitigation is required.

IMPACT 3.13-I. Cumulative Impacts – Change in Governmental Facilities to Maintain Acceptable Fire and Emergency Medical Response Services: The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the City of Brentwood, would have the potential for a significant cumulative impact in terms of increased demands for fire protection and emergency medical response services. (Potentially Significant Cumulative Impact).

The Vineyards project would have a less than significant project-specific impact in terms of increased demand for fire protection and emergency medical response services. The East Contra Costa Fire Protection District has adequate facilities to serve the Vineyards project within an acceptable response time and no new facilities would be required. The project would nevertheless provide an offer of dedication to the ECCFPD for a future fire station and construction of an EMS station. Furthermore, the City will require the Vineyards project to pay its fair share of costs required for any needed expansion of fire protection services and facilities.

With respect to the Annexation Sites, potential future development of the John Marsh House would not substantially increase the demand for fire protection or emergency medical response services. The ability to provide such services to the community college, however, cannot be ascertained unless and until development of the community college site is approved. This is identified as a potentially significant impact. The EIR identifies mitigation to reduce this impact to a less than significant level.

The EIR for the City of Brentwood General Plan Update notes that cumulative development would result in increased demand for fire protection services, but it includes mitigation measures to reduce impacts due to greater demand for such services to a less than significant level. These measures include collecting impact fees from developers to ensure that adequate facilities will be available and requiring new developments to participate in a Capital Improvement Financing Program under Section

17.805 of the City Zoning Ordinance. As explained above, the City will require the Vineyards project to pay its fair share of costs required for any necessary expansion of fire protection facilities and services. The mitigation measures identified in the City's General Plan also include general, city-wide planning policies, such as policies to minimize fire hazards within the Brentwood Planning Area, disaster planning policies, policies aimed at managing growth in a way that is compatible with maintaining adequate emergency response times, and policies requiring subsequent environmental review for any additional fire stations that may be needed in the future.

Mitigation 3.13-I. Cumulative Impacts – Change in Governmental Facilities to Maintain Acceptable Fire and Emergency Medical Response Services: By implementing mitigation measure 3.13.B, the project's contribution to the cumulative impacts caused by increased demand for fire protection and emergency medical response services would be less than significant. (Less Than Significant Cumulative Impact).

IMPACT 3.13-J. Cumulative Impacts – Change in Governmental Facilities to Maintain Acceptable Police Services: The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the City of Brentwood, would not have a significant cumulative impact in terms of increased demand for police services. (Less Than Significant Cumulative Impact).

The Vineyards project would not have significant impacts in terms of increased demand for police services. The Chief of the Brentwood Police department has indicated that there would be adequate police resources to serve the project area as it is being developed, and recommended measures will be implemented to reduce emergency response times.

With respect to the Annexation Sites, potential improvements to the John Marsh Home site would not have a significant impact in terms of increased demand for police services, since such services would be provided by the California Department of Parks and Recreation. Similarly, if and when the community college is developed, the Contra Costa Community College District would provide police services. The combined impacts of the Vineyards project and potential future development of the Annexation Sites are less than significant.

The City's General Plan Update EIR concludes that cumulative development would result in increased demand for police services, but it identifies measures to reduce impacts to a less than significant level. These measures are similar to those listed above for fire protection services. They include collecting impact fees from developers to ensure that adequate facilities will be available and requiring new developments to participate in a Capital Improvement Financing Program under Section 17.805 of the City Zoning Ordinance. As explained above, the Vineyards project would be subject to these requirements. The mitigation measures identified in the City's General Plan also include general, city-wide planning policies, such as growth management policies to maintain adequate response times and policies requiring subsequent environmental review for any additional police facilities that may be needed in the future.

Mitigation 3.13-J. Cumulative Impacts – Change in Governmental Facilities to Maintain Acceptable Police Services: No significant cumulative impact is

anticipated, therefore, no mitigation is required. (Less Than Significant Cumulative Impact).

IMPACT 3.13-K. Cumulative Impacts – Change in Governmental Facilities to Maintain Acceptable School Service: The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the City of Brentwood, would not have a significant cumulative impact in terms of increased demand for school facilities. (Less Than Significant Cumulative Impact).

The Vineyards project would increase the population of school-aged children and thereby increase the demand for school facilities and services, but the project would be subject to state-mandated fees, which would be used to pay for additional school facilities as needed. As explained above, under state law, the payment of statutory school fees is deemed to be full and complete mitigation of impacts related to the need for additional school facilities.

With respect to the Annexation Sites, potential future development of the John Marsh House would not increase the demand for school facilities, and the potential future development of the community college would result in beneficial impacts by providing additional educational facilities. Therefore, the combined impacts of the actions studied in this EIR are less than significant.

The City's General Plan Update EIR concludes that cumulative development would result in increased demand for school facilities, but it identifies measures to reduce impacts to a less than significant level. These measures include collecting school facility impact fees to ensure that adequate school facilities are available and requiring new developments to participate in a Capital Improvement Financing Program under Section 17.805 of the City Zoning Ordinance. As described above, the Vineyards project would be subject to statutorily mandated school fees. The mitigation measures identified in the City's General Plan also include general, city-wide planning policies, such as growth management policies and policies requiring subsequent environmental review for any new school facilities that may be needed in the future.

Mitigation 3.13-K. Cumulative Impacts – Change in Governmental Facilities to Maintain Acceptable School Service: No significant cumulative impact is anticipated, therefore, no mitigation is required. (Less Than Significant Cumulative Impact).

IMPACT 3.13-L. Cumulative Impacts – Change in Governmental Facilities to Maintain Acceptable Park Service: The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the City of Brentwood, would not have a significant cumulative impact in terms of increased demand for recreational facilities. (Less Than Significant Cumulative Impact).

The Vineyards project would create additional park space, consistent with the requirement of the City's General Plan. Potential future development of the Annexation Sites would not be anticipated to result in any increase in the demand for new park facilities, and in fact a beneficial impact is anticipated. Potential development of the community college could include gymnasiums, sports fields

and other recreational facilities, while potential improvements to the John Marsh House would provide additional parkland and open space to the community.

The City's General Plan Update EIR explains that cumulative development would result in increased demand for park facilities, but it identifies measures to reduce impacts to a less than significant level. These measures include collecting park facilities impact fees from new development and requiring new developments to participate in a Capital Improvement Financing Program under Section 17.805 of the City Zoning Ordinance; establishing a standard to provide at least 5 acres of parkland per 1,000 residents; and providing that new development should satisfy the policies of the Parks, Trails and Recreation Master Plan. The Vineyards project is consistent with these General Plan policies. The Vineyards project will be required to bear its fair share costs required for necessary park improvements, and the project would provide sufficient acreage of parklands to satisfy the standards under the General Plan. The mitigation measures identified in the City's General Plan for cumulative impacts also include general, city-wide planning policies, such as land use and growth management policies to promote recreational facilities and a policy requiring subsequent environmental review for any additional park facilities that may be needed in the future.

Mitigation 3.13-L. Cumulative Impacts – Change in Governmental Facilities to Maintain Acceptable Park Service: No significant cumulative impact is anticipated, therefore, no mitigation is required. (Less Than Significant Cumulative Impact).

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3.14 UTILITIES AND SERVICE SYSTEMS

The purpose of this section is to:

- ❖ Describe the existing public utilities that would serve the proposed project,
- ❖ Identify potential impacts related to public utilities that could occur with the construction and operation of the proposed project, and
- ❖ Identify corresponding mitigation measures to avoid, minimize or reduce potentially significant impacts.

This section contains analysis based on consultation with affected public utility providers. The following public utility providers were consulted:

- ❖ Contra Costa Water District
- ❖ Contra Costa Flood Control and Water Conservation District
- ❖ East Contra Costa Irrigation District
- ❖ Pleasant Hill Bayshore Disposal
- ❖ City of Brentwood Community Development Department
- ❖ City of Brentwood Department of Public Works
- ❖ Pacific Gas and Electric Company
- ❖ SBC Communications

These agencies, departments, and companies provided relevant information through telephone communications and written letters. Other resources, references, and documents used to prepare this section of the EIR are identified both within this section and Section 10.0, References Cited and Personal Communications.

3.14.1 ENVIRONMENTAL SETTING

Water Supply

Urban Water Management Plan

The Urban Water Management Planning Act was passed in 1984 and requires every urban water supplier providing water for municipal purposes to more than 3,000 connections or supplying more than 3,000 acre-feet of water annually to adopt and submit an Urban Water Management Plan to the Department of Water Resources (DWR) every five years.

The purpose of the Urban Water Management Act and the requirement for water purveyors to prepare an Urban Water Management Plan (UWMP) is to assure that the agency has adequately planned to provide sufficient supplies of water for its users for the foreseeable future. In addition, the plan

includes how the purveyor will address water shortages that could be caused by an extended drought period, an unexpected interruption of water supplies, or other unforeseen circumstances.

The City of Brentwood's UWMP was adopted by the City and submitted to the DWR in the year 2000. In addition to fulfilling the requirements of the Urban Water Management Act, the City's UWMP provides an analysis of water conservation measures in accordance with the guidelines of the California Urban Water Conservation Council (CUWCC) and serves as the City Water System's long-term water supply plan.

California Urban Water Conservation Council

The City of Brentwood is a member of the California Urban Water Conservation Council (CUWCC). The CUWCC was created to increase efficient water use statewide through partnerships among urban water agencies, public interest organizations, and private entities. The goal of the CUWCC is to integrate urban water conservation Best Management Practices (BMPs) into the planning and management of California's water resources. In 1991 nearly 100 urban water agencies and environmental groups signed a Memorandum of Understanding (MOU) in which they pledged to develop and implement fourteen comprehensive conservation BMPs.

City of Brentwood Water System

The Brentwood Water System (System) serves about 13,835 connections. The service area of the City of Brentwood, as defined in the UWMP, is bounded by; Lone Tree Way, Neroly Road, and Delta Road to the north; Briones Valley Road, Concord Avenue, Creek Road and the East Contra Costa Irrigation District (ECCID) Main Canal to the south; Sellers Avenue to the east; and Heidorn Ranch Road to the west. The service area primarily includes residential uses, with small areas of commercial, office, and light industrial uses.

The City has a historic average annual precipitation of 13 inches with a rainy season occurring between November and March. Precipitation during the winter months, October to April, varies widely between 0 inches to 9 inches per month and averages at about 2 to 3 inches per month. Water demands during the winter are relatively low. The summer months, May to September, are typically dry with low humidity and fairly high temperatures. The high temperatures and dry weather during the summer months result in a high water demand during these periods with landscape and turf irrigation being a major use.

Water Supplies

The City's current primary water source is groundwater supplied by wells throughout the City, which provide approximately 67 % of the City's demands. The remaining demands are met through surface water agreement with the East Contra Costa County Irrigation District (ECCID) and treated under contract at the Contra Costa Water District's (CCWD) Randoll-Bold Water Treatment Plant (WTP).

The City's groundwater supply is provided through two main well fields with a total of seven wells. Water pumped from the wells is treated with chlorination at the wellheads and pumped to the distribution system directly.

East Contra Costa County has four groundwater regions. The City of Brentwood occupies the largest region in which groundwater occurs in material deposited by streams originating from the coastal ranges to the west. The aquifer materials capable of yielding quantities of water suitable for municipal and/or agricultural purposes extend to depths of 600 feet.

Groundwater in the City of Brentwood is extracted by seven active wells, which have a combined capacity of 6.8 million gallons per day (mgd), or 4,750 gallons per minute (gpm). The seven wells provide approximately 67% of the City's water demand (City of Brentwood, 2000).

The static water level readings from the City's well fields are deeper than the water levels reflected in most of the East Contra Costa County groundwater region. Readings from the City's wells indicate that the difference in water level may be 20 to 40 feet in magnitude and is likely caused by municipal pumping. The City's pumping has not, however, affected the larger regional basin. The City's UWMP states that in general there is no apparent overdraft of the groundwater system and that there is sufficient recharge occurring during winter months when comparing conditions since the late 1950s. This would suggest that historical rates and patterns of extraction have not exceeded the safe yield of the basin (City of Brentwood, 2000).

Natural groundwater recharge occurs at an average of 3,000 to 6,000 AFY during normal years, and less than 2,000 AFY during drought years. Natural recharge is derived from deep percolation of rainfall, storm flow in creek channels, and irrigation (City of Brentwood, 2001b).

The remaining 33 %, approximately, of the City's water supply comes from surface water from the Sacramento-San Joaquin Delta. The ECCID owns water rights in the area. The City obtained first rights to 14,800 AFY in 1999 from the ECCID. The City's contract with the ECCID is in effect in perpetuity unless amended in writing and agreed to by both the City and the ECCID. The ECCID has a pre-1914 water right and is, therefore, not subject to delivery restrictions during water shortages including regulatory restricted and drought years. The City has a contract with the CCWD to treat the City's surface water supply at the WTP. The contract between the City and the CCWD does not limit the amount of treated water that the City can purchase. The WTP has a current treatment capacity of 40 mgd, or 44,530 AFY, and receives water from Rock Slough, Old River, and Los Vaqueros Reservoir (City of Brentwood, 2000).

The City has not needed all of the 14,800 AFY of water it has rights to, and is currently unable to receive all of the water it has rights to due to the limited capacity of the pumps in the booster station at the City's intertie with the RBWTP. The two pumps only have a capacity of 4,200 gpm, or 6,774 AFY. The City is in the planning and design stages of adding its own pumping and large diameter distribution system which portions are proposed to be fully operational and able to handle the full capacity by 2004-2005 (City of Brentwood, 2000).

The City has also explored the possibility of utilizing recycled water from the Brentwood Wastewater Treatment Plant (WWTP). The WWTP produces approximately 2.8 million gallons of secondary effluent per day. The City has recently increased the treatment capacity of the WWTP to 5.0 mgd is treating the water to a tertiary level. The reclaimed water from the WWTP could be used for irrigation of parks, golf courses, and other areas requiring large amounts of irrigation. The City estimate that 50% of the water treated at the WWTP, approximately 2.5 mgd or 2,800 AFY, is currently available

for reuse. This amount is expected to increase to almost 75 percent in 2010 and 90 percent in 2020 (City of Brentwood, 2000).

Based on existing entitlements, planned development of a distribution system with greater capacity, and planned use of recycled water the City has projected the available water supply through the year 2020. The City has adequate water supply for a normal year and up to three years of a multiple year drought to meet the demands of the growth forecast with a total population of 52,100 in the year 2020 (Table 3.14-1).

Water Supply	Average/Normal Water Year	Single Dry Water Year	Multiple Dry Years		
			Year 1	Year 2	Year 3
Groundwater ¹	7,661	7,661	7,661	7,661	7,661
Surface Water (ECCID) ²	14,800	14,800	14,800	14,800	14,800
Recycled Water (WWTP) ³	4,460	4,460	4,460	4,580	4,690
TOTAL	26,921	26,921	26,921	27,041	27,151

Source: City of Brentwood, Urban Water Management Plan, 2000, Table 4-2.

Notes:
¹ Based on 100 percent well capacity.
² Assumes surface water supplies are not reduced during multiple dry water years.
³ Based on 50 percent of treated tertiary effluent available for recycling in 2005, 75 percent in 2010, and 90 percent in 2020.

The UWMP utilized data from the Association of Bay Area Governments (ABAG) and the U.S. Census in predicting how much population growth would occur through the year 2020. ABAG population projections are driven by economic and demographic mathematical models and take into consideration development constraints such as local governments’ plans, policies, and regulations related to land use and growth management. The increase in employment opportunities within the City is also estimated, giving a good estimate of what the future water demand will be (Table 3.14-9). Based on ABAG projections and per capita demand rates the projected average day demand for 2020 is 16.1 mgd, or 18,032 AFY (City of Brentwood, 2000). A comparison the City’s available water supply and anticipated demand through the year 2020 shows a substantial surplus of water throughout all those years (Table 3.14-2).

	2005	2010	2015	2020
Total Supply	16,244	25,746	25,981	26,921
Demand	9,481	12,958	15,475	18,032
Surplus or (Deficit)	6,793	12,788	10,506	8,889

Source: City of Brentwood, Urban Water Management Plan 2000

¹ AFY=Acre-feet per year

Water Distribution System

The WTP takes water from the Contra Costa Canal, which is the CCWD's principal raw water conveyance facility. The water is then transported to the Randoll-Bold Intertie. The Randoll-Bold Intertie and connection is located at the intersection of Neroly Road and Empire Road. An 18-inch diameter main transports the treated water from the WTP to Lone Tree Way where it connects into the City distribution system.

The City's distribution system consists of three primary pressure zones. Water pressure is maintained between 40 and 100 pounds per square inch gauge (psig). Pressure Zone 1 serves all developments up to an elevation of 110 feet, Pressure Zone 2 serves developments from an elevation of 110 feet to 220 feet, and Pressure Zone 3 serves areas with elevations from 220 feet to 330 feet. The City also utilizes two booster pump stations each with a total pump capacity of 4,200 gpm.

Four reservoirs are located in the City with a combined capacity of approximately 10.8 million gallons. With an additional 4 million gallons of storage currently planned for construction beginning in the summer of 2004. The storage tanks serve as an equalizing emergency water supply and for fire supplies. The storage tanks are constructed above-grade of welded-steel.

The City's distribution system consists of 92 miles of distribution mains. The original water mains were constructed in 1940 and range in size from 4 to 10 inches in diameter. Larger-diameter water mains have been utilized more recently. A 30-inch diameter transmission main transports treated water from the Randoll-Bold WTP along Empire Road to the intertie and pump station. Smaller distribution lines then connect to the system at Lone Tree Way. A 16-inch diameter water transmission main transports water from the northern wells south along Highway 4 to the downtown pipe grid system.

Wastewater Services

Wastewater Treatment

Wastewater treatment services are provided throughout the City by the City of Brentwood. The Wastewater Treatment Plant (WWTP) is located on approximately 70 acres of land owned by the City on the north side of Sunset Road and east of SR 4. The City of Brentwood's new wastewater treatment plant (WWTP) has recently been expanded to a capacity of 5 mgd. The City currently treats approximately 2.8 mgd. The City of Brentwood will continue to phase expansion of the WWTP as needed to achieve an ultimate capacity at build-out of 10 mgd (City of Brentwood, 2001b).

Treated wastewater from the WWTP is discharged to Marsh Creek under a National Pollution Discharge Elimination System (NPDES) permit from the Central Valley Regional Water Quality Control Board (RWQCB). The NPDES permit limits discharges into Marsh Creek to 4.5 mgd and specifies effluent standards for biochemical oxygen demand (BOD), total suspended solids, total coliform organisms, dissolved oxygen, and pH. The current NPDES permit for the WWTP specifies that the effluent must be treated to Title 22, Division 4, standards of the California Code of Regulations. The WWTP has consistently met the permit requirements and has routinely produced effluent with low levels of BOD and suspended solids.

Sanitary Sewer Lines

The City's wastewater collection system consists of the original system that was constructed in the 1940s, as well as a new system of interceptor sewers completed in the 1990s. Sanitary sewers are separated from the storm sewers. The sanitary sewer lines that were constructed prior to 1990 range in size from 6 to 15 inches in diameter. The new interceptor system consists of larger pipes ranging from 10 to 42 inches in diameter.

Solid Waste

The site of the proposed Vineyards project and the Annexation Sites are located in the unincorporated area of Contra Costa County, just outside of the Brentwood city limits and within the Brentwood Sphere of Influence and General Plan planning area. The applicant is requesting annexation to the City of Brentwood.

Pursuant to the Public Resources Code § 49520 if a local agency has authorized, by franchise, contract, license, or permit, a solid waste enterprise to provide solid waste handling services and those services have been provided for more than three previous years, the solid waste enterprise may continue to provide those services up to five years or until the expiration of the service contract.

The City of Brentwood is responsible for all solid waste collection within the city limits. A private collection company, the Brentwood Disposal Service, services areas outside of the city limits and those recently annexed. The Brentwood Disposal Service would handle disposal for up to five years after annexation. After that time, the City of Brentwood would provide services.

Solid Waste Collection and Disposal

Brentwood Disposal Service (0 to 5 years)

The waste collected by the Brentwood Disposal Service from the unincorporated areas of Contra Costa County is taken to the Contra Costa Transfer and Recycling Facility in Pittsburg, approximately 15 miles from the proposed Vineyards project site and Annexations Sites. Waste is then transferred to Potrero Hills Landfill in Solano County, approximately 50 miles away.

The Potrero Hills Landfill facility is a Class III facility and has a lifetime of approximately 20 years. The facility accepts municipal solid waste, industrial waste, construction waste, ash, tires and sludge's. The facility has a permitted capacity of 21.5 million cubic yards (c.y.) and can accept up to 4,330 tons per day. The remaining capacity as of December of 2001 was 13.8 million c.y. The facility was originally permitted in December of 1996 and is inspected monthly (Dingman, 2003).

City of Brentwood (after 5 years from annexation)

After a maximum of 5 years after the proposed Vineyards project site and/or the Annexation Sites are annexed into the City of Brentwood, solid waste handling services would be transferred from the Brentwood Disposal Service to the City of Brentwood's Solid Waste Division. The Solid Waste Division is a division of the Public Works Department and is responsible for the collection, processing and disposal of all solid waste generated within the City limits.

The City operates a solid waste recycling center and transfer station on the north side of Sunset Road, east of Marsh Creek, approximately 7 miles from the proposed Vineyards project site and Annexations Sites. All of the solid waste collected by the City of Brentwood is brought to this facility. Waste is then transferred to the Keller Canyon Landfill within the City of Pittsburg, approximately 20 miles away.

The Keller Canyon Landfill is operated by Allied Waste Systems and was originally permitted in March of 2000. The facility is a Class III facility and accepts municipal solid waste, non-liquid industrial waste, contaminated soils, ash, grit and sludge's. The facility has an estimated lifetime of over 30 years with a permitted capacity of 75 million c.y. and can accept up to 3,500 tons per day. As of June 2001, the facility has a remaining capacity of over 68 million c.y. The Keller Canyon landfill facility is inspected monthly.

Recycling

In order for a service provider to continue contracted services for up to 5 years after a property has been annexed outside of their applicable service area the services provided must be comparable with the current service and rates applicable to the provider within whose service area the annexed property is now located. In this instance, due to the annexation, the service area boundary would change and the property would be within City of Brentwood's service area, as opposed to Brentwood Disposal Services who service unincorporated lands and the proposed project site prior to annexation. Brentwood Disposal Services can continue to service the property for up to 5 years, but must provide a comparable service to the property as the City of Brentwood.

As the Public Resources Code requires the provision of services by the Brentwood Disposal Service that are comparable to the City of Brentwood and that the services of the Brentwood Disposal Service would only be allowed to continue for a maximum of five years, the primary discussion will be directed to the services provided by the City of Brentwood.

The City of Brentwood is among the leaders in the State in terms of recycling, with 42% of its waste stream recycled. The City of Brentwood's recycling program utilizes independent containers devoted to recyclable materials that are provided to their customers. Three separate containers are provided to residential customers, one for general waste, one for recyclables, and one for yard waste. The City collects newspaper, mixed paper, office paper, junk mail, magazines, chipboard, cardboard, paper milk cartons, aluminum and tin cans, glass bottles and jars, plastics #1-7, textiles and small metal appliances.

Natural Gas and Electricity

The State of California is the tenth largest consumer of energy in the world. Approximately 46 percent of overall energy use is by the transportation section, 31 percent by the industrial sector, 13 percent by residential users, and 10 percent by commercial users. Residential and commercial uses rely almost exclusively on natural gas and electricity for energy demands in the State of California, as opposed to petroleum, coal, and other energy sources (California Energy Commission, 2000).

Natural gas and electricity service to the proposed Vineyards project would be supplied by Pacific Gas & Electric (PG&E) Corporation. PG&E, incorporated in California in 1905, is one of the largest

combination natural gas and electric utilities in the United States. The company is based in San Francisco, California.

PG&E employs over 18,000 people and has a service area of some 70,000 square miles. The company owns and maintains 131,000 miles of electric lines and 3,000 miles of natural gas pipelines. PG&E provides electrical service to approximately 1.5 million customers and natural gas service to approximately 3.7 million customers.

PG&E gains its power through a variety of sources including fossil-fueled power plants, hydroelectric powerhouses, and a nuclear power plant as well as through purchases from independent power producers and utilities.

Title 24

The proposed Vineyards project and any future development on the Annexations Sites would be subject to the standards of Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings. The California State Legislature established the Title 24 standards in 1978 in order to reduce the state's energy consumption. The standards apply to new construction of both residential and non-residential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. Adherence to the standards is verified and enforced through the local building permit process. Measures included consist of development of an energy budget for structures and designing a building that uses no more energy that what is specified in the budget. Alternative component packages such as insulation, glazing, lighting, shading, and water- and space heating systems can also be installed. Title 24 is the requirement to achieve the minimum energy efficiency standards of the State of California.

Energy Action Plan

The California Energy Commission (CEC), the California Public Utilities Commission (CPUC), and the California Power Authority recently prepared and approved the Energy Action Plan (EAP). The goal of the EAP is to "ensure that adequate, reliable, and reasonably-priced electrical power and natural gas supplies, including prudent reserves, are achieved and provided through policies, strategies, and actions that are cost-effective and environmentally sound for California's consumers and taxpayers."(CPUC, 2003).

In July 2003 steps were taken to begin implementation of the EAP. The EAP strives to optimize energy conservation and resource efficiency, accelerate the State's goal for renewable generation, ensure reliable, affordable electricity generation, upgrade and expand the electricity transmission and distribution infrastructure, promote customer and utility owned distributed generation, and ensure reliable supply of reasonably priced natural gas (CPUC, 2003).

Telecommunications

The Vineyards project site and the Annexations Sites are within the service area of SBC Communications (SBC). SBC currently serves the Summerset residential community opposite the Vineyards project site on Concord Avenue and customers throughout the City of Brentwood.

No SBC facilities currently exist on either the Vineyards project site or the John Marsh Home or Community College sites. SBC service could be extended to the sites from existing facilities which serve adjacent developments, i.e. Summerset community.

3.14.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Significant impacts related to public services and utilities were determined from criteria stated in *Appendix G of the State CEQA Guidelines*. For the purposes of these projects, a public service and utility impact is considered significant if the project would:

- ❖ Have insufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements would be needed.
- ❖ 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.
- ❖ Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB).
- ❖ Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
- ❖ Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.

IMPACT 3.14-A. Water Entitlements – Vineyards Project: The City has projected growth through the year 2020 and has sufficient water supplies available to serve the projected growth and existing demands, including the proposed Vineyards project. The City has sufficient water supplies through its groundwater resources and its existing contracts with the East Contra Costa Irrigation District (ECCID) to meet projected demands through the year 2020 and a less than significant impact would occur. Furthermore, the City is increasing the amount of water that can be recycled for irrigation purposes further contributing to the amount of water available to the City. (Less Than Significant Impact)

The proposed Vineyards project would be consistent with the City's General Plan and would not result in an increase in the City's population at build out over the amount planned and taken into account in the UWMP. As the City has sufficient water entitlements to meet the demands of the proposed project and future projects without impacting service to existing customers, it is anticipated that the Vineyards project would result in a less than significant impact with regards to water supply (Table 3.14-3).

Land Use	Demand Rate (gpd)	Unit	Number of Units	DEMAND (gpd)
Active Adult Residential	710	DU	1100	781,000
Market Rate Single-Family	710	DU	150	106,500
Multi-Family	340	DU	350	119,000
Village Center	2,400	ACRE	39	93,600
Winery	2,000	ACRE	30	60,000
TOTAL				1,160,100 gpd (1299.4 AFY)
Note: gpm = gallons per minute				
Source: Water Resources Associates, 2003				

Table 3.14-1 shows that the City of Brentwood has 27,151 AFY of water supply available during multiple dry years. Table 3.14-2 shows that when accommodating for projected growth through the year 2020, the City will have a substantial surplus of water supply. The City’s water supply is primarily provided by groundwater in the City and remaining demands are supplied through a contract with the ECCID, which is in effect in perpetuity unless amended in writing and agreed to by both the City and the ECCID.

Furthermore, the Brentwood General Plan anticipated urbanized development of the entire SPA J planning area. Through the redrawing of the Urban Limit Line and acquisition of a large portion of the SPA J area for protection as open space, much less of the SPA J area is available for development than what was anticipated in the City’s General Plan. SPA J is described, at the time of adoption of the General Plan, as being approximately 5,500 acres in size, located in the southwest corner of the General Plan’s Planning Area. This number does not reflect the approximate 1,000-acre purchase for the Los Vaqueros Reservoir to the south. Therefore, SPA J’s potential developable acreage as identified in the General Plan is 4,560 acres. Since adoption of the General Plan, however, 3,942 acres of SPA J became a State Park leaving 618 acres in the SPA, including the Vineyards project site and 170 acres south of Marsh Creek Road and west of Walnut Boulevard. Therefore, development of the proposed Vineyards project represents a project with less water demand than what was anticipated in the Brentwood General Plan, the General Plan EIR, and the UWMP.

Senate Bill (SB) 610 became effective in January of 2002 and amended state water laws. SB 610 requires that any project subject to CEQA prepare, or be included in, a water assessment. The foundational document for SB 610 is the UWMP, which can be used to meet the standards required for SB 610. A project is required to prepare a water assessment if it meets the definition of a project as defined in State Water Code 10912 and would be supplied by a public water supplier. However, SB 610 exempts projects from having to prepare a separate water assessment if the project was included in a water assessment prepared by the public water supplier (i.e. an Urban Water Management Plan).

The Vineyards project would comply with SB 610, and would not have to prepare a separate water assessment pursuant to SB 610, because the project site and the entire SPA J area were included in the City of Brentwood's UWMP (2000) which anticipated development of a greater area of SPA J. The proposed project is consistent with the UWMP and would comply with SB 610.

Mitigation 3.14-A. Water Entitlements – Vineyards Project: The City of Brentwood has sufficient water entitlements to serve the proposed Vineyards project and, therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.14-B. Water Entitlements - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a small parking lot, or addition of an interpretive center inside the House. Potential development of a community college, however, would increase demands on water supply. Because sufficient water is available, this increase would result in a less than significant impact. (Less Than Significant Impact).

The proposed Annexation Sites would result in an increase in the demand for municipal water in the City of Brentwood. The Annexation Sites are located within the City of Brentwood's municipal water service area and were included in the UWMP. As mentioned previously, the City has projected growth through the year 2020 and anticipates a surplus in water supplies (refer to Table 3.14-2).

The proposed annexation of the John Marsh Home and its use as a public recreational facility is not anticipated to result in a substantial demand on municipal water supplies as little development is anticipated on this site. The greatest demands generated by the site would be from irrigation of lawns and landscaping associated with the public areas of the facility.

The potential development of the community college site could likely result in a substantial demand on water supply related to the need for drinking water, sanitary sewer, kitchen and/or other facility uses, and for irrigation of landscaping and lawns. However, given the City's existing entitlements and planned surplus in the year 2020 the demand generated by the college would not result in insufficient water supplies. Furthermore, much of the colleges' landscaping demands could be met through the use of recycled water supplied by the City's wastewater treatment plant.

Further analysis of the community college's water demands should be performed when project level environmental analysis is conducted, should a project be proposed. Therefore, in order to further ensure this impact will remain less than significant, the following mitigation measure is recommended. However, based on the anticipated surplus identified in the UWMP, the City of Brentwood has sufficient supplies to serve the Annexations Sites as well as the Vineyards project and existing uses.

Mitigation 3.14-B.1 Water Entitlements – Annexation Sites: Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These potential improvements would result in less than significant impacts that do not require mitigation.

Recommended Mitigation 3.14-B.2 Water Entitlements – Annexation Sites: Potential development of a community college is not expected to result in significant impacts arising from potential water demands. To further minimize this less than significant impact, the following mitigation measure is recommended:

- ❖ The Contra Costa Community College District will perform a project level analysis of the project water demands and potential impacts, if any, on the municipal water supply system prior to approving development of a community college on the site. (Less Than Significant Impact).

IMPACT 3.14-C. Water Facilities and Wastewater Treatment Facilities -Vineyards Project: The City of Brentwood has recently expanded its wastewater treatment plant and has sufficient capacity to meet the wastewater treatment of the Vineyards project, while also accommodating existing uses. In addition, the Vineyard Project includes water distribution lines and other water supply facilities sufficient to serve project needs and no offsite facilities would need to be expanded. (Less Than Significant Impact).

Sanitary sewer flow rates for the Vineyards at Marsh Creek project have been developed based upon the City of Brentwood Engineering Design Standards dated January 15, 2002. The average flow rate for single-family residential land uses is 100 gallon per person per day. The average flow rate for commercial areas and business park/office areas are 1,600 gallons per acre per day and 2,000 gallons per acre per day, respectively. Infiltration and inflow has been computed by using 500 gallons per inch-diameter-mile per day for sewer mains and laterals. Residential laterals would be an average of 75-feet in length (Carlson, Barbee, & Gibson, 2003).

The proposed Vineyards project would generate a substantial amount of wastewater flows (Table 3.14-4). The City of Brentwood’s new wastewater treatment plant (WWTP) has recently been expanded to a capacity of 5 mgd. Prior to the expansion of this facility, the WWTP was operating near its previous capacity at 2.1 mgd.

Land Use	Number of Units	Acres	Average Flow ¹ (gpd)	Peak Flow ² (gpd)
Residential	1,250	N/A	375,000	1,125,000
Commercial/Retail ³	N/A	63	100,800	351,000
Recreation Center	N/A	5	10,000	20,000
TOTAL			485,800	1,496,000
Notes:				
¹ Average flow is based on 3 persons per dwelling unit and 100 gallons per person per day for residential land uses. Average flow for commercial/retail is 1,600 gallons per acre per day. Average flow for recreation center is 2,000 gallons per acre per day.				
² Peak flow is based on 3-times the average flow for residential land uses. Peak flow for commercial/retail, and recreation is 4,000 gallons per acre per day.				
³ Includes Village Center, winery, and amphitheater				
Source: Carlson, Barbee, & Gibson, Water Resource Associates, and City of Brentwood 2003.				

Further expansion of the WWTP is planned for a total capacity of 10 mgd (City of Brentwood, 2001b). The Brentwood General Plan EIR evaluated the City's wastewater system based on a buildout population in Brentwood of 74,677 people. The General Plan EIR concluded that buildout to a total population of nearly 75,000 people would not require further expansion of the WWTP beyond the planned total capacity of 10 mgd. The Vineyards project site is included in the City of Brentwood's General Plan study area.

Furthermore, the Brentwood General Plan anticipated urbanized development of the entire SPA J planning area. Through the redrawing of the Urban Limit Line and acquisition of a large portion of the SPA J area for protection as open space, much less of the SPA J area is available for development than what was anticipated in the City's General Plan. SPA J is described, at the time of adoption of the General Plan, as being approximately 5,500 acres in size, located in the southwest corner of the General Plan's Planning Area. This number does not reflect the approximate 1,000-acre purchase for the Los Vaqueros Reservoir to the south. Therefore, SPA J's potential developable acreage as identified in the General Plan is 4,560 acres. Since adoption of the General Plan, however, 3,942 acres of SPA J became a State Park leaving 618 acres in the SPA, including the Vineyards project site and 170 acres south of Marsh Creek Road and west of Walnut Boulevard. Therefore, development of the proposed Vineyards project represents a project with less wastewater treatment demands than what was anticipated in the Brentwood General Plan, the General Plan EIR, and the UWMP.

Buildout of the proposed Vineyards project would not be complete until 2025; therefore the peak flows shown in Table 3.14-4 would not be generated until that time. However, the residential uses would be developed in the near term however and, for purposes of this evaluation, are assumed to be complete by approximately 2007. As shown in Table 3.14-4, the residential uses contribute the greatest amount of wastewater flows. With the recent expansion of the WWTP to 5 mgd (and further expansion to 10 mgd), there would be sufficient treatment capacity to serve the proposed Vineyards project.

Wastewater flows from the Vineyards project would gravity flow into two connection points within the Summerset Active Adult Residential Community east and north of Concord Avenue. One connection point is located within Fairview Avenue and consists of a ten (10) inch sewer main located at the current terminus of Fairview Avenue, within the Summerset development approximately 600 feet north of the project boundary. The 10-inch sewer main is approximately 12 feet deep and is stubbed at the end for future connection to the south. Approximately 390 of the proposed single-family residences of the Vineyards project would drain to this main within Fairview Avenue (Table 3.14-5).

With an estimated infiltration and inflow volume of 27,600 gpd at the Fairview Avenue Connection, the total rate of peak flow at the 10-inch main connection would be 0.59 cubic-feet per second (cfs). The capacity at this 10-inch sewer main connection at half-full can handle a rate of peak flow of 0.64 cfs (Carlson, Barbee, & Gibson, 2003).

Land Use	Number of Units or acres	Average Flow ¹ (gpd)	Peak Flow ² (gpd)
Residential	390 units	117,000	351,000
Recreation Center	5 acres	10,000	20,000
Total	NA	127,000	371,000
Notes: ¹ Average flow is based on 3 persons per dwelling unit and 100 gallons per person per day ² Peak flow is based on 3-times the average flow			
Source: Carlson, Barbee, & Gibson, Water Resources Associates, 2003.			

The other connection point consists of a 15-inch sewer main located at the southern edge of an RV parking lot within the Summerset development, adjacent to Concord Avenue. The 15-inch sewer main is approximately twenty (20) feet deep and is stubbed at the end for future connection to the south. The remainder of the single-family residential lots will utilize this connection as well as all of the commercial and retail area (Table 3.14-6).

Land Use	Number of Units	Acres	Average Flow ¹ (gpd)	Peak Flow ² (gpd)
Residential	860	N/A	258,000	774,000
Commercial Retail	N/A	63	100,800	351,000
TOTAL			358,800	1,125,000
Notes: ¹ Average flow is based on 3 persons per dwelling unit and 100 gallons per person per day for residential land uses. Average flow for commercial/retail is 1,600 gallons per acre per day. Average flow for recreation center is 2,000 gallons per acre per day. ² Peak flow is based on 3-times the average flow for residential land uses. Peak flow for commercial/retail, and recreation is 4,000 gallons per acre per day.				
Source: Water Resources Associates, 2003.				

With an estimated infiltration and inflow volume of 47,600 gpd at the Concord Avenue Connection, the total rate of peak flow at the 15-inch main connection would be 1.9 cubic-feet per second (cfs). The capacity at this 15-inch sewer main connection when three-quarters full can handle a rate of peak flow of 2.5 cfs (Carlson, Barbee, & Gibson, 2003).

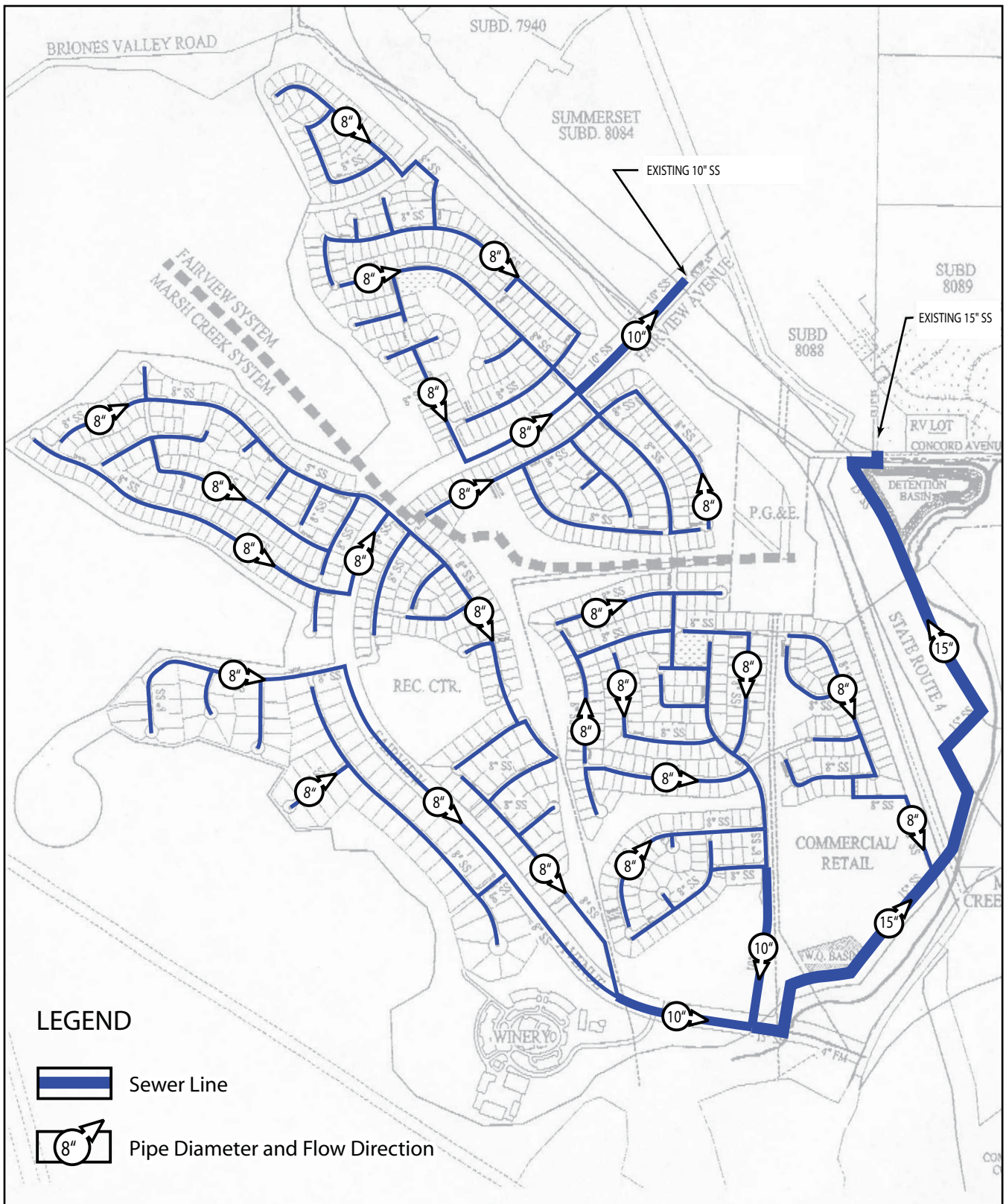
The Concord Avenue sewer main and the Fairview Avenue sewer main gravity flow to a 24-inch sewer main located south of Balfour Road. The line currently has sufficient capacity and it is anticipated that this will hold true in the future (Eldredge, 2003).

The pipe capacities for the onsite wastewater system are based on generated flow rates utilizing the Manning Formula. All of the sewer mains would be sized to carry the design flow at capacities of fifty-percent (50%) for pipes up to twelve (12) inches in diameter and seventy-five (75%) for pipes twelve (12) inches in diameter and larger. Based upon these design capacities, sewer velocity would be equal to or greater than two (2) feet per second for all sewers. Lateral pipe sizes would range from four (4) inches to eight (8) inches and main lines would be fifteen (15) inches (Exhibit 3.14-1).

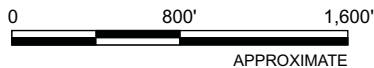
As the connections for the sewer system are adequately sized to handle flows from the proposed project a less than significant impact is anticipated assuming the onsite sanitary sewer system is constructed in accordance with the City of Brentwood Engineering Design Standards.

The range of elevations on the proposed Vineyards project site requires that water service be from both Pressure Zone 2 and 3. The projected water requirements of the proposed project for these two zones are shown in Table 3.14-7.

Three alternative water distribution scenarios have been developed for potential onsite distribution systems. All areas above 220 feet in elevation are served from Zone 3. In the proposed water distribution report prepared for the project by Water Resources Associates, alternative 2 was the preferred project alternative. The City of Brentwood requires that a new Zone 2 pumping station accompanied by a Zone II hydropneumatic pump station supply all the water requirements to this project. Both stations would be located along Fairview Avenue near the intersection of Fairview and realigned Concord Avenue (Water Resources Associates, 2003).



Source: Carlson, Barbee and Gibson (2003)



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THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Sanitary Sewer System

Exhibit 3.14-1

TABLE 3.14-7 PROJECTED WATER DEMANDS-VINEYARDS PROJECT						
Land Use	Demand Rate, Gal/day per unit	Number of Dwelling Units	DEMAND			
			Average Day (gpm)	Maximum Day (gpm)	Peak Hour (gpm)	Peak Demand for Landscape Irrigation (gpm)
Zone 2						
Low Density Residences	710	660	325	683	1,300	1,975
Commercial Center and Hotel	2,400	N/A	75	158	300	75
<i>Subtotal</i>		<i>660</i>	<i>450</i>	<i>946</i>	<i>1,800</i>	<i>2,100</i>
Zone 3						
Very Low Density Residential	900	150	94	197	376	469
Low Density Residential	720	440	217	456	868	1,317
Recreation Center	2,000	N/A	7	15	28	7
Winery	2,000	N/A	25	53	100	25
<i>Subtotal</i>		<i>590</i>	<i>343</i>	<i>721</i>	<i>1,372</i>	<i>1,818</i>
Total		1,250	793	1,667	3,172	3,918
Note: gpm = gallons per minute						
Source: Water Resources Associates, 2003						

The proposed project water storage requirement would require 25 percent of the maximum day demand as an operating reserve, 50 percent of the maximum day demand for emergency reserve, and the required fire flow times the duration for the fire reserve (Table 3.14-8).

The Vineyards project will be developing a 4 million gallon water tank of which only 2 million gallons is required to meet the project’s anticipated storage demands. Through the development of the water storage tank, onsite water supply mains, and connections to the City water system the proposed Vineyards project will be able to meet its storage and distribution needs. Based on existing entitlements and planned development of a distribution system with greater capacity, the City has projected the available water supply through the year 2020.

	Zone 2
Fire Flow (gpm)	4,000
Fire Flow Duration (hour)	4
Maximum Day (gpm)	950
Operating Reserve (mil. gal.)	0.34
Fire Reserve (mil. gal.)	0.96
Emergency Reserve (ml. gal.)	0.68
TOTAL (mil.gal.)	2.00
Source: Water Resources Associates, 2003	

Mitigation 3.14-C. Water Facilities and Wastewater Treatment Facilities – Vineyards Project: There is sufficient wastewater treatment capacity and distribution facilities to serve the proposed Vineyards project and no expansion or construction of new wastewater facilities beyond what is already planned would be required. In addition, the project includes sufficient water supply facilities and no offsite facilities would need to be expanded to serve the project. Therefore, no mitigation is required. (Less Than Significant Impact)

IMPACT 3.14-D. Wastewater Treatment Facilities - Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. Development of a potential community college would result in less than significant impacts to wastewater treatment facilities because the flows generated by the community college project would not exceed the capacity of municipal facilities nor require the construction or expansion of wastewater facilities. Improvements to the John Marsh Home would result in less than significant impacts to wastewater treatment facilities because minimal improvements would be developed on the site, none of which would have the potential to substantially contribute to wastewater flows. (Less Than Significant Impact).

The proposed Annexation Sites would be annexed into the City to obtain City services, including use of the City’s wastewater treatment system. The City of Brentwood’s wastewater treatment plant (WWTP) has recently been expanded to a capacity of 5mgd. Prior to the expansion of this facility the WWTP was operating near capacity at 2.1 mgd. Further expansion of the WWTP is planned for a total capacity of 10 mgd (City of Brentwood, 2001b). This expansion would occur in two phases of incremental capacity increases of 2.5 mgd. The Brentwood General Plan EIR evaluated the City’s wastewater system based on a buildout population in Brentwood of 74,677 people. The General Plan EIR concluded that buildout to a total population of nearly 75,000 people would not require further expansion of the WWTP beyond the planned total capacity of 10 mgd. Furthermore, the General Plan

assumed development of the entire SPA J site. As previously described, much of SPA J is no longer available for development.

As little development that would generate wastewater flows is anticipated on the John Marsh Home site, flows generated at the John Marsh Home site are expected to be minimal and not substantial in relation to the Citywide wastewater system. The potential development on the Community College site, should there be any, would consist of a community college facility with capacity to serve up to 5,000 students (Table 3.14-9). The average flow rate for the community college would be 2,000 gallons per acre per day, or an average flow total of approximately 60,000 gpd or 1.2% of the current WWTP capacity of 5 mgd. The peak flow would be approximately 120,000 gpd, or 2.4% of the current WWTP capacity of 5 mgd. (Carlson, Barbee, and Gibson, 2003).

With the recent expansion of the WWTP to 5mgd, there would be sufficient treatment capacity to serve the potential future development on the Community College and John Marsh Home site should there be any.

Land Use	Acres	Average Flow ¹ (gpd)	Peak Flow ² (gpd)
Community College	60	60,000	120,000
TOTAL		60,000	120,000
¹ Average for the Community College is 2,000 gallons per acre per day. ² Peak flow for the Community College is 4,000 gallons per acre per day.			
Source: Water Resources Associates, 2003.			

The sanitary sewer flows generated for the community college were based upon a school of 5,000 students. Although the community college is not being proposed as part of this project, its sewer requirements have been calculated for the purposes of evaluating the proposed annexation.

The community college site would gravity flow from the 15-inch sewer main in Concord Avenue north of the site. A 10-inch stub will be provided by the Vineyards project at the intersection of Marsh Creek Road and Fairview Avenue for future connection.

With an estimated infiltration and inflow volume of 47,600 gpd at the Concord Avenue Connection, the total rate of peak flow at the 15-inch main connection, including the Community College site and the Vineyards project would be 1.9 cubic-feet per second (cfs). The capacity at this 15-inch sewer main connection when three-quarters full can handle a rate of peak flow of 2.5 cfs (Carlson, Barbee, & Gibson, 2003).

The downstream connections for the sewer system are adequately sized to handle flows from the proposed Annexation Sites, as well as the Vineyards project, and the City’s WWTP has adequate

treatment capacity to serve the Annexation Sites, therefore the Annexation Sites would not require the expansion or construction of new municipal wastewater facilities.

Mitigation 3.14-D. Wastewater Treatment Facilities – Annexation Sites: The proposed Annexation Sites would not result in significant impacts to wastewater treatment facilities and, therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.14-E. Regional Water Quality Control Board Requirements – Vineyards Project: Wastewater generated from the proposed Vineyards project would be treated at the City of Brentwood Wastewater Treatment Plant (WWTP). The City’s WWTP has consistently met the RWQCB treatment requirements. The WWTP has sufficient capacity to treat wastewater demands of the proposed Vineyards project to RWQCB requirements. (Less Than Significant Impact).

The current NPDES permit issued to the City of Brentwood expires in June of 2005 and permits a maximum of 4.5 mgd of treated wastewater to be discharged to Marsh Creek. Discharged wastewater must meet the RWQCB treatment standards established in the California Code of Regulations, Title 22. The City of Brentwood’s WWTP has consistently met the treatment requirements of the RWQCB. Currently, the WWTP has average daily inflow of 3.2 mgd of wastewater.

The proposed Vineyards project is expected to generate a total of approximately 1.5 mgd of wastewater flows at buildout. With the wastewater flows contributed by the Vineyards project, the WWTP would reach a treatment level of 4.3 mgd and would not exceed the NPDES requirements established by the RWQCB.

Furthermore, the City of Brentwood has plans to continue to expand the WWTP in two phases to reach a total capacity of 10 mgd. It can be expected that at the time of build-out of the Vineyards project, anticipated in the year 2020, that the WWTP will be operating at the full capacity of 10 mgd.

Mitigation 3.14-E. Regional Water Quality Control Board Requirements – Vineyards Project: The proposed Vineyards project would not contribute wastewater flows that would exceed RWQCB requirements and the City of Brentwood would be able to treat the flows to required levels and, therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.14-F. Regional Water Quality Control Board Requirements – Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not currently exist. However, these plans may be developed in the future. Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. Potential development of a community college, however, would increase wastewater treatment demands of the WWTP in the future. These potential effects would result in a significant impact. (Potentially Significant Impact).

The current NPDES permit issued to the City of Brentwood expires in June of 2005 and permits a maximum of 4.5 mgd of treated wastewater to be discharged to Marsh Creek. Discharged wastewater must meet the RWQCB treatment standards established in the California Code of Regulations, Title 22. The City of Brentwood's WWTP has consistently met the treatment requirements of the RWQCB. Currently, the WWTP treats approximately 3.1 mgd of wastewater.

No development would occur on the John Marsh Home site that would result in substantial increases in wastewater treatment demands of the WWTP. The potential development of the community college however would have the potential to result in substantial wastewater treatment demands.

The community college would contribute peak wastewater flows of 120,000 gpd to the WWTP. As the timing of development of the community college is not known, the ability of the WWTP to meet the demands of the potential development and maintain compliance with the RWQCB is unknown. While it can be expected that the WWTP would be able to meet the demands of the community college without exceeding RWQCB requirements, the ability to comply should be demonstrated prior to project development. The CCCCDD should demonstrate that the project would not exceed the treatment or capacity requirements of the RWQCB prior to project development.

Mitigation 3.14-F. Regional Water Quality Control Board Requirements – Annexation Sites: Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. These potential improvements would result in less than significant impacts which do not require mitigation.

Mitigation 3.14-F.2 Regional Water Quality Control Board Requirements – Annexation Sites: Potential development of a community college would result in potentially significant impacts with regards to the unknown ability of the WWTP to accommodate flows from the project and meet RWQCB requirements. These impacts would be reduced to a less than significant level with application of the following mitigation measure(s):

- ❖ Prior to project development, the Contra Costa Community College District shall demonstrate that the project would not contribute wastewater flows to the WWTP that would exceed RWQCB treatment requirements and discharge restrictions.

(Less Than Significant Impact).

IMPACT 3.14-G. Solid Waste Disposal-Vineyards Project: The proposed Vineyards project would be served by the Keller Canyon Landfill. The Keller Canyon landfill has sufficient capacity to accommodate the Vineyard project's solid waste disposal needs. The Vineyards project would comply with federal, state and local statutes and regulations related to solid waste. (Less Than Significant Impact)

The Vineyards project would generate solid waste that is typically associated with apartment complexes, single-family residences, and commercial uses. The amount of solid waste generated by the proposed Vineyards project would depend on a number of factors, including the number of residents in the apartment complex, occupancy of the hotel, and the nature of the businesses in the commercial space. Therefore, a general range can be used to estimate the amount of solid waste generated by the project using waste generation rates.

The California Integrated Waste Management Board (CIWMB) has collected solid waste generation rates from a variety of sources. Rates for multi-family residential developments range from 3.6 to 8.6 pounds per dwelling unit per day, while single-family residential unit rates range from 7.8 to 11.4 pounds of waste per unit per day. Commercial/retail generation rates range from 0.0025 to 0.046 pounds of waste per square foot per day and office generation rates range from 0.006 to 0.084 pounds per square foot per day. Generation rates for hotels/motels range from 2 to 4 pounds of waste per room per day (CIWMB, 2003).

The proposed project would include 1,100 active adult single-family residential units, 150 executive single-family lots, 150 senior apartments, 200 multi-family units, and approximately 75,000 sq.ft. of commercial and retail space, 30,000 sq.ft. of office space, 200,000 sq.ft. of institutional level of congregate residential, and a hotel with 30-40 rooms. A winery and amphitheater is also proposed.

By applying these generation rates, the 1,100 single-family units, and 150 executive single-family lots, would generate between 9,750 to 14,250 pounds per day. The 350 multi-family units would generate between 1,260 and 3,010 pounds per day. The 75,000 sq.ft. of commercial/retail space would generate between 188 and 3,450 pounds per day. The 30,000 sq.ft. of office space would generate between 180 pounds per day and 2,520 pounds per day. The 30-40-room hotel would generate 60 to 100 pounds per day. (CIWMB, 2003).

The waste generation rate identified for nursing home uses is 5 pounds per person per day. It is estimated that the 200,000 sq.ft. of institutional levels of congregate residential would house a maximum of 400 people. This is based on the provision of 200 1,000 sq.ft. rooms and a potential occupancy of 2 people per room. Based on occupancy of 400 people, the institutional levels of congregate care would generate 2,000 pounds of waste per day. The actual amount of waste generated at the institutional levels of congregate residential would likely be much less as the estimate of 400 people does not take into account administrative offices, kitchen facilities, common areas, and other non-living spaces that would need to be included in the 200,000 sq.ft. Furthermore, the estimate of 400 people is based on a maximum occupancy with 2 people per room. It has not yet been determined whether the rooms would be dual or single occupancy and, therefore, the potential occupancy could be much less and, likewise, the waste generation of the congregate residential facility would be much less.

The total development would generate approximately 13,438 to 25,330 pounds of waste per day, or 5.9 to 11.3 tons per day. The winery was not included in this estimate as no sample generation rates were identified by the CIWMB and wineries produce very little solid waste and would not substantially alter the total generation rates. The addition of the winery waste to the total would not change the range of estimated waste generation by the proposed Vineyards project in a substantial manner.

Much of the waste generated by the proposed Vineyards project, including cardboard boxes, paper products, glass, plastic, and aluminum cans, could be recycled. The City of Brentwood offers recycling services for residential and commercial customers. In Brentwood, recyclable materials can be placed in their appropriate bins and picked up from apartment complexes, single-family residences and commercial sites.

The Potrero Hills Landfill is permitted to accept up to 4,330 tons of waste per day. The facility currently has approximately 13.8 million c.y. of remaining capacity. The project would utilize the Potrero Hills Landfill for a maximum of five years after annexation of the proposed project site. As the project will not be entirely built-out within the first five years, not all of the proposed uses would be occupied and generating waste within the first five years. Therefore the actual amount of waste contributed to the Potrero Hills Landfill is likely to be substantially less than the amount used in this analysis.

The Keller Canyon Landfill would be the facility serving the site throughout the life of the Vineyards project. It is permitted to accept up to 3,500 tons of waste per day. Currently the facility accepts approximately 2,500 tons of waste per day. The proposed project would generate 5.9 to 11.3 tons of waste per day and would not exceed the permitted daily capacity of the Keller Canyon Landfill. The facility currently has approximately 68 million c.y. of remaining capacity (Pleasant Hill Bayshore Disposal Service, 2003).

The proposed Vineyards project would increase the demand for solid waste services, but not in a manner that would result in a significant impact. The City of Brentwood has anticipated annexation of the proposed Vineyards project site in its latest General Plan update and has the ability to provide service to the proposed project. There are also adequate facilities and established service to serve the project during the five-year period after annexation that service may be provided by Brentwood Disposal Service. The proposed project would result in a less than significant impact on solid waste service and facilities.

Mitigation 3.14-G. Solid Waste Disposal – Vineyards Project: No significant impact is anticipated, therefore, no mitigation is required. (Less Than Significant Impact).

IMPACT 3.14-H. Solid Waste Disposal-Annexation Sites: Plans for development of a community college or for improvements to the John Marsh Home property do not exist. However, these plans may be developed in the future. Development of a potential community college would result in less than significant impacts to solid waste disposal because there are sufficient solid waste facilities to meet the demands of the potential development. Potential future improvements to the John Marsh Home would result in less than significant impacts to solid waste because minimal amounts of waste are expected to be generated onsite. (Less Than Significant Impact)

The potential future development of the Annexations Sites would generate solid waste that is typically associated with community colleges and public recreational facilities. The amount of solid waste generated by the projects would depend on a number of factors, including the number of visitors to the John Marsh Home, number of students at the community college, and length of college sessions. Moreover, exact development plans have not been proposed for these two sites yet. Therefore, it is difficult to determine how much solid waste future development of the anticipated Annexations Sites would generate.

The CIWMB does not have any waste generation rates for parks such as the John Marsh Home. However, the use anticipated on the John Marsh Home site is not expected to generate a substantial amount of solid waste. As no food is expected to be prepared or served on site, it is likely that the waste generated at the John Marsh Home site would be brought in by visitors using the site for picnics or recyclable beverage containers brought from offsite. These two sources of waste generation are not expected to be substantial.

The development anticipated on the Community College site would be the provision of school facilities to serve up to 5,000 students. The CIMWB provides a number of waste generation rates that apply to schools. In order to anticipate the greatest amount of waste generation on the site, the highest rate of 1 pound per student per day has been used. Based on an anticipated enrollment of 5,000 students this would result in a waste generation of 5,000 lbs/day of solid waste generated on the site (CIWMB, 2003).

Much of the waste generated by development of the Annexations Sites, including cardboard boxes, paper products, glass, plastic, and aluminum cans, could be recycled. The City of Brentwood offers recycling services for residential and commercial customers. In Brentwood, recyclable materials can be placed in their appropriate bins and picked up from apartment complexes, single-family residences and commercial sites.

The Potrero Hills Landfill is permitted to accept up to 4,330 tons of waste per day. The facility currently has approximately 13.8 million c.y. of remaining capacity. If any development of Annexation Sites occurs within the first five years after annexation, the development would utilize the Potrero Hills Landfill for a maximum of five years after annexation.

The Keller Canyon Landfill would be the facility serving the site throughout the life of development on the Annexations Sites. It is permitted to accept up to 3,500 tons of waste per day. Currently the facility accepts approximately 2,500 tons of waste per day. The Annexations Sites would generate 5.6 to 12.5 tons of waste per day and would not exceed the permitted daily capacity of the Keller Canyon Landfill. The facility currently has approximately 68 million c.y. of remaining capacity (Pleasant Hill Bayshore Disposal Service, 2003).

The proposed Annexations projects would likely increase the demand for landfill capacity, but not in a manner that would exceed capacity. Furthermore, the project would comply with federal, state, and local statutes and regulations related to solid waste.

Mitigation 3.14-H.1. Solid Waste Disposal-Annexation Sites: Improvements to the John Marsh Home could include restoration of the John Marsh Home, installation of a parking lot, or addition of an interpretive center inside the House. No services or

facilities would be provided that would result in a substantial generation of solid waste. These potential improvements would result in less than significant impacts which do not require mitigation. (Less Than Significant Impact)

Recommended Mitigation 3.14-H.2. Solid Waste Disposal-Annexation Sites: Potential development of a community college would result in potentially substantial amounts of solid waste being generated. This impact is considered to be less than significant as there are sufficient solid waste facilities to meet the demands of the potential project. However, in order to encourage recycling, the following mitigation measures are recommended:

- ❖ The Contra Costa Community College District will contract with the City of Brentwood or another provider of recycling services to provide on-site recycling services.
- ❖ The Contra Costa Community College District shall design the refuse disposal areas throughout the public areas of the community college site with adequate room to accommodate ample recycling bins in addition to trash bins.

(Less Than Significant Impact)

IMPACT 3.14-I. Natural Gas and Electricity-Vineyards & Annexation Sites: The proposed Vineyards project and potential development on the Annexation Sites would result in increased energy demands, however, not at a level capable of substantially depleting statewide supplies. The California Public Utilities Commission, the California Power Authority, and the California Energy Commission regulate natural gas and electricity supplies on a statewide level. The proposed projects would not result in increased demands at a level considered substantial in relation to the statewide energy system. (Less Than Significant Impact)

The 2002-2012 Energy Outlook Report prepared by the California Energy Commission (CEC) demonstrated that there is a narrow margin between energy demands and energy supplies (CEC, 2002). The energy demand and supply balance will not change unless there is increased generation, decreased demand, or an increase in efficiency of use.

The California Public Utilities Commission (CPUC), California Power Authority, and the CEC have developed an Energy Action Plan (EAP). The EAP was approved by the three agencies in May of 2003 and implementation is underway. The intent of the EAP is to provide reliable, adequate, and reasonably priced electrical power and natural gas supplies for the state of California (CPUC, 2003).

The proposed Vineyards project and Annexation Sites would result in increased electricity and natural gas consumption, however not at a level that would require the development of new energy sources or affect service to existing customers. The proposed project would be able to connect to natural gas supplies and electricity transmission lines without requiring a significant expansion of infrastructure.

The proposed Vineyards project and Annexation Sites would be subject to the standards of Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings. The California

State Legislature established the Title 24 standards in 1978 in order to reduce the state’s energy consumption. The standards apply to new construction of both residential and non-residential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. Adherence to the standards is verified and enforced through the local building permit process. Measures included consist of development of an energy budget for structures and designing a building that uses no more energy that what is specified in the budget. Alternative component packages such as insulation, glazing, lighting, shading, and water- and space heating systems can also be installed. Title 24 is the requirement to achieve the minimum energy efficiency standards of the State of California.

The Brentwood General Plan Update EIR (2001) identified a number of measures related to energy usage and implementation of the General Plan Update, with which the proposed Vineyards project and Annexations Sites should also adhere to as feasible.

Recommended Mitigation 3.14-I.1. Natural Gas and Electricity-Vineyards Project & Annexation Sites: To the extent feasible, energy efficient building design shall be incorporated as feasible by including such features as orientation of structures to summer and winter sunlight to absorb winter solar heat and reflect or avoid summer solar heat, thermal insulation of the walls and attic, which meets or exceeds local; standards, weather stripping of windows and doors to decrease heat loss, solar assisted domestic hot water and pool heating, tinted or solar reflective double glazing, overhangs on southern elevation, and vegetation on western elevations to provide shading from summer sun. Other specific energy design strategies for different land uses which shall be incorporated as feasible shall include, but are not limited to, the following:

- ❖ The use of windows and skylights to reduce energy demand for lighting for commercial operations;
- ❖ Consultation with PG&E for assistance with energy conservation features.

(Less Than Significant Impact)

Recommended Mitigation 3.14-I.2. Natural Gas and Electricity-Vineyards Project & Annexation Sites: To the extent feasible, site-planning principles that would help in the conservation of energy shall be utilized during the planning and design of the Vineyards project and Annexations Sites. The site planning consideration shall include, but not be limited to, measures such as the following:

- ❖ Orientation of the building such that solar access and prevailing winds are considered. If the longer side of a building is aligned in a north-south direction, a large area of the building would be exposed to greater amount and intensity of solar rays from the east and the west directions. A greater portion of the building should face the south side rather than the north side. The south side is associated with highest heat gains.

Winds affect infiltration (air leakage) and transmission (thermal conductance) over the entire skin of a building, and the glazed or windowed portion

particularly. The north and west sides of a building are most exposed to wind loads. Winds can decrease the exterior film of still air that usually surrounds a building and so increase the thermal vulnerability of roof and wall elements. This could increase heating and cooling loads. Knowing the direction of prevailing winds could determine where entrances and exits should be placed and whether or not they should be shielded;

- ❖ **Choosing trees for landscaping that can serve as wind and light breaks and can affect energy consumption. Deciduous trees (which lose their leaves in winter) shall be selected for the south side of the building to provide sunshade during summer months and allow sun penetration during winter months. Evergreens can be planted on the northern side where there are no cold weather solar gains. Evergreens may also be planted around building entrances and windows to protect from prevailing wind conditions. The landscaping for parking lots and sidewalks should use trees that provide shade during the summer months and permit solar access to adjacent buildings during the winter months. (Less Than Significant Impact)**

IMPACT 3.14-J. Cumulative Impacts – Water Supply: The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the City of Brentwood, would not have significant cumulative impacts in terms of the effects on water supplies. (Less Than Significant Cumulative Impact).

As demonstrated by the Urban Water Management Plan (UWMP), a comparison of the City's available water supply and anticipated demand through the year 2020 shows a substantial surplus of water for the City of Brentwood throughout all those years. The City has sufficient water supplies to meet the combined demands of the Vineyards project and future development of the Annexation Sites, along with planned development through 2020. As a result, the combined water supply impacts of the actions studied in this EIR would be less than significant.

The EIR for the City of Brentwood General Plan Update further explained that Brentwood's contributions to the cumulative demand for water supply are expected to be limited and that water supply impacts resulting from cumulative development in the City would not be significant. The General Plan EIR also explained that the goals, policies and actions presented in the General Plan Update would reduce any contribution to cumulative utility demands.

Mitigation 3.14-J. Cumulative Impacts – Water Supply: No significant cumulative impact is anticipated, therefore, no mitigation is required. (Less Than Significant Cumulative Impact).

IMPACT 3.14-K. Cumulative Impacts – Water and Wastewater Treatment Facilities: The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the City of Brentwood, would not have significant cumulative impacts in terms of water and wastewater treatment facilities. (Less Than Significant Cumulative Impact).

As explained above, the City of Brentwood’s wastewater treatment plan (WWTP) has recently been expanded from a capacity of 2.1 million gallons per day (mgd) to a capacity of 5 mgd. Further expansion of the WWTP is planned for a total capacity of 10 mgd (City of Brentwood, 2001b). In combination, the Vineyards project and the potential future development of the Annexation sites would not exceed wastewater treatment capacity or require additional expansion of that capacity. Therefore, the combined effects of the actions studied in this EIR on wastewater treatment capacity are less than significant. With respect to water supply and distribution facilities, the Vineyards project includes sufficient facilities and no offsite facilities would need to be expanded to serve the project. Thus, the Vineyards project would not contribute to a cumulative need to expand water supply facilities. In fact, the water tank on the Vineyards project site has been designed to provide water supply facilities for planned growth elsewhere in the City, and the environmental effects of construction of the water tank have been evaluated in this EIR.

The EIR for the City of Brentwood General Plan Update recognized that cumulative development could require new or expanded wastewater infrastructure and/or water storage and distribution infrastructure, but it concluded that the General Plan policies and goals would reduce impacts to a less than significant level. The General Plan Update EIR also concluded that implementation of the General Plan Update would not exceed wastewater treatment requirements of the RWQCB.

Mitigation 3.14-K. Cumulative Impacts – Water and Wastewater Treatment Facilities: No significant cumulative impact is anticipated, therefore, no mitigation is required. (Less Than Significant Cumulative Impact).

IMPACT 3.14-L. Cumulative Impacts – Solid Waste Disposal: The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the City of Brentwood, would have the potential to significantly increase demand for solid waste disposal facilities. (Potentially Significant Cumulative Impact).

There would be sufficient solid waste disposal capacity to accommodate the needs of both the Vineyards project and the potential future development of the Annexation Sites. In addition, both the Vineyards project and the proposed Annexation Sites would comply with federal, state, and local legal requirements related to solid wastes. As a result, the combined solid waste disposal impacts of the actions studied in this EIR are less than significant. The EIR nevertheless recommends mitigation to reduce any solid waste disposal impacts from potential future development of the Community College site (see Mitigations 3.14-H.2).

The EIR for the City of Brentwood General Plan Update concluded that cumulative development associated with the General Plan Update would not result in a significant impact on solid waste disposal facilities in the proximity of Brentwood. The General Plan Update EIR acknowledged, however, that while Brentwood’s cumulative contribution to landfills in the region would be less than considerable, the City had no authority over other jurisdictions that generate solid wastes.

Accordingly, the General Plan Update EIR conservatively assumed that cumulative, regional landfill impacts may be significant.

The implementation of recommended Mitigation 3.14-H.2 would reduce project-specific impacts and would minimize any contribution to the potential cumulative impact identified in the General Plan EIR.

Mitigation 3.14-L. Cumulative Impacts – Solid Waste Disposal: Through compliance with federal, state and local requirements relating to solid wastes and through implementation of Mitigation 3.14-H.2 the project’s contribution to any cumulative solid waste disposal impacts would be less than significant . (Less Than Significant Cumulative Impact).

IMPACT 3.14-M. Cumulative Impacts – Natural Gas & Electricity: The Vineyards project and the potential future development of the Annexation Sites, in combination with past, present and probable future projects in the region, would have the potential to significantly increase demands for energy supplies. (Potentially Significant Cumulative Impact).

The combined energy demands of the Vineyards project and the potential future development of the Annexation Sites would not result in increased energy demands at a level considered substantial in relation to the statewide energy system. The EIR nevertheless recommends mitigation (see Mitigation 3.14-I.1, and 3.14-I.2) to reduce this already less than significant impact.

The EIR for the City of Brentwood General Plan Update, however, explained that because long-term solutions to address growing energy demands throughout the State are in flux, it conservatively assumed that cumulative growth in Brentwood and the surrounding areas could result in significant energy impacts.

Implementation of the recommended project-specific mitigation, which would reduce the already less than significant energy impacts resulting from the Vineyards project and the potential future development of the Annexation Sites, would minimize any contribution to cumulative impacts.

Mitigation 3.14-M. Cumulative Impacts – Natural Gas & Electricity: Implementation of Mitigation 3.14-I.1 and 3.14-I.2 would reduce the contribution of the projects to cumulative energy impacts to a less than significant level. (Less Than Significant Cumulative Impact).

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4.0 CUMULATIVE IMPACTS

4.1 INTRODUCTION TO CUMULATIVE ANALYSIS

State CEQA Guidelines § 15130 requires that an EIR include a discussion of cumulative impacts “...when the project's incremental effect is cumulatively considerable, as defined in [State CEQA Guidelines] § 15065(c).” Cumulatively considerable effects are those “...incremental effects of an individual project... when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” State CEQA Guidelines § 15065(c). “As defined in [State CEQA Guidelines] § 15355, a cumulative impact consists of an impact which is created as a result on the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.” CEQA Guidelines § 15130(a)(1). A lead agency need not consider an incremental effect as “cumulatively considerable” but does need to briefly describe its basis for concluding the incremental effect is not cumulatively considerable.

“The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great [a level of] detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.” CEQA Guidelines § 15130(b).

4.2 CUMULATIVE SCENARIO CONSIDERED

Cumulative Scenario

The *cumulative scenario* considered in this EIR for consideration of cumulative impacts is buildout of the City of Brentwood in accordance with the adopted City of Brentwood General Plan (City of Brentwood 2001a) and General Plan Update (City of Brentwood, 2001b). The buildout “horizon” for the General Plan is year 2020, although the General Plan recognizes the areas designated as Urban Reserve may develop in the future but not before year 2020. The *Vineyards project* site is situated within SPA J and is assumed in this EIR to be developed by approximately year 2025. The *Annexation sites* are situated on land within SPA J. The John Marsh Home is now situated within a state park. The potential community college site is designated in the Brentwood General Plan as Business Park.

Current City of Brentwood Project Activity

Reviewing the recent City of Brentwood “project activity list” and foreseeable projects under consideration by the City of Brentwood indicates that a number of projects will likely be considered for City approval, in addition to the *Vineyards project*, and/or potentially develop in the City within the near future (e.g., within the next few years) (Table 4-1).

**TABLE 4-1
CITY OF BRENTWOOD CURRENT PROJECT ACTIVITY**

Project Name	Location	Site Acreage	General Description	Development Stage
N/A	NE Corner of Fairview and Balfour	25 acres	10-25 acres available for commercial development	No project submitted at this time.
N/A	NW Balfour and Hwy. 4 Bypass	14 acres	Potential for retail with office and possible hotel or apartments (11-20 du per acre)	No project submitted at this time
McClaren Park	Balfour and Griffith	5 acres	Community Park	Completion of development of a community park
Heritage High School and Middle School	Balfour and W. Independent	75 acres	Middle and High School to serve up to 1,800 students	Scheduled to open in 2006
Krey Elementary School	Ventura Blvd., west of Concord Ave.	N/A	Elementary School to serve up to 800 students	School is open
Pinn Brothers	Central and Walnut	N/A	580 Residential Units – Medium density residential development ranging from apartments to single-family dus	Use Permit approved for 580 units. Approved for tentative map, currently seeking approval for final map.
Police Station	SE corner of Central and Walnut	~1 acre	Main police station	Waiting for approval of final design.
S&S Farms	South of Grant and East of Union Pacific Railroad	N/A	310 single-family homes	Unit count approved, low-density lots of 8,000 s.f. or larger.
School and Park	S&S Farms site	11-acre School and 5 acre Park	School and park to serve S&S Farms residential development	Required for S&S Farms residential development.
N/A	North of Grant, east of Highway 4 Bypass	16 acres	Site available for school and park development	No proposals currently pending.
N/A refers to a project not yet applied for, though seen as a probable future project.				
Source: City of Brentwood, 2003				

The projects listed in Table 4-1 are identified by the City of Brentwood as being consistent with the City's General Plan and, therefore, are included within the cumulative General Plan buildout scenario and would not alter General Plan buildout assumptions. These projects are listed simply to inform the public that these are projects under recent consideration by the City of Brentwood in addition to the Vineyards at Marsh Creek project.

4.3 DISCUSSION OF CUMULATIVE IMPACTS

Cumulative Impacts of the Brentwood General Plan

The cumulative scenario used for cumulative impacts for the proposed *Vineyards project* is buildout of the Brentwood General Plan. The cumulative impacts of the *Vineyards project* will consider the incremental effects of *Vineyards project* with General Plan buildout to identify cumulative impact that are created as a result on the combination of the project evaluated in the EIR together with other projects causing related impacts. Consequently, it is worth identifying cumulative impacts identified with implementation of the Brentwood General Plan as identified in the Brentwood General Plan EIR as context for project contributions that may be distinctly attributable to the *Vineyards project*.

Significant Cumulative Impacts

The Brentwood General Plan was certified by the City of Brentwood on November 27, 2001. Section 5.4 of that EIR identified cumulative impacts that would result with implementation of the General Plan. This EIR further analyzes cumulative impacts associated with the Vineyards Project and Annexation Sites. The cumulative impacts are described in each applicable section of this EIR in Chapter 3.

5.0 SIGNIFICANT AND UNAVOIDABLE IMPACTS

State CEQA Guidelines § 15126.2 (b) requires that an EIR describe “...any significant impacts, including those which can be mitigated but not reduced to a level of insignificance” (sometimes referred to as “significant and unavoidable” impacts). “Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described.”

This section lists the significant impacts of the proposed project that cannot be avoided if the project is implemented. These impacts are frequently referred to as “significant and unavoidable impacts” of the proposed project. The reader is directed to Sections 3.1 through 3.14, herein, for discussion of environmental impacts for the proposed project. Cumulative impacts are addressed in Section 4.0 of this EIR. The mitigation measures required to reduce the impacts are also presented. However, in all cases, these mitigation measures are unable to reduce the impacts to a less than significant level.

The following impacts are significant and unavoidable:

IMPACT 3.5-E. Operational Air Quality Impacts – Vineyards Project: Future area source and vehicular emissions under the proposed project would result in operational air quality impacts. Analysis shows that air emissions with buildout of the proposed project would exceed BAAQMD thresholds for ROG in the near-term (2007) and ROG and PM₁₀ emissions in the long-term (2025). (Potentially Significant Impact).

Mitigation 3.5-E.1 Operational Air Quality Impacts – Vineyards Project: The following measures shall be implemented in order to reduce motor vehicle emissions from commercial and/or institutional uses:

- ❖ Construct transit facilities such as bus turnouts/bus bulbs, benches, shelters, etc;
- ❖ At office buildings, provide preferential parking (e.g., near building entrance, sheltered area, etc.) for carpool and vanpool vehicles;
- ❖ Provide secure, weather-protected bicycle parking for employees in the commercial area;
- ❖ Provide electric vehicle charging stations at the recreation center and commercial center;
- ❖ Provide safe, direct access for bicyclists to adjacent bicycle routes;
- ❖ Provide short-term bicycle parking for retail customers and other non-commute trips; and
- ❖ Provide direct, safe, attractive pedestrian access from the project area to transit stops and adjacent development.

Mitigation 3.5-E.2 Operational Air Quality Impacts – Vineyards Project: The following measures shall be implemented in order to reduce motor vehicle emissions from residential uses:

- ❖ Provide bicycle lanes and/or paths, connected to community-wide network;
- ❖ Provide sidewalks and/or paths, connected to adjacent land uses, transit stops, and/or community-wide network.

(Significant and Unavoidable Impact).

IMPACT 3.5-G. Cumulative Air Quality Impacts: Impacts to regional air quality resulting from development of the Vineyards project, the Annexation sites, and other cumulative projects throughout the air basin may impact existing air quality levels. Cumulative impacts as a result of project implementation would be significant and unavoidable. (Potentially Significant Cumulative Impact).

Mitigation 3.5-G. Cumulative Air Quality Impacts: The Vineyards project and Annexation Sites would contribute to a significant and unavoidable impact related to cumulative air impacts. Mitigation Measures 3.5-E.1, 3.5-E.2 and 3.5-F would reduce the projects' contribution to this impact, but not to a less than significant level. (Significant and Unavoidable Cumulative Impact).

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6.0 ALTERNATIVES

State CEQA Guidelines requires that an EIR include “a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen one or more of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation.” Section 6.1 describes a range of alternatives to the proposed project. The potential environmental impacts of each alternative are also described. Section 6.2 compares the alternatives and identifies the “environmentally superior alternative” among the alternatives considered.

6.1 ALTERNATIVES TO THE PROPOSED PROJECT

Alternative 1 - No Project, No Development

Description of Alternative

Vineyards Project: Under the *No Project, No Development Alternative*, no development would occur on the 481 acres of land that composes the proposed project site. The 481 acres would remain as vacant land, used for cattle grazing, as is the existing condition of the property. The project related roadway extension of Fairview Avenue and Briones Valley Road would not occur. No residential or commercial uses would be developed.

Annexation Sites: The 60-acre college property would not be annexed into the City of Brentwood. The land use designations of the college site would not be amended in the General Plan from Business Park to Schools – Community College under the No Project Alternative. Similarly, the 40-acre John Marsh Home would not be annexed into the City of Brentwood municipal boundaries nor would the General Plan land use designations be amended from Business Park to Park uses.

Environmental Analysis

Land Use, Applicable Plans, and Policies

The *Vineyards project* would result in less than significant impacts with regard to land use, applicable plans, and policies. Potential future development on the *Annexation Sites* would also result in less than significant impacts with regard to land use, applicable plans, and policies.

Under the *No Project, No Development Alternative*, there would be no need for the GPAs, annexation, rezoning, development agreements, and/or design review to occur on the *Vineyards project* site. Similarly, the need for Annexation, General Plan Amendments, and rezoning on the *Annexation Sites* would not be needed, and therefore, no potential for land use, plan, or policy inconsistencies would exist. The existing cattle grazing use of the *Vineyards* property would remain, the John Marsh Home site would remain in its current state, and the Community College site would remain vacant.

Therefore, the *No Project, No Development Alternative* would result in no land use, applicable plans, or policy impacts.

Agricultural Resources

The proposed *Vineyards project* would result in a less than significant impact on agricultural resources. The Vineyards project could result in the conversion of a small amount (fewer than 10 acres) of prime farmland and/or farmland of statewide significance to non-agricultural uses. However, the Vineyards project would also create on the project site approximately 90 new acres of farmland, which would be used for a winery, vineyards and olive groves.

The *Annexation Sites* are not located on prime farmland, farmland of statewide significance, or unique farmland; as a result, the potential future development of the *Annexation Sites* would not result in a significant impact to agricultural resources.

With *No Project, No Development*, no development would occur on either the *Vineyards project* site or on the *Annexation Sites*. This alternative would therefore avoid the small portion of designated farmland that could be converted under the proposed Vineyards project. This alternative, however, would not introduce new farmland onto the project site.

Population and Housing

The *Vineyards project* would result in less than significant impacts with regard to population growth and displacement of housing and/or people. Potential future development on the *Annexation Sites* would also result in less than significant impacts with regard to population growth and displacement of housing and/or people.

No development exists on the *Annexation Sites* (except for the historic John Marsh Home). Under the *No Project, No Development alternative*, nothing would be built on the Vineyards property or *Annexation Sites*. Consequently, Alternative 1 would result in no impacts regarding population or displacement of people or housing.

Transportation / Circulation

The *Vineyards project* would result in near-term significant impacts to the following intersections: Balfour Road/SR4 Bypass (Concord Avenue); Balfour Road/Fairview Avenue; Marsh Creek Road/Walnut Boulevard; and Walnut Boulevard/Concord Avenue. No significant long-term impacts were identified with either the *Vineyards project* or the *Annexation Sites*. Mitigation measures have been identified to reduce impacts to the aforementioned intersections to less than significant levels.

With the *No Project No Development alternative*, intersection levels of service would continue to operate at existing unacceptable levels at Balfour Road/SR4 Bypass (Concord Avenue) during the PM peak hour, Balfour Road/Fairview Avenue during the PM Peak Hour and Marsh Creek Road/Walnut Boulevard in the AM and PM peak hours. The alternative would not avoid or improve these conditions. This alternative would avoid the additional Near-term *Vineyards project* significant impacts to Balfour Road/SR 4 Bypass (Concord Avenue) during the AM peak hour and the Balfour Road/Fairview Avenue during the AM Peak Hour, beyond conditions without the Near-term Without Project scenario.

The *Long-term Project and Annexation Sites* are based on the assumption that Segment 3 of the SR 4 Bypass has been built. With the addition of this segment of the SR 4 Bypass, no significant impacts would result with the Long-term Project and/or the *Annexation Sites*.

The *No Project No Development Alternative* would avoid the Near-Term less than significant (with mitigation) impacts of the proposed *Vineyards project*, but would also not result in contributions being made to the regional traffic fee system of the East Contra Costa County Regional Fee and Financing Authority (ECCRFFA) for improvements to the impacts intersections. These contributions would be made by the *Vineyards project* and is required by mitigation identified in Section 3.4.

Air Quality

The construction of the *Vineyards project* would result in significant short-term air quality impacts, operational air quality impacts, and cumulative air quality impacts. Operational and cumulative air quality impacts would remain significant and unavoidable. Mitigation measures have been identified to reduce short-term air quality impacts to a less than significant level.

Potential future development of the *Annexation Sites* would result in potentially significant short-term air quality impacts, operational air quality impacts, and cumulative air quality impacts. Operational and cumulative air quality impacts would remain significant and unavoidable. Mitigation measures have been identified to reduce short-term air quality impacts to a less than significant level.

The *No Project, No Development alternative* would entirely avoid the less than significant (with mitigation) construction impacts and the significant and unavoidable operational and cumulative impacts of the proposed project because it would not generate construction related emissions and dust, and would not increase traffic and related vehicle emissions.

Noise

The *Vineyards project* would result in significant short-term construction noise impacts and external noise impacts on the *Vineyards project*. The *Annexation Sites* would also result in short-term construction noise impacts. Mitigation measures have been identified to reduce the short-term construction noise impacts of the *Vineyards project* and *Annexation Sites* and external noise impacts of the *Vineyards project* to a less than significant level.

The *No Project, No Development alternative* would entirely avoid the less than significant (with mitigation) construction and external noise impacts of the *Vineyards project* and *Annexation Sites* as no development would occur on the site with the potential to generate noise or expose people to external noise sources.

Aesthetics / Visual Resources

Construction of the *Vineyards project* would result in visual changes on the site from undeveloped open space to an urbanized development. The proposed *Vineyards project* would result in a significant impact with regard to the degradation of visual character. The *Vineyards project* would also result in the introduction of light and glare to the site. Mitigation measures have been identified that reduce light and glare and visual character impacts to a less than significant level.

The potential future development on the *Annexation Sites* would potentially result in similar significant visual character and light and glare on the community college site. Mitigation measures have been identified to reduce the impacts to a less than significant level.

No Project, No Development alternative would result in no changes on either the *Vineyards project* site or the *Annexation Sites*, and they would remain in the current vacant and undeveloped state. No new sources of light and glare would be introduced and there would be no change in the visual character of the sites. The *No Project, No Development Alternative* would avoid the less than significant (with mitigation) impacts of the proposed *Vineyards project* and *Annexation Sites*.

Biological Resources

The proposed *Vineyards project* and *Annexation Sites* would result in significant impacts to the following biological resources:

- ❖ Vernal pool brachiopods, curved-foot hygrotus diving beetle and molestan blister beetle;
- ❖ Special-status plants (e.g., stinkbells, hogwallow starfish, spearscale and big tarplant);
- ❖ California tiger salamander;
- ❖ California red-legged frog;
- ❖ Western pond turtle;
- ❖ Nesting raptors;
- ❖ Burrowing owls;
- ❖ Swainson's hawk;
- ❖ Nesting special-status passerines;
- ❖ Special-status bat species;
- ❖ San Joaquin kit fox.

In addition, the *Vineyards project* would result in significant impacts due to the loss of alkali meadow, temporary aquatic habitat impacts, tree removal, and loss of seasonal wetlands. Mitigation measures have been identified to reduce the significant biological resource impacts of the proposed *Vineyards project* and the *Annexation Sites* to a less than significant level.

With the *No Project, No Development Alternative* all of the significant biologic resource impacts of the proposed project would be avoided as the *Vineyards project* site and the *Annexation Sites* would remain in their current state and no activities would occur with the potential to disturb biological resources.

Geology, Soils, Seismicity and Mineral Resources

The proposed *Vineyards project* would have significant impacts with regards to the potential to expose people and structures to geologic hazards, such as strong ground shaking during an earthquake and expansive soils. Also, development of the *Vineyards project* would result in potential development on a mineral resource of regional importance, Domengine Sandstone, resulting in a significant project

impact and potentially significant cumulative impact. Mitigation measures have been identified to reduce the significant geologic, soils, seismicity, and mineral resource impacts of the proposed *Vineyards project* to a less than significant level.

The potential future development on the *Annexation Sites* would result in potentially significant impacts with regards to the potential to expose people and structures to geologic hazards, such as fault rupture, ground failure, strong ground shaking during an earthquake, expansive soils, and fault rupture. Mitigation measures have been identified to reduce these impacts to a less than significant level.

The *No Project, No Development Alternative* would maintain the property in its current state and would not result in any changes to the site. This alternative would result in no soils and geology impacts, rather than the less than significant impacts (with mitigation) of the proposed *Vineyards project* and *Annexation Sites*. This alternative would also avoid the potential cumulative mineral resource impact of the *Vineyards project*.

Hydrology, Drainage, and Water Quality

The proposed *Vineyards project* would result in a potentially significant cumulative impact due to substantial changes in drainages patterns that could, in combination with past, present, and future project, result in increased risks of flooding, sedimentation, and/or erosion. Mitigation measures have been recommended to reduce this cumulative impact to a less than significant level.

The potential future development of the *Annexation Sites*, specifically potential development of the community college, would have the potential to result in significant impacts from the changes in drainage patterns and development within a 100-year flood hazard area and dam failure inundation area. Potentially significant cumulative impact due to substantial changes in drainages patterns that could, in combination with past, present, and future project, result in increased risks of flooding, sedimentation, and/or erosion could also potentially occur as a result of development of the *Annexation Sites*.

The *No Project, No Development Alternative* would avoid the introduction of new impervious surfaces (buildings, parking, access roads) to the site. Runoff volumes and rates and the quality of surface runoff would remain at pre-development levels. This alternative would result in no hydrology, water quality, and flooding impacts, rather than the less than significant (with mitigation) project and cumulative impacts of the proposed project

Hazards and Hazardous Materials

The *Vineyards project* would result in significant impacts due to potential to result in an accident causing release of hazardous materials and development on a known hazardous materials site. Mitigation measures have been identified to reduce significant impacts to a less than significant level. Potential future development on the *Annexation Sites* would not result in any project level significant impacts. Potential cumulative impacts could result from the *Vineyards project* and on the *Annexation Sites* due to the potential to cause, in combination with past, present, and future projects, impacts to public health and safety resulting from the use, handling, and transport of hazardous materials.

The *No Project, No Development Alternative* would avoid be less than significant (with mitigation) hazards and hazardous materials impacts that would occur with the *Vineyards project* since no development would occur on the project site. Furthermore, potential long-term risks of hazards and hazardous materials would not occur on the *Annexation Sites*. These sites would not be annexed to the City of Brentwood, nor would General Plan Amendments be processed.

Cultural and Historic Resources

The proposed *Vineyards project* would result in significant impacts through substantial adverse changes in the significance of Archaeological site CA-CCO-548, Historic Resource CCO-675H, and Historic Resource CCO-667H. Potentially significant impacts also would result from the *Vineyards project* potential to disturb previously undiscovered or unknown resources. Mitigation measures have been identified to reduce the significant cultural and historic impacts of the *Vineyards project* to a less than significant level.

The *Annexation Sites* would have the potential to result in potentially significant impacts pertaining to substantial adverse changes in the significance of archaeological resources, destruction of unique paleontological resources or sites, and disturbance to human remains. Mitigation measures have been identified to reduce the potentially significant impacts of the *Annexation Sites* to a less than significant level. The *Annexation Sites* would also have the potential to result in a beneficial effect due to the enabling of improvements to the John Marsh Home.

The *No Project, No Development Alternative* would avoid the significant impacts of the *Vineyards project* and the potentially significant impacts of the *Annexation Sites* as the sites would remain in their existing condition. However, this alternative would also avoid the potentially beneficial impacts of the *Annexation Sites* as well.

Public Services

The proposed *Vineyards project* would result in less than significant impacts related to changes in governmental facilities to maintain acceptable police, fire, school and park facilities and services. The *Annexation Sites* would result in potentially significant project level and cumulative impacts due to changes in governmental facilities necessary to maintain acceptable fire and emergency medical response facilities. Mitigation measures have been identified to reduce the potentially significant impacts of the *Annexation Sites* to a less than significant level.

With the *No Project, No Development alternative*, no development would occur on either the *Vineyards project* site or *Annexation Sites*. Consequently, there would be no increased demand on fire, emergency medical, or police services that would necessitate a change in governmental facilities for such services. The *No Project, No Development alternative* would avoid the less than significant (with mitigation) impacts of the *Annexation Sites*.

Utilities and Service Systems

The proposed *Vineyards project* would result in less than significant impacts with regards to water entitlements, water/wastewater treatment facilities, RWQCB requirements, solid waste disposal, and natural gas and electricity services. The proposed *Annexation Sites* would result in potentially

significant impacts with regard to meeting the RWQCB requirements. No significant cumulative impacts were identified for the *Vineyards project* or the *Annexation Sites*.

The *No Project, No Development Alternative* would maintain the current undeveloped status of the property and would not impact existing utilities or service systems in any manner. This alternative would result in no public utility impacts for the *Vineyards project* and the *Annexation Sites* and avoid the less than significant (with mitigation) impacts pertaining to the *Annexation Sites* ability to meet the RWQCB requirements.

Conclusions

No significant adverse environmental impacts would occur with the *No Project, No Development Alternative*. As such, significant impacts associated with near-term transportation, visual character, light and glare, seismicity, mineral resources, cultural resources, hazards and hazardous materials, biology, air quality, and noise would not result. Also, the potentially significant adverse impacts associated with the *Annexation Sites* would be avoided. However, the *No Project, No Development Alternative* would not meet any of the project objectives, as presented in Section 2.6 of this EIR. In particular, this alternative would not meet any of the City of Brentwood General Plan policy objectives for SPA J (i.e., Project Objectives 1 or 2). It would not meet Objective 5 for the County and City to provide their regional fair share of housing, nor Objective 6 to help alleviate Bay Area housing shortages. Further, the *No Project, No Development alternative* would not fulfill the Cowell Foundation's intended use of the remaining Cowell Ranch land for development purposes. Without development of the *Vineyards project*, the *No Project, No Development alternative* would not meet Objective 9 to concentrate development within the ULL, while maximizing non-urban uses outside the ULL. The unique opportunity of the *Vineyards project* to meet Objective 12 would be lost since no winery; hotel or conference center would be developed. The senior housing, congregate care and active adult living would not be provided to continue to meet the needs of the Brentwood aging population (Objective 13) would not be developed with the *No Project, No Development Alternative*.

Alternative 2 - No Project, Development Under Existing General Plan

Description of Alternative

Vineyards Project: Alternative 2 would not require a General Plan Amendment. Consequently, future development of the 481 acres of land that make up the Vineyards project would be based on the existing land use of Special Planning Area J (SPA J) designations of the Brentwood General Plan. The following land uses would be allowed for development on the Vineyards project site under the existing SPA J land use designation (note, acreages are estimated):

- ❖ Residential Ranchette Estate (0-1.0 du/ac, midrange 0.5 du/ac); approximately 50 acres (approximately 25 du at midrange)
- ❖ Residential Very Low Density (1.1-3.0 du/ac, midrange 2.0 du/ac); approximately 150 acres (approximately 300 du at midrange)
- ❖ Residential Low Density (1.1-5.0 du/ac midrange 3.0 du/ac); approximately 100 acres (approximately 300 du at midrange)

- ❖ Business Park (30 employees per acre); Commercial/Office/Business (COB), Planned Employment Center (PEC), and Industrial Commercial (IC) zoning districts; 41 acres.
- ❖ Urban Reserve; 95 acres

Annexation Sites: Under Alternative 2, the potential community college site and the John Marsh Home site would not be annexed into City boundaries. However the Contra Costa Community College District (CCCCD) could still develop the college on the same site within the unincorporated area of Contra Costa County. The John Marsh Home would not be annexed into the City of Brentwood nor would the land use designations be amended to Park uses. As a result, City services would not be provided to the sites, and City park funds would not be available for use at the John Marsh Home site.

Environmental Analysis

Land Use, Applicable Plans, and Policies

The *Vineyards project* would result in less than significant impacts with regard to land use, applicable plans, and policies. Potential future development on the *Annexation Sites* would also result in less than significant impacts with regard to land use, applicable plans, and policies.

Under *Alternative 2*, there would be no need for the general plan amendments. This alternative would allow development of the Vineyards project site and result in similar land use, applicable plans, and policy impacts as the *Vineyards project*. *Alternative 2* would result in similar impacts as the *Vineyards project* and would not reduce or increase the level of impacts.

City of Brentwood policies listed under Goal 1 of the Land Use Element direct the City to maintain responsible City control of development within the City's planning area and encouraging early annexation and rezoning of lands. If development were to occur on the Annexation Sites under Alternative 2, potential General Plan inconsistencies could arise.

Agricultural Resources

The proposed *Vineyards project* would result in a less than significant impact on agricultural resources. The Vineyards project could result in the conversion of a small amount (fewer than 10 acres) of prime farmland and/or farmland of statewide significance to non-agricultural uses. However, the Vineyards project would also create on the project site 90 new acres of farmland, which would be used for a winery, vineyards and olive groves. The Annexation Sites are not located on prime farmland, farmland of statewide significance, or unique farmland; as a result, the potential future development of the Annexation Sites would not result in a significant impact to agricultural resources.

With *Alternative 2*, development would be allowed on the *Vineyards project* site under the current residential and business park land-uses planned for in SPA J of the City of Brentwood General Plan. Like the Vineyards project, development under existing General Plan direction for the site could potentially result in the conversion of a small amount of prime farmland and/or farmland of statewide importance. However, unlike the Vineyards project, Alternative 2 would not provide the offsetting benefit of creating approximately 90 acres of new farmland on the project site.

Population and Housing

The *Vineyards project* would result in less than significant impacts with regard to population growth and displacement of housing and/or people. Potential future development on the *Annexation Sites* would also result in less than significant impacts with regard to population growth and displacement of housing and/or people.

With *Alternative 2*, development would occur on the *Vineyards project* site consistent with existing General Plan land use designations. As such, *Alternative 2* could result in an additional population of approximately 1,807 persons, based upon a 2.89 person per unit basis (City of Brentwood, 2001a), which would be approximately 1,768 fewer people than the *Vineyards project*.

25 du Residential Ranchette Estate	x	2.89 persons/unit =	73 persons
300 Very Low Density Units	x	2.89 person/unit =	867 persons
300 Residential Low Density	x	2.89 person/unit =	867 persons
Total			1,807 persons

Alternative 2 would generate fewer people than the *Vineyards project*. As with the *Vineyards project*, *Alternative 2* would result in growth in accordance with Brentwood General Plan and ABAG growth projections and, therefore, result in less than significant impacts.

Annexation of the *Annexation Sites* to the City of Brentwood and approval of General Plan amendments would not result in new on-site residences and, therefore, no additional permanent population.

Transportation / Circulation

The *Vineyards project* would result in near-term significant impacts to the following intersections: Balfour Road/SR4 Bypass (Concord Avenue); Balfour Road/Fairview Avenue; Marsh Creek Road/Walnut Boulevard; and Walnut Boulevard/Concord Avenue. No significant long-term impacts were identified with either the *Vineyards project* or the *Annexation Sites*. Mitigation measures have been identified to reduce impacts to the aforementioned intersections to less than significant levels.

Alternative 2 would result in the development of fewer residential units than with the *Vineyards project*. Before Segment 3 of the SR4 Bypass is constructed, three intersections in the *Vineyards project* area would operate at unacceptable levels. This would also occur with *Alternative 2* since unacceptable intersection operations would occur before any project traffic is added to the roadway system. In the Long-term (after Segment 3 of the SR4 Bypass is built), all intersections in the *Vineyards project* area would operate acceptably. This would also occur with *Alternative 2*. Consequently, *Alternative 2* would not avoid significant near-term transportation / circulation impacts, and would not substantially affect the long-term less-than-significant impact.

Air Quality

The construction of the *Vineyards project* would result in significant short-term air quality impacts, operational air quality impacts, and cumulative air quality impacts. Operational and cumulative air

quality impacts would remain significant and unavoidable. Mitigation measures have been identified to reduce short-term air quality impacts to a less than significant level.

Potential future development of the *Annexation Sites* would result in potentially significant short-term air quality impacts, operational air quality impacts, and cumulative air quality impacts. Operational and cumulative air quality impacts would remain significant and unavoidable. Mitigation measures have been identified to reduce short-term air quality impacts to a less than significant level.

Alternative 2 would require a similar extent of grading and construction as the proposed *Vineyards project* and would therefore result in similar short-term construction related air quality impacts and would require similar mitigation measures as the proposed project.

The reduced population generated by the *Alternative 2* project would generate ROG, NO_x, and PM₁₀ project emissions that would not exceed BAAQMD Guidelines in the near-term and, therefore, would result in a less than significant near-term operational impact. However, in the long-term a significant impact would potentially remain with regard to ROG and PM₁₀ project emissions, assuming a 50% reduction in population correlates approximately to a 50% reduction in project emissions. Therefore, a significant and unavoidable impact can be anticipated to remain with *Alternative 2*, similar to the proposed *Vineyards project*.

With *Alternative 2*, the *Annexation Sites* would be the same as the proposed project as the potential community college could still be developed by the CCCCD and, therefore, would result in similar impacts and require similar mitigation. The CCCCD is a State entity and, therefore, is not required to abide by the local city and county General Plan and zoning regulation.

Noise

The *Vineyards project* would result in significant short-term construction noise impacts and external noise impacts on the *Vineyards project*. The *Annexation Sites* would also result in short-term construction noise impacts. Mitigation measures have been identified to reduce the short-term construction noise impacts of the *Vineyards project* and *Annexation Sites* and external noise impacts of the *Vineyards project* to a less than significant level.

With *Alternative 2*, similar construction noise impacts would occur as development would occur across a similar extent of the site with the potential to generate similar noise levels. Also, the external noise impacts on development on the site would remain in that residences would be constructed adjacent to the PG&E plant with *Alternative 2*. Similar impacts would result and similar mitigation measures would be required.

The short term construction noise impacts of the *Annexation Sites* would remain with *Alternative 2* in that the community college would still be able to be built by the CCCCD, which is a State entity and, therefore, is not required to abide by the General Plan and zoning requirements of the City of Brentwood and/or Contra Costa County. Similar mitigation measures would be required for the *Annexation Sites* under *Alternative 2*.

Aesthetics / Visual Resources

Construction of the *Vineyards project* would result in visual changes on the site from undeveloped open space to an urbanized development. The proposed *Vineyards project* would result in a significant impact with regard to the degradation of visual character. The *Vineyards project* would also result in the introduction of light and glare to the site. Mitigation measures have been identified that reduce light and glare and visual character impacts to a less than significant level.

The potential future development on the *Annexation Sites* would potentially result in similar significant visual character and light and glare on the community college site. Mitigation measures have been identified to reduce the impacts to a less than significant level.

Alternative 2 would result in similar light and glare and visual character effects as the proposed *Vineyards project* and *Annexation Sites*. Similar mitigation measures would be required to achieve a high-quality landscape and design, and to mitigate light and glare impacts. This alternative would develop residential uses at a lower density and, like the proposed project, result in a change of the visual character of the site and introduce new sources of light and glare. *Alternative 2* would allow the development of a business park on the *Vineyards project* site as well. The community college could potentially still be developed, though the site would remain in the unincorporated area of Contra Costa County jurisdiction.

Alternative 2 would result in essentially the same visual and light and glare effects as the proposed *Vineyards project* and *Annexation Sites*. This alternative would not reduce the less than significant visual impacts (with mitigation) of the proposed project to a level of no impact.

Biological Resources

The proposed *Vineyards project* and *Annexation Sites* would result in significant impacts to the following biological resources:

- ❖ Vernal pool brachiopods, curved-foot hygrotus diving beetle and molestan blister beetle;
- ❖ Special-status plants (e.g., stinkbells, hogwallow starfish, spearscale and big tarplant);
- ❖ California tiger salamander;
- ❖ California red-legged frog;
- ❖ Western pond turtle;
- ❖ Nesting raptors;
- ❖ Burrowing owls;
- ❖ Swainson's hawk;
- ❖ Nesting special-status passerines;
- ❖ Special-status bat species;
- ❖ San Joaquin kit fox.

In addition, the *Vineyards project* would result in significant impacts due to the loss of alkali meadow, temporary aquatic habitat impacts, tree removal, and loss of seasonal wetlands. Mitigation measures have been identified to reduce the significant biological resource impacts of the proposed *Vineyards project* and the *Annexation Sites* to a less than significant level.

Alternative 2 would result in essentially the same impacts as the proposed *Vineyards project*. With *Alternative 2* a similar extent of site development would occur. The development would be at a lower density and, therefore some resources could potentially be avoided. However, the construction activities necessary and the amount of site development and landscaping would likely result in impacts at essentially the same intensity as the proposed project.

Impacts on the *Annexation Sites* would be the same as with the proposed project in that the community college could still be developed under this alternative, and therefore, similar impacts would result.

Geology, Soils, Seismicity and Mineral Resources

The proposed *Vineyards project* would have significant impacts with regards to the potential to expose people and structures to geologic hazards, such as strong ground shaking during an earthquake and expansive soils. Also, development of the *Vineyards project* would result in potential development on a mineral resource of regional importance, Domengine Sandstone, resulting in a significant project impact and potentially significant cumulative impact. Mitigation measures have been identified to reduce the significant geologic, soils, seismicity, and mineral resource impacts of the proposed *Vineyards project* to a less than significant level.

The potential future development on the *Annexation Sites* would result in potentially significant impacts with regards to the potential to expose people and structures to geologic hazards, such as fault rupture, ground failure, strong ground shaking during an earthquake, expansive soils, and fault rupture. Mitigation measures have been identified to reduce these impacts to a less than significant level.

Alternative 2 would result in similar impacts as the proposed project as development on both the *Vineyards project* site and the *Annexation Sites* would still be possible as the community college would be developed by the CCCCD which is under State jurisdiction. Development under *Alternative 2* would require similar mitigation measures. While the geologic risks would still be present with *Alternative 2*, fewer people would be exposed to the risks due to the decreased development density. However, impacts related to geology, soils, seismicity, and mineral resources would still be considered significant. This alternative would not avoid or reduce the less than significant (with mitigation) soils, geology, and mineral resource impacts of the *Vineyards project* and/or *Annexation sites* to a level of no impact.

Hydrology, Drainage, and Water Quality

The proposed *Vineyards project* would result in a potentially significant cumulative impact due to substantial changes in drainages patterns that could, in combination with past, present, and future project, result in increased risks of flooding, sedimentation, and/or erosion. Mitigation measures have been recommended to reduce this cumulative impact to a less than significant level.

The potential future development of the *Annexation Sites*, specifically potential development of the community college, would have the potential to result in significant impacts from the changes in drainage patterns and development within a 100-year flood hazard area and dam failure inundation area. Potentially significant cumulative impact due to substantial changes in drainages patterns that could, in combination with past, present, and future project, result in increased risks of flooding, sedimentation, and/or erosion could also potentially occur as a result of development of the *Annexation Sites*.

Alternative 2 would have the potential to result in similar impacts as the proposed *Vineyards project* and *Annexation Sites*. Development of the community college would still be possible on the same site, though the site would remain in the unincorporated area of Contra Costa County. The CCCCD is under State jurisdiction and, therefore, is not required to abide by the General Plan and zoning requirements of Contra Costa County. Similar impacts associated with cumulative drainage impacts and development in a 100-year flood zone and dam inundation area would result with regard to the community college site, assuming the CCCCD still has the desire to build on the site under this alternative.

Development on the *Vineyards project* site under the existing General Plan direction for the SPA J area would have the potential to result in similar impacts as the proposed project. The Contra Costa Flood Control and Water Conservation District (CCFDWCD) has identified that the downstream drainage facilities from the *Vineyards project* site are currently operating at capacity. Development as described under *Alternative 2* would have the potential to result in increased runoff rates and flows. The proposed *Vineyards project* includes development of water quality and detention basins to manage runoff from the site in a manner that does not result in downstream impacts. Similar measures would need to be included in the *Alternative 2* project or required as mitigation. As with the proposed project, the potential for cumulative impacts would be present under *Alternative 2* and similar mitigation measures would be required.

Alternative 2 would require either similar measures proposed as part of the project, or required through mitigation, in order to handle runoff from the site. Similar impacts would result in the *Annexation Sites*. *Alternative 2* would not avoid or reduce the less than significant (with mitigation) project level and cumulative impacts of the proposed project to a level of no impact.

Hazards and Hazardous Materials

The *Vineyards project* would result in significant impacts due to potential to result in an accident causing release of hazardous materials and development on a known hazardous materials site. Mitigation measures have been identified to reduce significant impacts to a less than significant level. Potential future development on the *Annexation Sites* would not result in any project level significant impacts. Potential cumulative impacts could result from the *Vineyards project* and on the *Annexation Sites* due to the potential to cause, in combination with past, present, and future projects, impacts to public health and safety resulting from the use, handling, and transport of hazardous materials.

The *Vineyards project* site could be developed under *Alternative 2* in accordance with existing General Plan land uses. As such, grading and earthmoving would occur and have the same potential for hazardous materials accidents as the proposed *Vineyards project*. Development under *Alternative 2* could, potentially, result in more hazards/hazardous materials impacts than with the *Vineyards project*.

This is because the *Vineyards project* is designed around existing pipelines, using them as a “constraint” to the location of development areas. Since, however, the pipelines are mapped, it would be expected that any development under *Alternative 2* would similarly avoid the locations of pipelines and, therefore, result in similar impacts as the *Vineyards project*.

The *Annexation Sites* would undergo annexation to the City of Brentwood and General Plan amendments thereby allowing for potential future development of these sites. Similar mitigation measures would be required under *Alternative 2* and, therefore, result in similar impacts as with the proposed project.

Cultural and Historic Resources

The proposed *Vineyards project* would result in significant impacts through substantial adverse changes in the significance of Archaeological site CA-CCO-548, Historic Resource CCO-675H, and Historic Resource CCO-667H. Potentially significant impacts also would result from the *Vineyards project* potential to disturb previously undiscovered or unknown resources. Mitigation measures have been identified to reduce the significant cultural and historic impacts of the *Vineyards project* to a less than significant level.

The *Annexation Sites* would have the potential to result in potentially significant impacts pertaining to substantial adverse changes in the significance of archaeological resources, destruction of unique paleontological resources or sites, and disturbance to human remains. Mitigation measures have been identified to reduce the potentially significant impacts of the *Annexation Sites* to a less than significant level. The *Annexation Sites* would also have the potential to result in a beneficial due to the enabling of improvements to the John Marsh Home.

With *Alternative 2* similar significant and potentially significant impacts would occur with the *Vineyards project* and the *Annexation Sites* as a similar extent of grading would be conducted with the potential to result in disturbance to cultural and historic resources. Similar mitigation measures would be required for *Alternative 2* as with the proposed project. The John Marsh Home could still potentially be improved, and therefore the identified potentially beneficial impact of the proposed project would remain. However, without the provision of City services and park fees, improvements to the John Marsh Home could be delayed and may be less likely to occur.

Public Services

The proposed *Vineyards project* would result in less than significant impacts related to changes in governmental facilities to maintain acceptable police, fire, school and park facilities and services. The *Annexation Sites* would result in potentially significant project level and cumulative impacts due to changes in governmental facilities necessary to maintain acceptable fire and emergency medical response facilities. Mitigation measures have been identified to reduce the potentially significant impacts of the *Annexation Sites* to a less than significant level.

With *Alternative 2*, development would occur on the *Vineyards project* site consistent with existing General Plan land use designations. As such, *Alternative 2* could result in an additional population of approximately 1,807 persons, or approximately 1,768 fewer people than the *Vineyards project*.

Alternative 2 would generate fewer people than the *Vineyards project*. As the *Vineyards project* would result in less than significant public service impacts, it can be anticipated that the *Alternative 2* project would similarly result in less than significant impacts.

The less than significant impact (with mitigation) identified on the *Annexation Sites* would be avoided with *Alternative 2* as the sites would not be annexed and, therefore, would not be serviced by Brentwood agencies. However, *Alternative 2* would potentially result in additional significant impacts as emergency response services would need to be provided to the *Annexation Sites* by other entities.

Utilities and Service Systems

The proposed *Vineyards project* would result in less than significant impacts with regards to water entitlements, water/wastewater treatment facilities, RWQCB requirements, solid waste disposal, and natural gas and electricity services. The proposed *Annexation Sites* would result in potentially significant impacts with regard to meeting the RWQCB requirements. No significant cumulative impacts were identified for the *Vineyards project* or the *Annexation Sites*.

With *Alternative 2*, the *Vineyards project* site would be annexed into the City and would result in a similar demand on City utilities as the proposed project. The *Annexations Sites* could still potentially be developed with a community college, but as the site would not be annexed into the City it would not create new demands on City utilities. On-site utilities would have to be developed. Considering the amount of development possible under *Alternative 2*, potentially greater impacts could arise such as excessive groundwater pumping and water quality impairments (sewage treatment and disposal).

The impact pertaining to the *Annexation Sites* ability to meet RWQCB requirements would remain under *Alternative 2*.

Conclusions

Significant Environmental Impacts

Under *Alternative 2*, there would be no need for the general plan amendments on either the *Vineyards project* site or *Annexation Sites*. This alternative would have the potential to result in new significant land use, applicable plans, and policy impacts. City of Brentwood policies listed under Goal 1 of the Land Use Element direct the City to maintain responsible City control of development with the City's planning area and encouraging early annexation and rezoning of lands. If development were to occur on the *Annexation Sites* under *Alternative 2*, potential General Plan inconsistencies could arise. Annexation of the *Annexation Sites* to the City of Brentwood and approval of General Plan amendments would not result in new on-site residences and, therefore, no additional permanent population.

This alternative would result in essentially the same visual impacts and require similar mitigation measures as for the proposed *Vineyards project* and *Annexation Sites*. This alternative would also require a similar extent of grading with the potential to result in similar less than significant (with mitigation) impacts to cultural resources.

Under Alternative 2, fewer people would be exposed to geologic/seismic risks due to the decreased development density. However, impacts related to seismicity and mineral resources would still be considered significant as with the *Vineyards project*.

With *Alternative 2*, the *Vineyards project* site and the *Annexation Sites* would be not annexed into the City, therefore City utilities would not be extended to serve the site and no new demand would result on City utilities. On-site utilities would have to be developed. Considering the amount of development possible under *Alternative 2*, potentially greater impacts could arise such as excessive groundwater pumping and water quality impairments (sewage treatment and disposal).

Advantages/Disadvantages

The *advantage* of *Alternative 2* is that it may require less governmental review since no General Plan amendments would be required. However, this alternative would still require City approval of a Planned Development (since it is in SPA J) and annexation into the City of Brentwood.

The *disadvantages* of *Alternative 2* are that the range of housing types would be minimal and it would not offer the affordable housing options of multi-family residences or senior apartments as the proposed *Vineyards project*. Furthermore, the housing needs of adults who require congregate care facilities would not be met with *Alternative 2*. Moreover, the amount of housing provided under *Alternative 2* would be much less than that of the proposed project and would not contribute to alleviating the Bay Area housing shortage to the same degree as the proposed *Vineyards project*. Another disadvantage of *Alternative 2* is that it would not create approximately 90 acres of farmland on the project site.

A further *disadvantage* of *Alternative 2* is that the community college and John Marsh Home sites would not be annexed into the City. As a result, these potential uses would not be served by the City of Brentwood. The potential for the City of Brentwood to contribute park fees to the restoration of the John Marsh Home would not occur with this alternative, as the historic park site would not be annexed into the City.

The *Vineyards project* will provide a much needed 4 million gallon water storage tank, even though the project itself only requires 2 million gallons of storage. Under *Alternative 2*, this much needed additional City water storage capacity would not be provided and would be considered a substantial *disadvantage* of this alternative.

Project Objectives/Feasibility of Alternative

Alternative 2 would not meet a number of project objectives that would be met with the *Vineyards project* and *Annexation sites*.

Without a specific land plan for the *Vineyards project* site, the City of Brentwood would not be assured that project objective 4 would be met which would provide for potential future infrastructure connection to the community college site. Project objective 8 would not be met without the *Vineyards project* in that the Cowell Foundation's long-term plan for all of the Cowell Ranch property included urban development on 481 acres of land, which composes the *Vineyards project* site. The *Vineyards*

project also specifically fulfills project objective numbers 10, 11 and 12 that would otherwise not be met with Alternative 2.

Moreover, the Vineyards project generally provides for housing consistent with City of Brentwood and ABAG projections. As such, the ability for Alternative 2 to meet project objectives 5 and 6 would not be assured without knowing what specific land uses would be developed.

Alternative 3 – Alternative Residential Layout

Description of Alternative

Vineyards Project: With *Alternative 3*, a total of 1,168 residential units would be developed on the project site along with a 70-acre industrial use (Exhibit 6-1). This development would not be phased with the completion of SR 4, as would the Vineyards project. The residential lots would range in size from 6,000 s.f. (1,029 lots), to 8,000-s.f. (38 lots), and finally to 10,000-s.f. (101 lots). 70 acres of light industrial use would be developed along the eastern side (adjacent to the Highway 4 bypass). A 32-ac. open space feature would be located in the interior of the sit and connect to an internal greenbelt/bike and trail corridor. Additional open space would be provided around the site periphery. *Alternative 3* would include more development site coverage than the proposed project. As with the proposed project, *Alternative 3* would require annexation, a General Plan amendment (from Business Park to Residential), rezoning, and design review.

Alternative 3 is a development plan previously considered on the Vineyards project site. It is evaluated to determine whether residential units that are fewer in number than the proposed project but are not active adult units, and building industrial uses rather than the proposed mixed use commercial area, would reduce or eliminate any significant impacts of the Vineyards project.

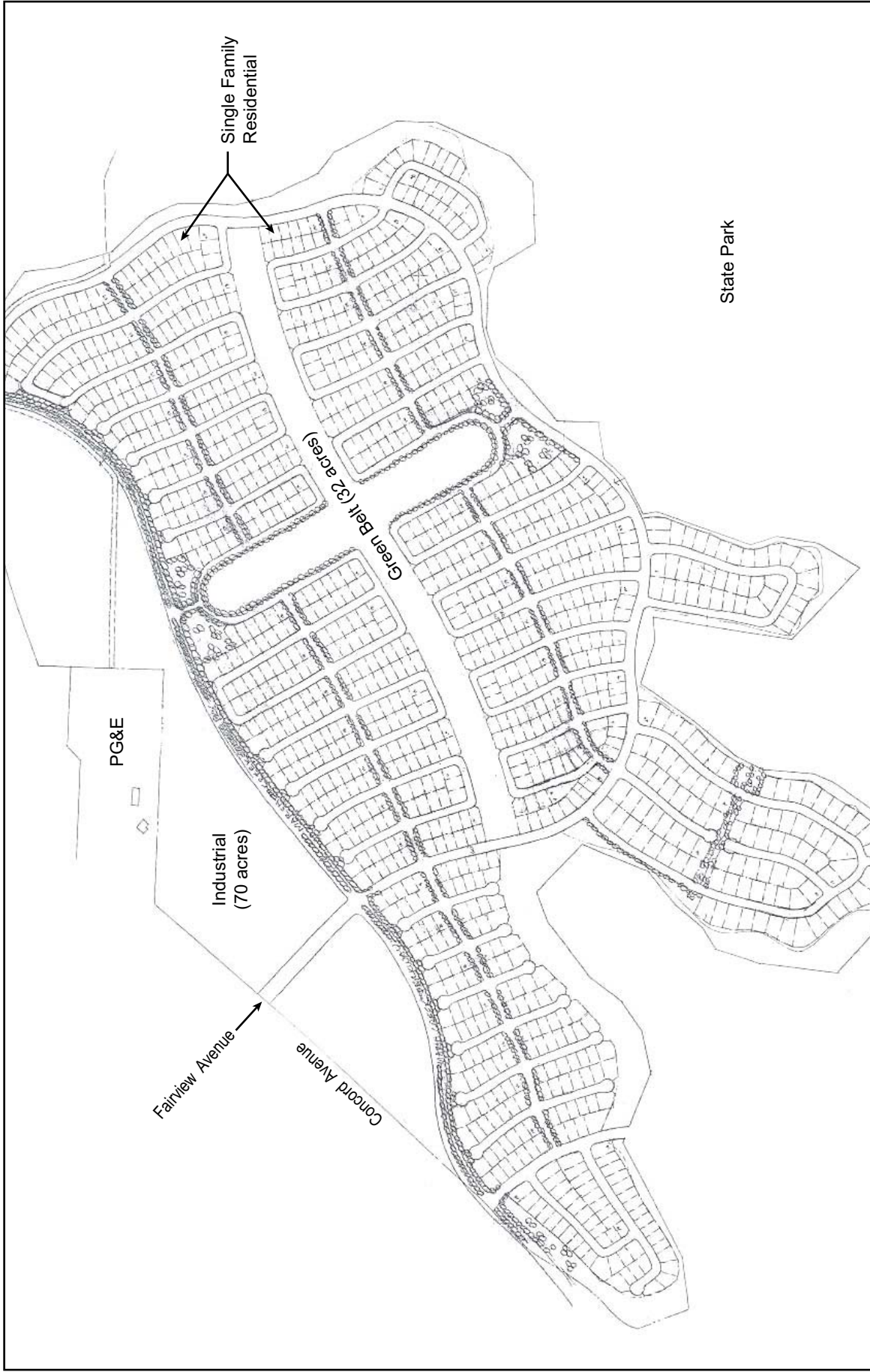
Annexation Sites: The *Annexation Sites* would, as with the proposed project, be annexed into the City of Brentwood. The General Plan land use of the community college would be amended from Business Park to Schools – Community College, as with the proposed project. The John Marsh Home General Plan designations would be amended from Business Park to Parks, similar to the proposed project.

Environmental Analysis

Land Use, Applicable Plans, and Policies

The *Vineyards project* would result in less than significant impacts with regard to land use, applicable plans, and policies. Potential future development on the *Annexation Sites* would also result in less than significant impacts with regard to land use, applicable plans, and policies.

Alternative 3 would potentially result in significant impacts related to inconsistencies with General Plan policies in that this alternative would potentially require development and grading along ridgelines. Also, the *Alternative 3* project would primarily be residential and not the mixed-use projects encouraged by the General Plan and SPA J. Therefore, the potential for the *Alternative 3* project to result in significant land use, planning, and policy impacts on the Vineyards project site is greater with *Alternative 3*. This alternative would result in essentially the same impacts in relation to the *Annexation Sites*.



Source: Frisbee Planning (2000)



Not to scale

11/06/03 JIN 95-100230

THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Alternative 3 - Alternative Residential Layout

Exhibit 6-1

Agricultural Resources

The proposed *Vineyards project* would result in a less than significant impact on agricultural resources. The *Vineyards project* could result in the conversion of a small amount (fewer than 10 acres) of prime farmland and/or farmland of statewide significance to non-agricultural uses. However, the *Vineyards project* would also create on the project site 90 new acres of farmland, which would be used for a winery, vineyards and olive groves. The *Annexation Sites* are not located on prime farmland, farmland of statewide significance, or unique farmland; as a result, the potential future development of the *Annexation Sites* would not result in a significant impact to agricultural resources.

Like the *Vineyards project*, *Alternative 3* could potentially result in the conversion of a small amount of prime farmland and/or farmland of statewide importance. However, unlike the *Vineyards project*, *Alternative 3* would not provide the offsetting benefit of creating approximately 90 acres of new farmland on the project site.

Population and Housing

The *Vineyards project* would result in less than significant impacts with regard to population growth and displacement of housing and/or people. Potential future development on the *Annexation Sites* would also result in less than significant impacts with regard to population growth and displacement of housing and/or people.

Alternative 3 would generate an estimated 3,375 people (1,168 du at 2.89 per unit). This population would be approximately 208 fewer people than would be generated by the *Vineyards project*. As with the *Vineyards project*, *Alternative 3* would result in growth in accordance with Brentwood General Plan and ABAG growth projections and, therefore, result in less than significant impacts. Similar impacts would occur on the *Annexation Sites* with *Alternative 3* as the annexation of the sites and the potential development could still occur.

Alternative 3 would result in similar less than significant impacts as the proposed *Vineyards project* and *Annexation Sites*.

Transportation / Circulation

The *Vineyards project* would result in near-term significant impacts to the following intersections: Balfour Road/SR4 Bypass (Concord Avenue); Balfour Road/Fairview Avenue; Marsh Creek Road/Walnut Boulevard; and Walnut Boulevard/Concord Avenue. No significant long-term impacts were identified with either the *Vineyards project* or the *Annexation Sites*. Mitigation measures have been identified to reduce impacts to the aforementioned intersections to less than significant levels.

As with the Near-Term Without *Vineyards project*, *Alternative 3* intersections would operate at the same unacceptable levels at the same locations until Segment 3 of the SR4 Bypass was built because these intersection “failures” occur before any project traffic is added to the roadway network.

Alternative 3 would include fewer single-family homes (1,168) than the *Vineyards project* (1,400), which also includes multi-family housing and congregate care facilities. The *Alternative 3* residential would be traditional single family homes, whereas the majority of the *Vineyards project* would be designed for active adult/senior residents. Active adult/senior housing results in fewer trips per

dwelling unit than “traditional” single family because typically active adult housing does not include at-home children or driver-aged children which may require either additional automobiles and/or more trips to tend to family needs. Consequently, active adult and/or senior residential uses generate approximately 40% of the trips (average between AM and PM peak hours) than traditional single-family homes. Rough calculations indicate that – at buildout - *Alternative 3* would result in 14% more trips associated with single-family residential than the *Vineyards project*.

Alternative 3 and the *Vineyards projects* would both rely on Fairview Avenue as the primary transportation “spine.” Consequently, the same intersections would operate unacceptably in the vicinity of *Alternative 3* as they would the Near-term *Vineyards project* and similar (or greater) impacts would result.

Moreover, due to the types of uses for *Alternative 3* (primarily residential, with some industrial), the *Alternative* does not allow for “internalization” of trips that would occur in the long-term with the *Vineyards project*. At the *Vineyards project*, a driver could go to multiple destinations (e.g., shopping, cafes, recreation center, amphitheater) on a trip without leaving the project site. This would not occur with *Alternative 3*. Consequently, *Alternative 3* would generate a far greater number of daily trips than the *Vineyards project* in the Long-term.

The Long-term (Year 2025) *Vineyards project* would not generate significant traffic impacts. However, it is possible that *Alternative 3* may result in new significant long-term traffic impacts that would not occur with the *Vineyards project*. This is because *Alternative 3* would increase trips along Fairview Avenue (for residents commute travel) and provides industrial uses at the northern part of the site that provide employment to on and offsite workers. As such, *Alternative 3* is anticipated to load more traffic onto the northern end of Fairview Avenue or in the vicinity of the Balfour Road/SR 4 Bypass (Concord Avenue) and Balfour Road/Fairview Avenue intersections. With *Alternative 3*, these intersections could operate at insufficient levels in the long-term. As such, *Alternative 3* could result in additional significant impacts at these two intersections in the long-term that would not result with the *Vineyards project*.

Air Quality

The construction of the *Vineyards project* would result in significant short-term air quality impacts, operational air quality impacts, and cumulative air quality impacts. Operational and cumulative air quality impacts would remain significant and unavoidable. Mitigation measures have been identified to reduce short-term air quality impacts to a less than significant level.

Potential future development of the *Annexation Sites* would result in potentially significant short-term air quality impacts, operational air quality impacts, and cumulative air quality impacts. Operational and cumulative air quality impacts would remain significant and unavoidable. Mitigation measures have been identified to reduce short-term air quality impacts to a less than significant level.

Alternative 3 would result in a similar extent of grading and construction on the *Vineyards project* site and would, therefore, result in similar short-term construction related air quality impacts and require similar mitigation measures.

The *Alternative 3* project would generate approximately 208 fewer people than the *Vineyards project*. This reduction in population would not be substantial enough to reduce the significant and unavoidable operational air quality impacts to a less than significant level. Furthermore, *Alternative 3* would result in residential development across the entire *Vineyards project* site and would therefore eliminate the potential “internalization” of trips that would occur in the long-term with the *Vineyards project*. At the *Vineyards project*, a driver could go to multiple destinations (e.g., shopping, cafes, recreation center, amphitheater) on a trip without leaving the project site. This would not occur with *Alternative 3*. Consequently, *Alternative 3* would generate a far greater number of daily trips than the *Vineyards project* in the Long-term and, therefore, result in greater vehicle emissions and increased degradation of air quality.

With *Alternative 3*, the *Annexation Sites* would be the same as the proposed project and, therefore, would result in similar significant and unavoidable impacts and require similar mitigation.

Noise

The *Vineyards project* would result in significant short-term construction noise impacts and external noise impacts on the *Vineyards project*. The *Annexation Sites* would also result in short-term construction noise impacts. Mitigation measures have been identified to reduce the short-term construction noise impacts of the *Vineyards project* and *Annexation Sites* and external noise impacts of the *Vineyards project* to a less than significant level.

With *Alternative 3*, similar construction noise impacts would occur as development would occur across a similar extent of the site with the potential to generate similar noise levels. Also, the external noise impacts on development on the site would remain in that residences would be constructed adjacent to the PG&E plant with *Alternative 3*. Similar impacts would result and similar mitigation measures would be required.

The short-term construction noise impacts of the *Annexation Sites* would remain with *Alternative 3* in that the *Annexation Sites* proposal would be the same as with the proposed project.

Aesthetics / Visual Resources

Construction of the *Vineyards project* would result in visual changes on the site from undeveloped open space to an urbanized development. The proposed *Vineyards project* would result in a significant impact with regard to the degradation of visual character. The *Vineyards project* would also result in the introduction of light and glare to the site. Mitigation measures have been identified that reduce light and glare and visual character impacts to a less than significant level.

The potential future development on the *Annexation Sites* would potentially result in similar significant visual character and light and glare on the community college site. Mitigation measures have been identified to reduce the impacts to a less than significant level.

Alternative 3 would result in the same visual impacts on the *Annexation Sites* as the potential development of the community college and the annexation and General Plan amendments of the site would still occur.

Alternative 3 would also have the potential to result in similar impacts as the *Vineyards project*, but would also potentially introduce new visual impacts. *Alternative 3* predominately proposes low density housing with essentially uniform lot sizes. The site plan shown as Exhibit 6-1 would require extensive grading and development on the sites ridgelines with potentially substantial changes in the site topography. In addition, the uniformity of the lot sizes and residential uses across the site could result in a potential visual impact. Moreover, *Alternative 3* sites 70 acres of light industrial land uses along the SR4 Bypass at Fairview Avenue. The location of this light industrial land use is highly visible and would have the potential to result in greater visual impacts. Views of the foothills beyond the project site and of the Diablo Range would potentially be obscured by either the light industrial land uses, or the construction of residences along the sites ridgelines.

Alternative 3 would result in similar impacts on the *Annexation Sites and Vineyards project* site, with the potential for additional impacts on the *Vineyards project* site due to hillside grading, ridgeline development, and development of light industrial uses adjacent to residential neighborhoods and the SR4 Bypass. *Alternative 3* would not avoid or reduce the less than significant (with mitigation incorporated) impacts of the proposed project to a less than significant level.

Biological Resources

The proposed *Vineyards project* and *Annexation Sites* would result in significant impacts to the following biological resources:

- ❖ Vernal pool brachiopods, curved-foot hygrotus diving beetle and molestan blister beetle;
- ❖ Special-status plants (e.g., stinkbells, hogwallow starfish, spearscale and big tarplant);
- ❖ California tiger salamander;
- ❖ California red-legged frog;
- ❖ Western pond turtle;
- ❖ Nesting raptors;
- ❖ Burrowing owls;
- ❖ Swainson's hawk;
- ❖ Nesting special-status passerines;
- ❖ Special-status bat species;
- ❖ San Joaquin kit fox.

In addition, the *Vineyards project* would result in significant impacts due to the loss of alkali meadow, temporary aquatic habitat impacts, tree removal, and loss of seasonal wetlands. Mitigation measures have been identified to reduce the significant biological resource impacts of the proposed *Vineyards project* and the *Annexation Sites* to a less than significant level.

Alternative 3 would result in essentially the same level of biological resource impacts as the proposed *Vineyards project* and would require similar mitigation measures. This alternative would require development across a similar extent of the site that would result in tree removal, loss of sensitive

habitats, and displacement of special status species at the same level as the proposed *Vineyards project*.

The same potential for development of the *Annexation Sites* would exist with *Alternative 3* and, therefore, the same level of impact can be anticipated and similar mitigation measures would be required.

Geology, Soils, Seismicity and Mineral Resources

The proposed *Vineyards project* would have significant impacts with regards to the potential to expose people and structures to geologic hazards, such as strong ground shaking during an earthquake and expansive soils. Also, development of the *Vineyards project* would result in potential development on a mineral resource of regional importance, Domengine Sandstone, resulting in a significant project impact and potentially significant cumulative impact. Mitigation measures have been identified to reduce the significant geologic, soils, seismicity, and mineral resource impacts of the proposed *Vineyards project* to a less than significant level.

The potential future development on the *Annexation Sites* would result in potentially significant impacts with regards to the potential to expose people and structures to geologic hazards, such as fault rupture, ground failure, strong ground shaking during an earthquake, expansive soils, and fault rupture. Mitigation measures have been identified to reduce these impacts to a less than significant level.

Alternative 3 would result in similar impacts and would require similar mitigation measures as the proposed *Vineyards project* and potential future development of the *Annexation Sites*. Development would occur over the same amount of land as with the proposed *Vineyards project*. The same potential for development would also exist with the *Annexation Sites*. *Alternative 3* would result in a greater amount of grading on slopes and ridgelines, which would have the potential to result in greater geologic and soil instability, landslides, and erosion and would result in substantial changes to the site topography. *Alternative 3* would not avoid reduce the less than significant (with mitigation) impacts of the proposed *Vineyards project* and *Annexation Sites* to a level of no impact, and could potentially result in additional impacts requiring further mitigation.

Hydrology, Drainage, and Water Quality

The proposed *Vineyards project* would result in a potentially significant cumulative impact due to substantial changes in drainages patterns that could, in combination with past, present, and future project, result in increased risks of flooding, sedimentation, and/or erosion. Mitigation measures have been recommended to reduce this cumulative impact to a less than significant level.

The potential future development of the *Annexation Sites*, specifically potential development of the community college, would have the potential to result in significant impacts from the changes in drainage patterns and development within a 100-year flood hazard area and dam failure inundation area. Potentially significant cumulative impact due to substantial changes in drainages patterns that could, in combination with past, present, and future project, result in increased risks of flooding, sedimentation, and/or erosion could also potentially occur as a result of development of the *Annexation Sites*.

Alternative 3 would result in development across the same area as the proposed *Vineyards project*. However, *Alternative 3* would require a greater extent of grading on hillsides and ridgelines with the potential to result in changes to the site topography in a manner that could result in additional erosion and sedimentation impacts. *Alternative 3* would result in increased rates and flow of runoff from the site that could overtax downstream drainage facilities. Detention basins, or other effective measures, would need to be incorporated into the *Alternative 3* to manage runoff in a manner that did not result in offsite flooding, erosion, or siltation. Similarly, water quality basins would also need to be proposed to treat stormwater runoff entering Marsh Creek. If such measures were not included in the project proposal, or determined to be insufficient to adequately handle the runoff of the project, a significant impact would occur and further mitigation would be required.

With *Alternative 3*, potential future development of the *Annexation Sites* would be the same as with the proposed project and, therefore, would result in similar impacts.

Alternative 3 would not avoid or reduce the less than significant (with mitigation) project and cumulative impacts of the proposed project to a level of no impact. Additional significant impacts could occur under *Alternative 3* with regard to the potential for runoff from the site to overtax downstream drainage facilities and increase sedimentation of Marsh Creek.

Hazards and Hazardous Materials

The *Vineyards project* would result in significant impacts due to potential to result in an accident causing release of hazardous materials and development on a known hazardous materials site. Mitigation measures have been identified to reduce significant impacts to a less than significant level. Potential future development on the *Annexation Sites* would not result in any project level significant impacts. Potential cumulative impacts could result from the *Vineyards project* and on the *Annexation Sites* due to the potential to cause, in combination with past, present, and future projects, impacts to public health and safety resulting from the use, handling, and transport of hazardous materials.

Development under the *Alternative 3* would result in greater hazards and hazardous materials impacts than with the *Vineyards project*. While the *Vineyards project* has designed land uses around the pipelines, *Alternative 3* distributes housing more evenly over the entire project site (refer to Exhibit 6-1). The distribution of development for *Alternative 3* would require more grading which would increase the chances of accidental damage to underground pipelines and underground leaks. Moreover, the *Vineyards project* would use “on-site staging” areas during construction and would, therefore, minimize offsite transport of hazardous materials. On-site staging of construction equipment could occur on *Alternative 3* for a time, but due to the distribution of development, the land use plan would require off-site storage of construction equipment and vehicles before construction was complete.

Alternative 3 would not avoid or reduce the less than significant (with mitigation) project and/or cumulative impacts of the proposed project to a level of no impact and could increase the potential for damage to onsite pipelines.

Cultural and Historic Resources

The proposed *Vineyards project* would result in significant impacts through substantial adverse changes in the significance of Archaeological site CA-CCO-548, Historic Resource CCO-675H, and Historic Resource CCO-667H. Potentially significant impacts also would result from the *Vineyards project* potential to disturb previously undiscovered or unknown resources. Mitigation measures have been identified to reduce the significant cultural and historic impacts of the *Vineyards project* to a less than significant level.

The *Annexation Sites* would have the potential to result in potentially significant impacts pertaining to substantial adverse changes in the significance of archaeological resources, destruction of unique paleontological resources or sites, and disturbance to human remains. Mitigation measures have been identified to reduce the potentially significant impacts of the *Annexation Sites* to a less than significant level. The *Annexation Sites* would also have the potential to result in a beneficial due to the enabling of improvements to the John Marsh Home.

With *Alternative 3* similar significant and potentially significant impacts would occur with the *Vineyards project* and the *Annexation Sites* as a similar extent of grading would be conducted with the potential to result in the same level of intensity of disturbance to cultural and historic resources. Similar mitigation measures would be required for *Alternative 2* as with the proposed project.

Public Services

The proposed *Vineyards project* would result in less than significant impacts related to changes in governmental facilities to maintain acceptable police, fire, school and park facilities and services. The *Annexation Sites* would result in potentially significant project level and cumulative impacts due to changes in governmental facilities necessary to maintain acceptable fire and emergency medical response facilities. Mitigation measures have been identified to reduce the potentially significant impacts of the *Annexation Sites* to a less than significant level.

Alternative 3 would generate an estimated 3,375 people (1,168 du at 2.89 per unit). This population would be approximately 208 fewer people than would be generated by the *Vineyards project*. *Alternative 3* would, however, also include an approximately 70-acre industrial use. The industrial use would generate demands on public services beyond those of the proposed project associated with the industrial use and potential for the risk of industrial accidents and the need for additional security. Given the nearly equivalent number of residents that would be generated by *Alternative 3* but additional demands on fire, emergency medical and police services, *Alternative 3* could result in significant impacts to these public services.

The *Annexation Sites* would be annexed into the City of Brentwood and approved for General Plan amendments. Potential public services impacts would be the same for *Alternative 3* as for the *Vineyards project*. *Alternative 3* would not avoid or reduce the less than significant (with mitigation) project level and cumulative impacts of the *Annexation Sites* to a level of no impact.

Utilities and Service Systems

The proposed *Vineyards project* would result in less than significant impacts with regards to water entitlements, water/wastewater treatment facilities, RWQCB requirements, solid waste disposal, and natural gas and electricity services. The proposed *Annexation Sites* would result in potentially significant impacts with regard to meeting the RWQCB requirements. No significant cumulative impacts were identified for the *Vineyards project* or the *Annexation Sites*.

Alternative 3 would result in similar impacts associated with public utilities and service systems with regard to the *Vineyards project*. The removal of the commercial center, winery, hotel, and congregate care facility from the proposal and the development of a similar number of residential uses at a lower density would result in decreased utility demands. However, the light industrial use would likely offset any decrease in demand. As this alternative would develop a similar number of residential uses, and industrial uses at close to the same acreage as the commercial uses of the *Vineyards project*, demands on wastewater, water, solid waste, electricity/natural gas, and telecommunications utilities would be expected to be approximately the same as with the *Vineyards project* and *Alternative 3* could be expected to result in similar less than significant impacts.

The *Annexation Sites* would be annexed into the City of Brentwood and approved for General Plan amendments. Potential public utilities and service systems impacts would be the same for *Alternative 3* as for the *Vineyards project*. The significant impact pertaining to the *Annexation Sites* ability to meet RWQCB requirements would remain under *Alternative 3*.

Conclusions

Significant Environmental Impacts

Alternative 3 would have similar land use, applicable plans and policies effects as the proposed *Vineyards project* and *Annexation Sites*, but would potentially result in greater General Plan inconsistency impacts than the *Vineyards project*. While the General Plan seeks to create a “diverse self-sufficient community that offers a broad spectrum of job opportunities, housing types, community facilities, and commercial services, *Alternative 3* would develop with none of the commercial center, community facilities or recreation center uses as would the *Vineyards project*. *Alternative 3* would also not provide the range of housing types encouraged by the General Plan.

The design for *Alternative 3* and the *Vineyards projects* would both rely on Fairview Avenue as the primary transportation “spine.” Consequently, the same intersections would operate unacceptably in the vicinity of *Alternative 3* as they would the Near-term *Vineyards project*. Further, *Alternative 3* would contribute more peak hour trips to these intersections than the *Vineyards project*. Moreover, due to the types of uses for *Alternative 3* (primarily residential, with some industrial), the Alternative does allow for “internalization” of trips that would occur with the *Vineyards project*. Consequently, *Alternative 3* would generate a far greater number of daily trips than the *Vineyards project* in the Long-term.

It is possible that *Alternative 3* may result in new significant long-term traffic impacts that would not occur with the *Vineyards project*. This is because *Alternative 3* would increase in trips along Fairview Avenue (for residents commute travel) and provides industrial uses at the northern part of the site that

provide employment to on and offsite workers. As such, *Alternative 3* is anticipated to load more traffic onto the northern end of Fairview Avenue or in the vicinity of the Balfour Road/SR 4 Bypass (Concord Avenue) and Balfour Road/Fairview Avenue intersections. With *Alternative 3*, these intersections could operate at insufficient levels in the long-term. As such, *Alternative 3* could result in additional significant impacts at these two intersections in the long-term that would not result with the *Vineyards project*. *Alternative 3* also could result in higher vehicle-related emissions than the proposed project.

Alternative 3 would potentially result in greater visual impacts than the *Vineyards project* in that it would develop with low density housing with essentially uniform lot sizes. *Alternative 3* would require extensive grading and development on site ridgelines with potentially substantial changes in the site topography. Moreover, the uniformity of the lot sizes and residential uses across the site could result in a potential visual impact. With the 70 acres of light industrial land uses along the SR4 Bypass at Fairview Avenue, this portion of *Alternative 3* would be highly visible from the SR 4 Bypass.

Alternative 3 would result in a greater amount of grading on slopes and ridgelines than the *Vineyards project*, which would have the potential to result in greater geologic and soil instability, landslides, and erosion and would result in substantial changes to the site topography. *Alternative 3* would not reduce the less than significant (with mitigation) impacts of the proposed *Vineyards project* and *Annexation Sites* to a less than significant level, and could potentially result in additional impacts requiring mitigation.

Development under the *Alternative 3* land use plan would result in greater hazards and hazardous materials impacts than with the *Vineyards project* due to the greater potential for damage to existing pipelines.

The industrial use would generate demands on public services beyond those of the proposed project associated with the industrial use and potential for the risk of industrial accidents and the need for additional security. Given the nearly equivalent number of residents that would be generated by *Alternative 3* but additional demands on fire, emergency medical and police services, *Alternative 3* could result in greater significant impacts to these public services than the *Vineyards project*.

As this alternative would develop a similar number of residential uses, and industrial uses at close to the same acreage as the commercial uses of the *Vineyards project*, demands on wastewater, water, solid waste, electricity/natural gas, and telecommunications utilities would be approximately the same as with the *Vineyards project*.

Advantages/Disadvantages

The advantage of *Alternative 3* would be that it would provide somewhat more employment opportunities than the *Vineyards project*, due to the 70 acres of light industrial development provided in the land use plan.

A disadvantage of *Alternative 3* is that it would primarily provide relatively low-density housing and would not provide the multi-family housing or senior apartments of the proposed *Vineyards project*. Moreover, the project objectives seek to provide a range of facilities for senior residents. With

Alternative 3, no facilities would be provided for active adult residents. *Alternative 3* would develop with none of the commercial center, community facilities or recreation center uses as would the Vineyards project. *Alternative 3* would also not provide the range of housing types encouraged by the General Plan. Another disadvantage of *Alternative 3* is that it would not create approximately 90 acres of farmland on the project site.

This *Alternative* does not allow for “internalization” of trips that would occur with the *Vineyards project*. At the *Vineyards project*, a driver could go to multiple destinations (e.g., shopping, cafes, recreation center, amphitheater) on a trip without leaving the project site. This would not occur with *Alternative 3*.

The *Vineyards project* will provide a much needed 4 million gallon water storage tank, even though the project itself only requires 2 million gallons of storage. Under *Alternative 3*, this much needed additional City water storage capacity would not be provided and would be considered a substantial *disadvantage* of this alternative.

Project Objectives/Feasibility of Alternative

Alternative 3 would result in a residential development over most of the Vineyards project site, except for approximately 70 acres of land that would be for light industrial uses. This alternative would not meet a number of project objectives that would be met by the *Vineyards project*. Due to the design of the residential component of *Alternative 3* it would not meet project objectives 5, 7, 10, 12, or 13. Moreover, *Alternative 3* would also not meet some of the community concerns for the protection of ridgelines and other “design” aspects as expressed at public workshops held for the Vineyards at Marsh Creek project.

Alternative 4 – 60% Reduction of Vineyards Developable Property

Description of Alternative

Alternative 4 includes a plan that would develop most of the proposed *Vineyards project* land uses on approximately 40% of the project site (i.e., 60% developable land area reduction) (Exhibit 6-2). As such, this alternative would generate higher density housing than the Vineyards. Only 50 executive lots would be developed on 20 acres.

The active adult uses would become attached units, not individual lots and would be developed at a much higher density. In the Village Center, a much higher number of multi-family units would be developed and the senior apartments would be eliminated. Moreover, 25,000 s.f of commercial would be eliminated in the Village Center along with all of the office, hotel/spa, and congregate care facility. Because of the smaller land area, *Alternative 4* would also eliminate the winery use. The remaining area within the *Vineyards project* site (286 acres) would become open space use (Table 6-1).

The *Alternative 4* development area would be generally bounded by Fairview Avenue on the west. It would exclude many of the development “fingers” along the western Vineyards project to avoid seasonal wetlands, ponds, and some of the California Tiger salamander sites. Similarly, the developable area would not extend as far to the east as the *Vineyards project* to avoid additional biological species and habitats known to exist in these areas. As seen in Exhibit 6-2, *Alternative 4*

development boundaries would avoid a number of wildlife species listed by state and federal agencies for protection, and sensitive community habitats. Fairview Avenue would be maintained in the same location as the proposed *Vineyards project*.

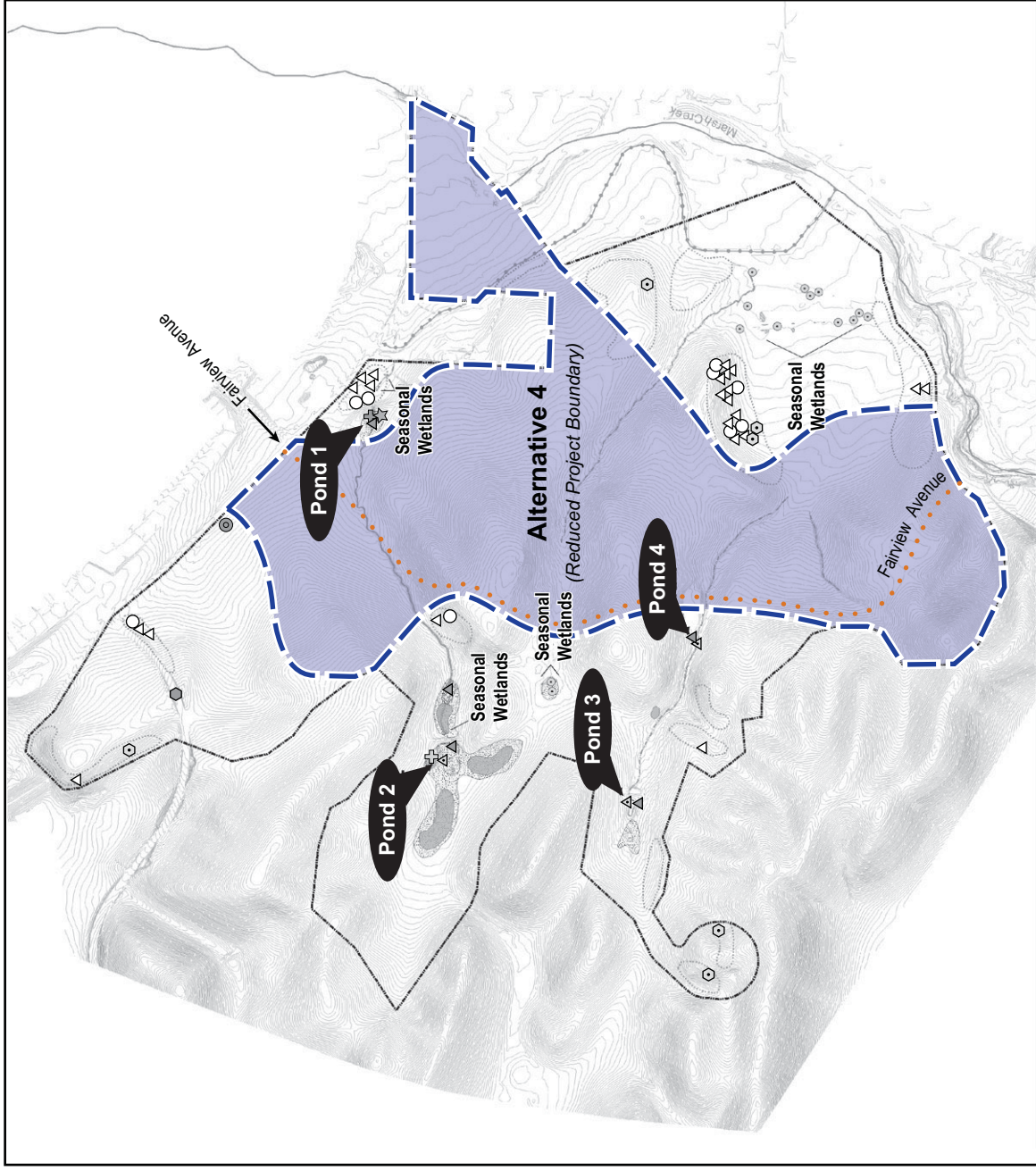
TABLE 6-1 GENERAL PLAN LAND USE DESIGNATIONS FOR ALTERNATIVE 4		
Proposed General Plan Land Use Map Designation	Upper Number of Housing Units or Commercial Square Footage Proposed	Approximate Acreage
Residential Low Density (1.1-5.0 du/ac, midrange 3.0 du/ac)	50 Executive Lots	20 acres
Residential Medium Density (5.0 –10.0 du/ac, midrange 7.5 du/ac) (includes shared open space acreage)	1,100 Active Adult units	150 acres
“Village Center” Mixed Use Business Park (includes public park)	300 Multifamily units 50,000 SF Commercial/Retail/ Civic	25 acres
Open Space	N/A	286 acres
Total:		481 acres
Source: RBF Consulting, 2003.		

Annexation Sites: The *Annexation Sites* would not, under *Alternative 4*, undergo a General Plan amendment and annexation as with the proposed project. The college site would remain within Contra Costa County, and the City of Brentwood Sphere of Influence, but would not be annexed into the City of Brentwood. However the Contra Costa Community College District (CCCCD) could still develop the college on the same site and remain within the unincorporated area of Contra Costa County as the CCCC is under State jurisdiction and is not required to abide by local city and county General Plan and zoning requirements. Similarly, the John Marsh Home would not be annexed into the City of Brentwood. Annexation or not, the John Marsh Home is currently considered part of the State Parks system. Under *Alternative 4*, City park fees would not be applied to the restoration of the John Marsh Home.

Environmental Analysis

Land Use, Applicable Plans, and Policies

The *Vineyards project* would result in less than significant impacts with regard to land use, applicable plans, and policies. Potential future development on the *Annexation Sites* would also result in less than significant impacts with regard to land use, applicable plans, and policies.



Legend

- Project Boundary
- Ground Squirrel Burrow Concentrations
- California Tiger Salamander (CSC, FPT)**
 - CTS Adult (Sycamore Winter 2003)
 - CTS Larva (Sycamore Spring 2003)
 - CTS Adult (CNDDDB Fall 2002)
 - CTS Larva (LSA 1993)
- Special-Status Invertebrates**
 - Vernal Pool Fairy Shrimp (FT)
- Burrowing Owl (CSC)**
 - Burrowing Owl Sighting
 - Secondary Burrowing Owl Sign
- Special-Status Plants**
 - Stinkbells (*Fritillaria agrestis*) (CNPS 4)
 - Hogwallow Starfish (*Hesperex caulescens*) (CNPS 4)
 - Crownscale (*Atriplex cosonata*) (CNPS 4)
 - San Joaquin Spearscale (*Atriplex joaquiniana*) (CNPS 1B)
 - (Sycamore Spring 2003)
 - (LSA 1993)
- Wetlands, Aquatic Habitat, & Alkaline Soils**
 - Marsh Creek (USACE & State Jurisdictional)
 - Intermittent Drainages (Waters of the State)
 - Manmade Canals (Potential CDFG Jurisdiction)
 - Seasonal Wetlands (Waters of the State)
 - Ponds (Waters of the State)
 - Former Stock Pond
 - Alkali meadows, grassland, or scalds
- Sensitivity Codes**
 - FT Listed as Threatened by the Federal Government
 - FPT Proposed as Threatened by the Federal Government
 - ST Listed as Threatened by the State of California
 - CSC California Species of Special Concern
 - CNPS 4 Plants of Limited Distribution
 - CNPS 1B Eligible for State listing

Source: Sycamore Associates (2003)



THE VINEYARDS AT MARSH CREEK AND ANNEXATION SITES EIR

Alternative 4 - 60% Reduction of Vineyards Project

Alternative 4 would result in similar impacts with regard to the *Annexation Sites*. The John Marsh Home would remain in the State Parks system. As no development is proposed, or being considered on the John Marsh Home sites with the proposed project, *Alternative 4* would result in essentially the same effect. With *Alternative 4*, the community college could still potentially be developed as well, albeit under County jurisdiction and in accordance with County regulations. This alternative would result in essentially the same effects as the proposed project on the *Annexation Sites*.

With *Alternative 4*, most of the development proposed with the *Vineyards project* would be developed on a 60% smaller site. Potential General Plan inconsistencies could occur with *Alternative 4* arising from the high-density land uses and its consistency with adjacent neighborhoods. Like the proposed project, *Alternative 4* would result in less than significant impacts with the potential to result in significant General Plan and/or land use consistency impacts arising from high-density residential land uses and the commercial center.

Agricultural Resources

The proposed *Vineyards project* would result in a less than significant impact on agricultural resources. The *Vineyards project* could result in the conversion of a small amount (fewer than 10 acres) of prime farmland and/or farmland of statewide significance to non-agricultural uses. However, the *Vineyards project* would also create on the project site 90 new acres of farmland, which would be used for a winery, vineyards and olive groves. The *Annexation Sites* are not located on prime farmland, farmland of statewide significance, or unique farmland; as a result, the potential future development of the *Annexation Sites* would not result in a significant impact to agricultural resources.

With *Alternative 4*, only 40% of the *Vineyards project* site would be developed. The reduction of the developed area could reduce the already small amount of farmland that could be converted by the *Vineyards project*, but it would also eliminate the winery and reduce the amount of farmland (approximately 90 acres) that the *Vineyards project* would create.

Population and Housing

The *Vineyards project* would result in less than significant impacts with regard to population growth and displacement of housing and/or people. Potential future development on the *Annexation Sites* would also result in less than significant impacts with regard to population growth and displacement of housing and/or people.

Alternative 4 would generate the same population as the *Vineyards project* (i.e., approximately 3,375 people). However, this population would be housed in development that would be at a higher density than with the *Vineyards*. As with the *Vineyards project*, *Alternative 4* would result in growth in accordance with Brentwood General Plan and ABAG growth projections and, therefore, result in less than significant impacts.

Annexation of the *Annexation Sites* to the City of Brentwood and approval of General Plan amendments would not result in new on-site residences and, therefore, no additional permanent population.

Alternative 4 would result in similar less than significant impacts as the proposed *Vineyards project* and *Annexation Sites*.

Transportation / Circulation

The *Vineyards project* would result in near-term significant impacts to the following intersections: Balfour Road/SR4 Bypass (Concord Avenue); Balfour Road/Fairview Avenue; Marsh Creek Road/Walnut Boulevard; and Walnut Boulevard/Concord Avenue. No significant long-term impacts were identified with either the *Vineyards project* or the *Annexation Sites*. Mitigation measures have been identified to reduce impacts to the aforementioned intersections to less than significant levels.

As with the Near-Term Without *Vineyards project*, *Alternative 3* intersections would operate at the same unacceptable levels at the same locations until Segment 3 of the SR4 Bypass was built because these intersection “failures” occur before any project traffic is added to the roadway network.

Alternative 4 would result in similar Near-term and Long-Term transportation / circulation impacts as the *Vineyards project* because the same level of development would result.

Air Quality

The construction of the *Vineyards project* would result in significant short-term air quality impacts, operational air quality impacts, and cumulative air quality impacts. Operational and cumulative air quality impacts would remain significant and unavoidable. Mitigation measures have been identified to reduce short-term air quality impacts to a less than significant level.

Potential future development of the *Annexation Sites* would result in potentially significant short-term air quality impacts, operational air quality impacts, and cumulative air quality impacts. Operational and cumulative air quality impacts would remain significant and unavoidable. Mitigation measures have been identified to reduce short-term air quality impacts to a less than significant level.

Alternative 4 would result in a smaller area of grading and would, therefore, have a smaller potential for the generation of short-term construction related impacts. However, the grading required and operation of construction equipment for development of the *Alternative 4* project would still result in a significant impact and would require similar mitigation as the proposed *Vineyards project* to reduce the impact to a less than significant level.

Alternative 4 would generate roughly the same population as the proposed *Vineyards project* and, therefore, would result in similar significant and unavoidable operational and cumulative impacts.

With *Alternative 4*, the *Annexation Sites* would be the same as the proposed project as the potential community college could still be developed by the CCCCD and, therefore, would result in similar impacts and require similar mitigation.

Noise

The *Vineyards project* would result in significant short-term construction noise impacts and external noise impacts on the *Vineyards project*. The *Annexation Sites* would also result in short-term construction noise impacts. Mitigation measures have been identified to reduce the short-term

construction noise impacts of the *Vineyards project* and *Annexation Sites* and external noise impacts of the *Vineyards project* to a less than significant level.

Similar impacts would result with *Alternative 4* as with the proposed *Vineyards project*. A similar intensity of construction would occur, albeit on a 60% smaller site. The generation of construction noise would be similar however regardless of the alternatives effect of limiting construction in a smaller area. The site where construction would be limited would also still be susceptible to external noise influences generated by the adjacent PQ&E plant and, therefore, would have similar effects as the proposed *Vineyards project*.

With *Alternative 4*, the effects of the *Annexation Sites* would be the same as the proposed project as the potential community college could still be developed by the CCCCD and, therefore, would result in similar impacts and require similar mitigation.

Similar mitigation measures would be required under *Alternative 4* for the *Vineyards project* and the *Annexation Sites*. *Alternative 4* would not reduce the less than significant (with mitigation) impacts of the proposed project to a level of no impact.

Aesthetics / Visual Resources

Construction of the *Vineyards project* would result in visual changes on the site from undeveloped open space to an urbanized development. The proposed *Vineyards project* would result in a significant impact with regard to the degradation of visual character. The *Vineyards project* would also result in the introduction of light and glare to the site. Mitigation measures have been identified that reduce light and glare and visual character impacts to a less than significant level.

The potential future development on the *Annexation Sites* would potentially result in similar significant visual character and light and glare on the community college site. Mitigation measures have been identified to reduce the impacts to a less than significant level.

Alternative 4 would have the same visual effects with regard to the *Annexation Sites*. The John Marsh Home would stay in its current state and would remain under jurisdiction of the State Parks. As no development is proposed or currently being considered on this site, no change would occur with the selection of *Alternative 4*. The Community College site would still be able to be developed with a college on the same site as that contemplated in the *Annexation Sites*.

With *Alternative 4* similar visual character and light and glare impacts would occur as with the *Vineyards project*, albeit it at a reduced scale corresponding to the 60% reduction in project area. This alternative would generate higher density housing than the Vineyards. Only 50 executive lots would be developed on 20 acres. The active adult uses would become attached units, not individual lots and would be developed at a much higher density. In the Village Center, a much higher number of multi-family units would be developed and the senior apartments would be eliminated. Moreover, 25,000 s.f of commercial would be eliminated in the Village Center along with the office, hotel, and congregate care uses.

This alternative would maintain approximately 286-acres of the site in an open space state. The need to develop at a higher density on the remainder of the site would necessitate development on the sites

ridgelines due to the need to maximize development on a 60% smaller project site. Development on the sites ridgelines would require extensive grading and would potentially result in a substantial change in the site topography in a manner that could result in a significant visual impact. Moreover, development on the site ridgelines could result in a visual obstruction of the foothills and the Diablo Range located beyond the project boundaries.

Alternative 4 would result in a change in the visual character of the site and result in the introduction of new light and glare sources to the *Vineyards project* site and the *Annexation Sites*. *Alternative 4* would not avoid or reduce the less than significant (with mitigation) visual character and light and glare impacts of the proposed project to a level of no impact and similar mitigation measures would be required.

Biological Resources

The proposed *Vineyards project* and *Annexation Sites* would result in significant impacts to the following biological resources:

- ❖ Vernal pool brachiopods, curved-foot hygrotus diving beetle and molestan blister beetle;
- ❖ Special-status plants (e.g., stinkbells, hogwallow starfish, spearscale and big tarplant);
- ❖ California tiger salamander;
- ❖ California red-legged frog;
- ❖ Western pond turtle;
- ❖ Nesting raptors;
- ❖ Burrowing owls;
- ❖ Swainson's hawk;
- ❖ Nesting special-status passerines;
- ❖ Special-status bat species;
- ❖ San Joaquin kit fox.

In addition, the *Vineyards project* would result in significant impacts due to the loss of alkali meadow, temporary aquatic habitat impacts, tree removal, and loss of seasonal wetlands. Mitigation measures have been identified to reduce the significant biological resource impacts of the proposed *Vineyards project* and the *Annexation Sites* to a less than significant level.

Alternative 4 would result in a development footprint that excludes many of the development "fingers" along the western *Vineyards project* to avoid seasonal wetlands, ponds, and some of the California Tiger salamander sites. Similarly, the developable area would not extend as far to the east as the *Vineyards project* to avoid additional biological species and habitats known to exist in these areas. As seen in Exhibit 6-2, *Alternative 4* development boundaries would avoid a number of the wildlife species listed by state and federal agencies for protection, and sensitive community habitats that would be impacted by the proposed *Vineyards project*.

Alternative 4 would avoid the less than significant (with mitigation) impacts to special status plant and animal species, sensitive habitats, and from tree removal in that the *Alternative 4* project boundaries would largely avoid the sensitive biological resources and habitats of the *Vineyards project*.

The potentially significant biological resource impacts on the *Annexation Sites* would remain with the *Alternative 4* project in that the community college could still potentially be developed regardless of whether or not it is annexed into the City of Brentwood. The CCCCDC is a State entity and is not required to abide by the local city and county General Plan and zoning regulations. The site could still potentially be developed and, therefore, impacts on the *Annexation Sites* to biological resources would remain and similar mitigation measures would be required.

Geology, Soils, Seismicity and Mineral Resources

The proposed *Vineyards project* would have significant impacts with regards to the potential to expose people and structures to geologic hazards, such as strong ground shaking during an earthquake and expansive soils. Also, development of the *Vineyards project* would result in potential development on a mineral resource of regional importance, Domengine Sandstone, resulting in a significant project impact and potentially significant cumulative impact. Mitigation measures have been identified to reduce the significant geologic, soils, seismicity, and mineral resource impacts of the proposed *Vineyards project* to a less than significant level.

The potential future development on the *Annexation Sites* would result in potentially significant impacts with regards to the potential to expose people and structures to geologic hazards, such as fault rupture, ground failure, strong ground shaking during an earthquake, expansive soils, and fault rupture. Mitigation measures have been identified to reduce these impacts to a less than significant level.

Alternative 4 would result in essentially the same impacts with regard to the *Annexation Sites*, assuming future development of the community college were to occur. Similar mitigation measures would likely be required.

Alternative 4 would result in slightly decreased impacts compared to the *Vineyards project*. The area of development would be reduced by 60% and would have a corresponding decrease in its potential to result in exposure of people and structures to geologic hazards, such as strong ground shaking during an earthquake and expansive soils. However, a similar level of development would occur as with the *Vineyards project* over a smaller area and would therefore have the same level of risk posed to people and structures related to the aforementioned geologic and seismic hazards. *Alternative 4* would result in less potential disturbance to Domengine Sandstone, but would not completely avoid it.

Similar mitigation measures would be required for strong ground shaking, expansive soils, and mineral resource related impacts and *Alternative 4* would not avoid or reduce the less than significant impacts (with mitigation) of the *Vineyards project* to a less than significant level.

Hydrology, Drainage, and Water Quality

The proposed *Vineyards project* would result in a potentially significant cumulative impact due to substantial changes in drainages patterns that could, in combination with past, present, and future

project, result in increased risks of flooding, sedimentation, and/or erosion. Mitigation measures have been recommended to reduce this cumulative impact to a less than significant level.

The potential future development of the *Annexation Sites*, specifically potential development of the community college, would have the potential to result in significant impacts from the changes in drainage patterns and development within a 100-year flood hazard area and dam failure inundation area. Potentially significant cumulative impact due to substantial changes in drainages patterns that could, in combination with past, present, and future project, result in increased risks of flooding, sedimentation, and/or erosion could also potentially occur as a result of development of the *Annexation Sites*.

With *Alternative 4*, essentially the same land uses would be developed on a 60% smaller site. While the extent of grading and topographical changes with the potential to alter drainage patterns of the site would be correspondingly reduced, development on the site would be concentrated at a greater intensity within an area of the site. The decreased area available for development of essentially the same land uses as the *Vineyards project* would limit the project's ability to incorporate features that help control runoff and protect water quality. For example, in order to develop the land uses proposed under *Alternative 4*, impervious surfaces would need to be concentrated in the area proposed for development. In order to achieve the development potential sought, areas such as median strips, lawns, open space, and parks, which serve to control runoff and allow settling of sediment, would not be able to be developed to the same degree as is proposed under the proposed *Vineyards project*. Like the *Vineyards project*, detention basins and water quality basins would need to be constructed to ensure that development does not result in increased runoff flows and volumes with the potential to overtax downstream drainage facilities or result in water quality impacts. If these measures were not included in the proposed *Alternative 4* project, mitigation measures would be required to ensure that no flooding, erosion, or water quality impacts resulted. Assuming that the project would include, or mitigation measures would require, the development of drainage and water quality facilities to sufficiently control and treat stormwater runoff, *Alternative 4* would result in similar impacts as the proposed project.

Potential future development of the *Annexation Sites* would still be possible under *Alternative 4*. While the sites would not be annexed into the City of Brentwood and receive General Plan Amendments, the CCCCD could still develop a community college. The CCCCD is under State jurisdiction and, therefore, is not required to abide by the General Plan and zoning requirements of Contra Costa County. Assuming the CCCCD would still have the desire to develop a community college on the 60-acre site under *Alternative 4*, similar impacts would result as with the proposed project.

Alternative 4 would not avoid or reduce the less than significant (with mitigation) project and cumulative impacts of the proposed project to a level of no impact.

Hazards and Hazardous Materials

The *Vineyards project* would result in significant impacts due to potential to result in an accident causing release of hazardous materials and development on a known hazardous materials site. Mitigation measures have been identified to reduce significant impacts to a less than significant level. Potential future development on the *Annexation Sites* would not result in any project level significant

impacts. Potential cumulative impacts could result from the *Vineyards project* and on the *Annexation Sites* due to the potential to cause, in combination with past, present, and future projects, impacts to public health and safety resulting from the use, handling, and transport of hazardous materials.

Under *Alternative 4*, the Vineyards development area would be reduced by 60%. The developable areas under *Alternative 4* would be more focused in the “heart” of the Vineyards development area. Since this Alternative would result in a project footprint dictated by the location of biological resources and the need to avoid them, it would necessitate greater development in the areas of the *Vineyards project* site that are underlain with underground pipelines. The potential for significant impacts related to disturbance of these pipelines would result and mitigation measures would be required to reduce impacts to a less than significant level. Cumulative impacts associated with the transport, use, and handling of hazardous materials would remain similar to the *Vineyards project* and require mitigation to be reduced to a less than significant level.

Under *Alternative 4*, the *Annexation Sites* would not be annexed into the City and would receive General Plan amendments. However, development of a community college would still be possible as the CCCCDC is under State jurisdiction and is not required to abide by the General Plan and zoning requirements of Contra Costa County. Assuming the CCCCDC would still have the desire to develop a community college under *Alternative 4*, similar significant cumulative impacts would result, in combination with past, present, and future project, associated with the use, transport, and handling of hazardous materials.

Alternative 4 would not avoid or reduce the less than significant (with mitigation) project level and cumulative impacts of the proposed *Vineyards project* and *Annexation Sites* to a level of no impact.

Cultural and Historic Resources

The proposed *Vineyards project* would result in significant impacts through substantial adverse changes in the significance of Archaeological site CA-CCO-548, Historic Resource CCO-675H, and Historic Resource CCO-667H. Potentially significant impacts also would result from the *Vineyards project* potential to disturb previously undiscovered or unknown resources. Mitigation measures have been identified to reduce the significant cultural and historic impacts of the *Vineyards project* to a less than significant level.

The *Annexation Sites* would have the potential to result in potentially significant impacts pertaining to substantial adverse changes in the significance of archaeological resources, destruction of unique paleontological resources or sites, and disturbance to human remains. Mitigation measures have been identified to reduce the potentially significant impacts of the *Annexation Sites* to a less than significant level. The *Annexation Sites* would also have the potential to result in a beneficial due to the enabling of improvements to the John Marsh Home. However, without the provision of City services and park fees, improvements to the John Marsh Home could be delayed and may be less likely to occur.

With *Alternative 4* similar potentially significant impacts would occur with the *Vineyards project* and the *Annexation Sites* as a similar extent of grading would be conducted within the general area where the identified archaeological and historic resources were identified on the *Vineyards project* site and the potential to result in the same level of intensity of disturbance to cultural and historic resources would remain. The community college site could still potentially be developed and, therefore, the

potentially significant impacts of the *Annexation Sites* would also remain. Similar mitigation measures would be required for *Alternative 4* as with the proposed project.

Public Services

The proposed *Vineyards project* would result in less than significant impacts related to changes in governmental facilities to maintain acceptable police, fire, school and park facilities and services. The *Annexation Sites* would result in potentially significant project level and cumulative impacts due to changes in governmental facilities necessary to maintain acceptable fire and emergency medical response facilities. Mitigation measures have been identified to reduce the potentially significant impacts of the *Annexation Sites* to a less than significant level.

Alternative 4 would generate approximately the same population as the proposed *Vineyards project* (i.e., 3,575 residents). Much like the proposed *Vineyards project*, *Alternative 4* would result in less than significant public services impacts.

The less than significant impact (with mitigation) identified on the *Annexation Sites* would be avoided with *Alternative 4* as the sites would not be annexed and, therefore, would not be serviced by Brentwood agencies. However, *Alternative 4* would potentially result in additional significant impacts as emergency response services would need to be provided to the *Annexation Sites* by other entities.

Utilities and Service Systems

The proposed *Vineyards project* would result in less than significant impacts with regards to water entitlements, water/wastewater treatment facilities, RWQCB requirements, solid waste disposal, and natural gas and electricity services. The proposed *Annexation Sites* would result in potentially significant impacts with regard to meeting the RWQCB requirements. No significant cumulative impacts were identified for the *Vineyards project* or the *Annexation Sites*.

With *Alternative 4* only 50 executive lots would be developed on 20 acres. The active adult uses would become attached units, not individual lots and would be developed at a much higher density. In the Village Center, a much higher number of multi-family units would be developed and the senior apartments would be eliminated. Moreover, 25,000 s.f of commercial would be eliminated in the Village Center along with the office, hotel, and congregate care facilities. *Alternative 4* would, similar to the *Vineyards project*, result in less than significant impacts associated with public utilities and service systems with regard to the *Vineyards project* site.

With *Alternative 4*, the *Annexation Sites* would be not annexed into the City, therefore City utilities would not be extended to serve the site and no new demand would result on City utilities. The community college could still be developed on the site within the unincorporated area of Contra Costa County by the CCCCD, who operate under State jurisdiction and are not required to abide by General Plan and zoning regulations of Contra Costa County. On-site utilities would have to be developed. Considering that development would still be possible on the *Annexation Sites* under *Alternative 4* without the benefit of use of municipal utilities, potentially greater impacts could arise such as excessive groundwater pumping and water quality impairments (sewage treatment and disposal).

Alternative 4 would not avoid or reduce the less than significant impact (with mitigation) pertaining to the *Annexation Sites* ability to meet RWQCB requirements to a level of no impact.

Conclusions

Significant Environmental Impacts

With the *Alternative 4*, most of the development proposed with the *Vineyards project* would be development on a 60% smaller site. *Alternative 4* would result in similar impacts, however. Potential General Plan inconsistencies could occur with *Alternative 4* arising from the high-density land uses and its consistency with adjacent neighborhoods.

Alternative 4 would develop on 60% less land area as the *Vineyards project*. The need to develop at a higher density would necessitate development on the site's ridgelines due to the need to maximize the development on a smaller site. In order to achieve the development potential proposed in *Alternative 4*, site development would need to occur at a high density and maximize use of land within the smaller project area. This would likely result in the need to develop on the hillsides and ridgelines within the project boundaries. Development on ridgelines would require extensive grading and would potentially result in a substantial change in the site topography in a manner that could result in a significant visual impact. Moreover, development on the site ridgelines and at a higher development density could result in a visual obstruction of the foothills and the Diablo Range located beyond the project boundaries.

Alternative 4 would result in slightly decreased impacts compared to the *Vineyards project* because the project would be developed on 60% less land. However, a similar level of development would occur as with the *Vineyards project* and would therefore have the same level of risk posed to people and structures related to the aforementioned seismic hazards. *Alternative 4* would result in less potential disturbance to Domingine Sandstone, but would not completely avoid it.

Advantages/Disadvantages

A *significant advantage* of *Alternative 4* is that the development area would be limited (60% less land) and would, therefore, be situated out of some of the sites of known sensitive and special-status species and sensitive community habitats. As such, the loss of the sensitive species and habitats described previously resulting with the *Vineyards project* would largely be avoided. Another advantage of *Alternative 4* is that it would result in an additional 286 acres of open space land.

A *substantial disadvantage* of *Alternative 4* is that only 50 executive lots would be developed on 20 acres. The active adult uses would become attached units, not individual lots and would be developed at a much higher density. In the Village Center, a much higher number of multi-family units would be developed and the senior apartments would be eliminated. Moreover, 25,000 s.f of commercial would be eliminated in the Village Center along with the office, hotel, and congregate care facilities. These facilities would provide jobs to the local community and would provide care facilities for senior citizens. Because of the smaller land area, *Alternative 4* would also eliminate the winery and amphitheater use. This is a substantial disadvantage as the winery and amphitheater are viewed as important regional benefits.

As with the *Vineyards project*, *Alternative 4* would result in population growth in accordance with Brentwood General Plan and ABAG growth projections. However, *Alternative 4* would substantially reduce employment opportunities at the site due to the loss of 25,000 s.f. of commercial/retail/civic uses, 30,000 s.f. of office, the hotel and the winery. Therefore, *Alternative 4* would decrease the ability of the project to improve the jobs/housing balance in the City of Brentwood.

Alternative 4 would generate the same population as the *Vineyards project* (i.e., approximately 3,375 people). However, this population would be housed in development that would be at a higher density than with the *Vineyards project*, which would not retain the rural character of the site. The character of the housing would be very different than with the *Vineyards project* in that no congregate care facilities or individual active adult lots would be developed. As with the *Vineyards project*, *Alternative 4* would result in growth in accordance with Brentwood General Plan and ABAG growth projections and, therefore, result in less than significant impacts.

The *Vineyards project* will provide a much needed 4 million gallon water storage tank, even though the project itself only requires 2 million gallons of storage. Under *Alternative 4*, this much needed additional City water storage capacity would not be provided and would be considered a substantial *disadvantage* of this alternative.

A *disadvantage* of *Alternative 4* is that the community college and John Marsh Home sites would not be annexed into the City. As a result, these potential uses would not be served by the City of Brentwood. Moreover, the potential for the City of Brentwood to contribute park fees to the restoration of the John Marsh Home would not occur with this alternative, as the historic park site would not be annexed into the City.

Project Objectives/Feasibility of Alternative

With *Alternative 4*, only 50 executive lots would be developed on 20 acres. The active adult uses would become attached units, not individual lots and would be developed at a much higher density. In the Village Center, a much higher number of multi-family units would be developed and the senior apartments would be eliminated. Moreover, 25,000 s.f. of commercial would be eliminated in the Village Center along with the office, hotel, and congregate care facilities. Because of the smaller land area, *Alternative 4* would also eliminate the winery and amphitheater uses.

Alternative 4 would not meet project objective 7. While the alternative would provide an integrated and cohesive residential development, it would not be at the scale and quality similar to recent Brentwood residential developments in the project area. Similarly, this alternative would not meet project objective 10. *Alternative 4* would not entirely meet objective 8 because it would not allow for full development of the 481 acres of land made available for urban development. *Alternative 4* would be unable to meet project objective 12 because it would have insufficient land area to develop the winery and amphitheater, or the hotel. The congregate care facilities of project objective 13 would not be met due to insufficient land area. In addition, it is not certain that there would be sufficient market demand or interest for the number of attached active adult units included in *Alternative 4*. Accordingly, it is possible that these units would not be provided, in which case the alternative would not provide needed housing to the same degree as the proposed project and it is unlikely there would be sufficient funds for the necessary infrastructure improvements of the project as a whole.

Alternative 5 – 80% Reduction of Near-Term Vineyards Project:**Description of Alternative**

Vineyards Project: *Alternative 5* would involve development of a *smaller Near-Term Vineyards project*. In this alternative, the Near-Term scenario would include development of 375 Active Adult units. No other development would occur in the Near-Term.

The Long-Term (Year 2025) *Alternative 5* project would ultimately be the same as the proposed Long-Term *Vineyards project*. Therefore, *Alternative 5* would involve the development of the following land uses after approximately Year 2007:

- | | |
|---|---|
| ❖ 725 Active Adult Units | ❖ 50,000 Square Feet Institutional (Nursing Home) |
| ❖ 150 Market Rate Single-Family Homes | ❖ 150 Assisted Living Units |
| ❖ 200 Market Rate Multi-Family Homes | ❖ 30,000 Square Feet Office |
| ❖ 150 Senior Rental Housing (Active Adult living) | ❖ 75,000 Square Feet Retail |
| ❖ Winery | ❖ Hotel |

Annexation Sites: The *Annexation Sites* would, as with the proposed project, be annexed into the City of Brentwood. The General Plan land use of the community college would be amended from Business Park to Schools – Community College, as with the proposed project. The John Marsh Home General Plan designations would be amended from Business Park to Parks, similar to the proposed project.

Environmental Analysis**Land Use, Applicable Plans, and Policies**

The *Vineyards project* would result in less than significant impacts with regard to land use, applicable plans, and policies. Potential future development on the *Annexation Sites* would also result in less than significant impacts with regard to land use, applicable plans, and policies.

Alternative 5 would also result in similar less than significant impacts as the *Vineyards project* and the *Annexation Sites*. It would result in essentially the same development, just with less of the development occurring in the near term.

With regard to land use, applicable plans, and policies, there would be no difference between *Alternative 5* and the proposed *Vineyards project* or *Annexation Sites*.

Agricultural Resources

The proposed *Vineyards project* would result in a less than significant impact on agricultural resources. The *Vineyards project* could result in the conversion of a small amount (fewer than 10 acres) of prime farmland and/or farmland of statewide significance to non-agricultural uses. However,

the Vineyards project would also create on the project site 90 new acres of farmland, which would be used for a winery, vineyards and olive groves. The Annexation Sites are not located on prime farmland, farmland of statewide significance, or unique farmland; as a result, the potential future development of the Annexation Sites would not result in a significant impact to agricultural resources.

Alternative 5 proposes the same kinds of development and would result in the same types of impacts as the proposed Vineyards project and Annexation Sites.

Population and Housing

The *Vineyards project* would result in less than significant impacts with regard to population growth and displacement of housing and/or people. Potential future development on the *Annexation Sites* would also result in less than significant impacts with regard to population growth and displacement of housing and/or people.

Alternative 5 would ultimately develop with the same land uses and in the same locations as the proposed Vineyards Long-Term (2025) project. However, a substantially reduced level of development (i.e., 80%) would occur in the Near-Term. Ultimately, *Alternative 5* would result in the same population and housing effects as with the proposed *Vineyards project* and *Annexation Sites*.

Transportation / Circulation

The *Vineyards project* would result in near-term significant impacts to the following intersections: Balfour Road/SR4 Bypass (Concord Avenue); Balfour Road/Fairview Avenue; Marsh Creek Road/Walnut Boulevard; and Walnut Boulevard/Concord Avenue. No significant long-term impacts were identified with either the *Vineyards project* or the *Annexation Sites*. Mitigation measures have been identified to reduce impacts to the aforementioned intersections to less than significant levels.

As with the Near-Term Without *Vineyards project*, *Alternative 5* intersections would operate at the same unacceptable levels at the same locations until Segment 3 of the SR4 Bypass was built because these intersection “failures” occur before any project traffic is added to the roadway network.

By reducing the Near-Term *Vineyards project* by 80%, *Alternative 5* would add minimal trips to the Balfour Road/SR4 Bypass (Concord Avenue) during the PM peak hour, Balfour Road/Fairview Avenue during the PM Peak Hour and Marsh Creek Road/Walnut Boulevard in the AM and PM peak hours. In fact, the *Alternative 5* addition of trips to these intersections would change the V/C ratio by 0 to 0.01, which is considered “acceptable” by City of Brentwood and CCTA standards. Consequently, *Alternative 5* would result in less than significant impacts at these intersections.

Moreover, *Alternative 5* would avoid significant impacts at the Balfour Road/SR 4 Bypass (Concord Avenue) during the AM peak hour and the Balfour Road/Fairview Avenue during the AM Peak Hour, which would otherwise result with the Near-term *Vineyards project*.

Alternative 5 Long-Term impacts would be the same as the Long-Term (2025) *Vineyards project* and *Annexation Sites*.

Air Quality

The construction of the *Vineyards project* would result in significant short-term air quality impacts, operational air quality impacts, and cumulative air quality impacts. Operational and cumulative air quality impacts would remain significant and unavoidable. Mitigation measures have been identified to reduce short-term air quality impacts to a less than significant level.

Potential future development of the *Annexation Sites* would result in potentially significant short-term air quality impacts, operational air quality impacts, and cumulative air quality impacts. Operational and cumulative air quality impacts would remain significant and unavoidable. Mitigation measures have been identified to reduce short-term air quality impacts to a less than significant level.

With *Alternative 5*, the same level of development would occur and the same population would be generated and, therefore, similar long-term operational and cumulative impacts would occur and a significant and unavoidable impact would remain.

Noise

The *Vineyards project* would result in significant short-term construction noise impacts and external noise impacts on the *Vineyards project*. The *Annexation Sites* would also result in short-term construction noise impacts. Mitigation measures have been identified to reduce the short-term construction noise impacts of the *Vineyards project* and *Annexation Sites* and external noise impacts of the *Vineyards project* to a less than significant level.

With *Alternative 5* essentially the same development would occur with the potential to result in similar effects as the proposed *Vineyards project* and *Annexation Sites* and would require similar mitigation measures. *Alternative 5* would not reduce the less than significant (with mitigation) impacts of the proposed project to a level of no impact.

Aesthetics / Visual Resources

Construction of the *Vineyards project* would result in visual changes on the site from undeveloped open space to an urbanized development. The proposed *Vineyards project* would result in a significant impact with regard to the degradation of visual character. The *Vineyards project* would also result in the introduction of light and glare to the site. Mitigation measures have been identified that reduce light and glare and visual character impacts to a less than significant level.

The potential future development on the *Annexation Sites* would potentially result in similar significant visual character and light and glare on the community college site. Mitigation measures have been identified to reduce the impacts to a less than significant level.

As the *Annexation Sites* would still be annexed and receive a GPA with *Alternative 5*, no change would occur through selection of this alternative. *Alternative 5* would also result in similar impacts as the proposed *Vineyards project*. As essentially all of the same uses would be developed, the change in visual character and introduction of new light and glare sources would essentially be the same. In the near term 80% fewer uses would be developed, but at buildout the visual change would be the same as with the *Vineyards project*.

Biological Resources

The proposed *Vineyards project* and *Annexation Sites* would result in significant impacts to the following biological resources:

- ❖ Vernal pool brachiopods, curved-foot hygrotus diving beetle and molestan blister beetle;
- ❖ Special-status plants (e.g., stinkbells, hogwallow starfish, spearscale and big tarplant);
- ❖ California tiger salamander;
- ❖ California red-legged frog;
- ❖ Western pond turtle;
- ❖ Nesting raptors;
- ❖ Burrowing owls;
- ❖ Swainson's hawk;
- ❖ Nesting special-status passerines;
- ❖ Special-status bat species;
- ❖ San Joaquin kit fox.

In addition, the *Vineyards project* would result in significant impacts due to the loss of alkali meadow, temporary aquatic habitat impacts, tree removal, and loss of seasonal wetlands. Mitigation measures have been identified to reduce the significant biological resource impacts of the proposed *Vineyards project* and the *Annexation Sites* to a less than significant level.

With *Alternative 5* impacts to biological resources on the *Vineyards project* site and the *Annexation Sites* would be the same as with the proposed project. The same project would be developed under *Alternative 5*, with the majority occurring in the long-term. The effects on biological resources would be the same and essentially the same development would occur. The less than significant (with mitigation) biological resources impacts of the proposed project would remain with *Alternative 5*.

Geology, Soils, Seismicity and Mineral Resources

The proposed *Vineyards project* would have significant impacts with regards to the potential to expose people and structures to geologic hazards, such as strong ground shaking during an earthquake and expansive soils. Also, development of the *Vineyards project* would result in potential development on a mineral resource of regional importance, Domengine Sandstone, resulting in a significant project impact and potentially significant cumulative impact. Mitigation measures have been identified to reduce the significant geologic, soils, seismicity, and mineral resource impacts of the proposed *Vineyards project* to a less than significant level.

The potential future development on the *Annexation Sites* would result in potentially significant impacts with regards to the potential to expose people and structures to geologic hazards, such as fault rupture, ground failure, strong ground shaking during an earthquake, expansive soils, and fault rupture. Mitigation measures have been identified to reduce these impacts to a less than significant level.

As *Alternative 5* would result in the same development on the *Vineyards project* site and potential for development on the *Annexation Sites*, it would result in essentially the same impacts. *Alternative 5* would not reduce the less than significant impacts (with mitigation) of the proposed project to a level of no impact.

Hydrology, Drainage, and Water Quality

The proposed *Vineyards project* would result in a potentially significant cumulative impact due to substantial changes in drainages patterns that could, in combination with past, present, and future project, result in increased risks of flooding, sedimentation, and/or erosion. Mitigation measures have been recommended to reduce this cumulative impact to a less than significant level.

The potential future development of the *Annexation Sites*, specifically potential development of the community college, would have the potential to result in significant impacts from the changes in drainage patterns and development within a 100-year flood hazard area and dam failure inundation area. Potentially significant cumulative impact due to substantial changes in drainages patterns that could, in combination with past, present, and future project, result in increased risks of flooding, sedimentation, and/or erosion could also potentially occur as a result of development of the *Annexation Sites*.

As *Alternative 5* would result in the same development on the *Vineyards project* site and potential for development on the *Annexation Sites*, it would result in essentially the same impacts. *Alternative 5* would not reduce the less than significant impacts (with mitigation) of the proposed project to a level of no impact.

Hazards and Hazardous Materials

The *Vineyards project* would result in significant impacts due to potential to result in an accident causing release of hazardous materials and development on a known hazardous materials site. Mitigation measures have been identified to reduce significant impacts to a less than significant level. Potential future development on the *Annexation Sites* would not result in any project level significant impacts. Potential cumulative impacts could result from the *Vineyards project* and on the *Annexation Sites* due to the potential to cause, in combination with past, present, and future projects, impacts to public health and safety resulting from the use, handling, and transport of hazardous materials.

Alternative 5 would substantially reduce the *Vineyards project* in the Near-Term. However, ultimately it would be developed similarly to the Long-Term (2025) *Vineyards project*, and on the same land area. Consequently, *Alternative 5* would not reduce or avoid significant impacts regarding the release of hazardous materials through the accidental damage to existing underground pipes on the *Vineyards project* site, nor would it reduce or avoid significant cumulative impacts regarding the use, transport, or handling of hazardous materials on the *Vineyards project* site or *Annexation Sites*. The alternative would also not result in new significant hazards and hazardous materials impacts beyond those identified for the *Vineyards project* and *Annexation Sites*.

Cultural and Historic Resources

The proposed *Vineyards project* would result in significant impacts through substantial adverse changes in the significance of Archaeological site CA-CCO-548, Historic Resource CCO-675H, and Historic Resource CCO-667H. Potentially significant impacts also would result from the *Vineyards project* potential to disturb previously undiscovered or unknown resources. Mitigation measures have been identified to reduce the significant cultural and historic impacts of the *Vineyards project* to a less than significant level.

The *Annexation Sites* would have the potential to result in potentially significant impacts pertaining to substantial adverse changes in the significance of archaeological resources, destruction of unique paleontological resources or sites, and disturbance to human remains. Mitigation measures have been identified to reduce the potentially significant impacts of the *Annexation Sites* to a less than significant level. The *Annexation Sites* would also have the potential to result in a beneficial due to the enabling of improvements to the John Marsh Home and provision of visitor services.

Alternative 5 would result in the same long-term effects as the proposed *Vineyards project* and *Annexation Sites* and, therefore, would have similar impacts and require similar mitigation measures.

Public Services

The proposed *Vineyards project* would result in less than significant impacts related to changes in governmental facilities to maintain acceptable police, fire, school and park facilities and services. The *Annexation Sites* would result in potentially significant project level and cumulative impacts due to changes in governmental facilities necessary to maintain acceptable fire and emergency medical response facilities. Mitigation measures have been identified to reduce the potentially significant impacts of the *Annexation Sites* to a less than significant level.

Alternative 5 would ultimately be developed with the same land uses and in the same locations as the proposed *Vineyards Long-Term (2025) project* and, therefore, would result in similar less than significant public service impacts.

Impacts associated with the potential future development of the *Annexation Sites* on public services would be the same as with the proposed project as there would be no difference between this alternative and the proposed project.

Utilities and Service Systems

The proposed *Vineyards project* would result in less than significant impacts with regards to water entitlements, water/wastewater treatment facilities, RWQCB requirements, solid waste disposal, and natural gas and electricity services. The proposed *Annexation Sites* would result in potentially significant impacts with regard to meeting the RWQCB requirements. No significant cumulative impacts were identified for the *Vineyards project* or the *Annexation Sites*.

Alternative 5 would result in similar impacts associated with public utilities and service systems with regard to the *Vineyards project*, as the project would be developed at the same intensity, but with 80% of it occurring in the long-term. As this alternative would result in a similar amount of development as the *Vineyards project* demands on wastewater, water, solid waste, electricity/natural gas, and

telecommunications utilities would not increase. This alternative would require mitigation measures similar to the proposed project.

Impacts associated with the potential future development of the *Annexation Sites* on public utilities and service systems would be the same as with the proposed project as there would be no difference between this alternative and the proposed project.

Conclusions

Significant Environmental Impacts

By reducing the Near-Term *Vineyards project* by 80%, *Alternative 5* would add minimal trips to the Balfour Road/SR 4 Bypass (Concord Avenue) during the PM peak hour, Balfour Road/Fairview Avenue during the PM Peak Hour and Marsh Creek Road/Walnut Boulevard in the AM and PM peak hours. In fact, the *Alternative 5* trips added to these intersections would change the V/C ratio by 0 to 0.01, which is considered “acceptable” by City of Brentwood and CCTA standards. Consequently, *Alternative 5* would result in less than significant impacts at these intersections.

Moreover, *Alternative 5* would avoid significant impacts at the Balfour Road/SR 4 Bypass (Concord Avenue) during the AM peak hour and the Balfour Road/Fairview Avenue during the AM Peak Hour, which would otherwise result with the Near-term *Vineyards project*. *Alternative 5* Long-Term impacts would be the same as the Long-Term (2025) *Vineyards project* and *Annexation Sites*.

Advantages/Disadvantages

The advantage of this alternative is that it would avoid all transportation/circulation impacts that would otherwise be contributed by the proposed Near-Term *Vineyards project*.

The disadvantage of this alternative is that mitigation would not be required for Near-Term traffic impacts; therefore the applicant would not necessarily be required to contribute to Segment 3 of the State Route 4 Bypass. The applicant also would not be required to pay for individual intersection improvements, which would alleviate existing congestion. These improvements include adding an eastbound right turn lane at Balfour Road/Fairview Avenue, adding exclusive left- and right-turn lanes on all approaches to the Marsh Creek Road/Walnut Boulevard intersection, and adding a traffic signal at Walnut Boulevard/Concord Avenue.

Project Objectives/Feasibility of Alternative

Alternative 5 would eventually develop into the same project as the *Vineyards Long-term project*. Consequently, this alternative, in the Long-term would meet all of the project objectives if it were constructed. However, this alternative is considered infeasible in that the Near-Term *Vineyards project* is necessary to generate revenues for buildout of the remainder of the Long-Term project. The very small (20%) component of the *Vineyards project* would generate insufficient revenues for completion of the types of infrastructure that is necessary to serve the remainder of the Long-Term project. In addition, this alternative would not alleviate regional housing shortages as quickly as the proposed project.

6.2 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that an Environmentally Superior Alternative be identified; that is, an alternative that would result in the fewest or least significant environmental impacts. If the No-Project Alternative is the environmentally superior alternative, CEQA requires that another alternative be chosen as the environmentally superior alternative, which could feasibly attain most of the Project objectives.

Alternative 1, the No-Project, No Development Alternative, would reduce all of the less than significant impacts (with mitigation) and the significant and unavoidable impacts of the proposed project to a level of no impact. Therefore, Alternative 1 would be considered the environmentally superior Alternative. However, an environmentally superior alternative must be chosen among the other alternatives if the No-Project Alternative (State CEQA Guidelines, Section 15126 (e)(2)) is identified as the Environmentally Superior Alternative.

Based on the analysis in this Section, the environmentally superior alternative would be the proposed project. All impacts associated with the proposed project have either been identified as less than significant, or mitigation measures have been included to reduce the level of impact to a less than significant level with the exception of operational regional criteria pollutant emissions impacts, cumulative air quality impacts, and loss of prime farmland, which remain significant and unavoidable. None of the other alternatives would reduce the significant and unavoidable impacts of the proposed project to a less than significant or no impact level.

The proposed project would meet all of the stated project objectives without resulting in any significant impacts other than the significant and unavoidable operational regional criteria pollutant emissions impacts. The other alternatives evaluated would similarly result in significant and unavoidable operational air quality impacts, but would not meet the project objectives identified or would not meet the project objectives with the same level of success as the proposed project.

The City has identified, through its General Plan and SPA J policies, a desire for a mixed-use development on this site and the development near the planned SR4 Bypass interchanges. Also, the City wished to provide a mix of housing types and sizes that would be available to a wide range of income levels and household sizes. Additionally, the development of housing near major transportation corridors (i.e. SR4 Bypass) would help alleviate the regional housing shortage. Furthermore, Contra Costa County's Growth Management Program calls for development within the County's Urban Limit Line. Also, the City would like to have infrastructure facilities available to serve the Annexation Sites to serve future public use of the John Marsh Home site and a community college, should one be developed.

The proposed project seeks to establish a mixed-use development with a cohesive residential neighborhood at a scale and quality consistent with other recent developments in Brentwood. Also, the project seeks to provide the City of Brentwood with regional destination winery, hotel, and conference center with direct access to major regional transportation facilities (i.e. SR4 Bypass). Additionally, the project seeks to provide facilities for senior residents that will meet their needs as they age.

The other alternatives contrast sharply from the proposed project either in scale, densities, mix of land-uses, or development time frames. *Alternative 2* would not provide the range of housing types that the City seeks to offer, including affordable housing, senior apartments, and senior care facilities.

Alternative 2 would also result in a lower density residential development that would provide less housing than the proposed project and not have a substantial contribution to alleviation of regional housing needs. The regional hotel, winery, and conference center destinations would not be developed. Also, *Alternative 2* would not allow for the provision of City services to serve potential future uses on the community college and/or John Marsh Home site.

Alternative 3 would not meet the General Plan and SPA J goals for a mixed-use development and would primarily provide a uniform low-density residential land use. The residential land uses proposed with *Alternative 3* would not provide for the needs of senior citizens and would not provide affordable housing options. Furthermore, the regional destination centers, i.e. hotel, winery, conference center, would not be developed.

Alternative 4 also would not provide the regional destination centers that are among the project objectives and would eliminate a considerable amount of the commercial center proposed by the *Vineyards project*. The congregate care facility and senior apartments would be eliminated, decreasing the projects potential to provide for the needs of senior citizens and resulting in fewer housing types developed. A smaller range of housing types would be developed, and this alternative would not be as successful in alleviating the regional Bay Area housing shortage. Furthermore, the increased density of the alternative would not be at the same scale and would not be visually compatible with surrounding residential developments. Moreover, the annexation of the community college and John Marsh Home site would not occur with *Alternative 4* and would therefore not meet the desire to provide City services to these sites.

Alternative 5 would result in essentially the same development, but with the vast majority (80%) of the project being developed over the long-term (year 2025). As the same development would eventually take place this alternative would meet the project objectives. However, development of 80% of the proposed land uses in the long-term would not be economically feasible as near term development is necessary to generate revenues to fund necessary infrastructure improvements. Therefore, *Alternative 5* would threaten the viability of the project.

For the above reasons, and that the proposed project meets all of the project objectives with minimal environmental impacts, the proposed project has been identified as the Environmentally Superior Alternative.

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8.0 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

State CEQA Guidelines § 15126.2 (c) requires that an EIR present discussion of the significant irreversible environmental changes resulting from the project should it be implemented. These changes include, for example, uses of nonrenewable resources making removal or non-use of these resources unlikely. “Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses.” Irreversible damage that may result from environmental accidents associated with the project is also to be described.

The proposed *Vineyards project* and *Annexation sites* would require the use of construction vehicles and other equipment necessary for site grading and development of the proposed uses. The project would also result in the application of asphalt on the internal roadways and parking lots associated with the commercial center, hotel, and winery to accommodate on-site circulation and parking. This paving of the internal roadways and parking lots would require the use of diesel and other petroleum-based fuels to operate construction vehicles as well as petroleum products that would be incorporated into the asphalt. The application of the asphalt and operation of construction vehicles, and the associated use of petroleum products, would not result in what would be considered a substantial loss of irretrievable resources.

The proposed mixed-use *Vineyards project* would result in the conversion of approximately 481 acres of vacant land to residential uses, neighborhood, commercial, hotel, winery, and assisted care facilities. This change in land use would result in a long-term commitment to urbanization on this site. This is because reversion of the land back to a vacant land use or open space status would be difficult and highly unlikely given the site’s location within the City of Brentwood and along Concord Avenue and the proposed Highway 4 Bypass, making the site more marketable and desirable for development..

The proposed *Annexation sites* would result in the annexation and General Plan Amendments of a total of 47 acres. The annexation and General Plan Amendments requested for these sites would facilitate development of a community college on a 30-acre site and provision of services to the John Marsh Home site (17 acres). The provision of services to the John Marsh Home site would not result in any significant and irreversible impacts. The development of the 30-acre community college site would not result in a substantial loss of open space, nor would it result in a substantial use of petroleum-based products that would result in a considerable loss of irretrievable resources.

The current General Plan designations for the property of SPA J and the corresponding zoning districts would allow for structural development on the property that would similarly result in the loss of vacant land. The loss of 528 acres of what could currently be described as open space as a result of this development would constitute an irreversible environmental change. Development in the SPA’s designated in the General Plan require a Specific Plan or Planned Development Zoning where there are more than one property owners or where there are significant unresolved issues. This process is

intended to facilitate high-quality development, allow for coordination of planning efforts among multiple land owners, allow for infrastructure cost sharing, provide developments which are sensitive to the natural environment, and to provide special amenities such as golf courses, lakes, open space, parks, etc. The long-term commitment to urbanization has largely already been made for this area of Brentwood through the planning of these sites in the General Plan.

Accidental spill of fuels, paints or other construction-related materials may occur on the *Vineyards project* site and *Annexation sites* during construction. However, these types of accidents would be anticipated to be limited because experienced construction workers would be overseeing and working on developing the site. These types of potential spills would not result in irreversible conversion of the property and certainly would not convert more land than necessary for development of the apartment complex and village center itself. No explosives or other hazardous materials would be used on the property.

Both natural gas and petroleum distribution lines are present on the *Vineyards project* site and there exists the potential for these pipelines to be damaged during construction and the potential of release of significant volumes of petroleum and flammable natural gas. Project contractors responsible for construction of future development projects within the project area would be required to use standard construction controls and safety procedures that would avoid and minimize the potential for accidental release of such substances into the environment.

It should be noted that petroleum leaks from the distribution lines have been found to be leaking, impairing water quality in Marsh Creek. Through the development of the proposed project these leaks would be fixed, resulting in the remediation of an existing significant irreversible effect.

The development of the proposed *Vineyards project* and annexation and potential future development of the *Annexation sites* would not result in a substantial loss of irretrievable resources. The sites have been planned for urban development through the Brentwood General Plan. Moreover, the General Plan assumed development in the SPA J area that is now dedicated for state park uses and will not be developed, ultimately increasing the amount of protected open space in the area.

7.0 GROWTH-INDUCEMENT

CEQA requires an EIR to address the “growth-inducing” effects of a proposed project. Section 15126.2 (d) of the State CEQA Guidelines outlines the factors that determine the growth-inducing effects of a project. A project would have growth-inducing effects if it would:

- ❖ Foster economic or population growth, or the construction of additional housing (either directly or indirectly) in the surrounding environment;
- ❖ Remove obstacles to population growth;
- ❖ Tax existing community services or facilities, requiring the construction of new facilities that could cause significant environmental effects; or
- ❖ Encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

7.1 DISCUSSION

Foster Economic Growth

The Vineyards project will generate 610 permanent jobs. Construction jobs will be temporary in nature, associated with clearing and grading of the Vineyards site, and construction of the residential and non-residential uses on the site. The construction jobs are anticipated to be filled by the local population in eastern Contra Costa County who would similarly be expected to spend their earnings in the local area.

The approximately 396 jobs associated with commercial/retail/civic, senior care and other uses in the Village Center would be long-term employment opportunities. These jobs could be filled by local residents as well as others that may take up residence in eastern Contra Costa County. These residents would be expected to support local property taxes, sales taxes and other forms of income to the City of Brentwood and Contra Costa County. The City of Brentwood General Plan policies strive to increase local employment opportunities and, therefore, increased economic growth would be considered a positive influence in the City of Brentwood.

Another “tier” of economic growth could result with the Vineyards project. This “tier” would develop partly in response to the new employment opportunities. New non-residential uses and new employees would increase the demands for local restaurants/cafes, medical facilities for the congregate care facility, and supplies for the winery, hotel and spa. If these supplies are not locally available, then the market for new industries may be generated. Again, however, this economic growth would be considered a positive influence in the City of Brentwood.

The Annexation Sites could also generate economic growth. The Annexation Sites would generate approximately 182 jobs, of which 170 would be generated through college instruction and administration at the community college. College students would increase the demand for restaurants, entertainment, clothing and recreational facilities. Since this economic growth would be in a portion

of Brentwood that the City is striving for employment growth, the college would be considered a positive influence in the City of Brentwood.

Foster Population and Housing Growth

The Vineyards project would develop 1,100 active adult living units, 150 market rate single-family homes, 200 market rate multi-family homes and 150 senior rental housing units. A total of 50,000 s.f. of congregate care facilities would also be developed as well as 150 assisted living units. These housing opportunities would generate some 3,575 persons (see Section 3.3 of this EIR). This population level is within the City of Brentwood and ABAG population projections for this area. Moreover, the type of housing proposed is directed at a particular and growing type of population that will have an increasing demand in the City and greater County area. Consequently, the development of housing and the ability to meet a specific market need would be considered a benefit of the Vineyards project.

A large portion of SPA J (approximately 4,000 acres) has recently been converted to a California state park. Consequently, it has been removed from the potential “urban” land uses originally contemplated under the Brentwood General Plan. Conversion of the SPA J land area to a state park has effectively removed approximately 4,000 acres of the City of Brentwood “developable” inventory of land. Because the population that would be generated by the Vineyards project is well within the population and housing forecasts for Brentwood and ABAG, it is not seen as a substantial and adverse change.

The Annexation Sites would have the potential to generate some 170 persons through the provision of new jobs, however, it is unlikely that all the jobs provided by the community college would be filled by new residents. This population would be generated primarily by the potential community college through support staff and faculty that may be employed at the facility. The potential population growth fostered by the community college would not be substantial and would be within the population level assumed by the City of Brentwood and ABAG population projections. It should also be noted that many of the support staff, and potentially the faculty positions as well, that would be employed at the community college would potentially be current residents of the City of Brentwood. Currently, many residents of the City of Brentwood commute outside of the community to the employment centers of the East Bay area for work. The provision of support and faculty positions at the potential community college would have the potential to attract current residents of the City who currently have to commute for equivalent positions.

Remove Obstacles to Population Growth

The Vineyards project would require the approval of a rezoning and annexation into the City of Brentwood. However, the project site is located within the City of Brentwood sphere of influence and planning area and was identified for some form of “urban development” under the SPA J land use designation in the General Plan. The rezoning and annexation would remove an obstacle to the development of the site and to population growth, but these actions were already contemplated by the City of Brentwood through its General Plan.

Approvals of actions on the Annexation Sites would not directly result in new population because they are not designated for residential development. Therefore, annexation of these properties would not remove obstacles to population growth. Should a community college be ultimately developed on the

college site, it would generate a new student population. It is anticipated, however, that the majority of students that would attend the college would be from an already existing local/regional population and not substantially increase the demand for new housing in the City of Brentwood.

Tax Existing Community Services or Facilities

Substantial increases in population growth may result in the need to increase existing community services and facilities, thus requiring the construction of new public facilities that could cause significant environmental effects. The construction of new facilities may also expand the service capacity, which would then allow for future population growth.

The proposed project would result in an increase in population. As discussed in Section 3.13 of this EIR, the Vineyards project would result in an increased demand on fire and police services and significant environmental impacts. The East Contra Costa Fire Protection District has adequate facilities, staff, and equipment to serve the proposed Vineyards project and Annexation Sites. The increase in population with the Vineyards project would also result in the need for additional police officers and equipment. Compliance with the Brentwood Municipal Code would be required and the applicant would be required to pay applicable developer fees to address increased demands on police and fire services. The proposed Vineyards project would result in a less than significant impact on police and fire services.

The Vineyards project would also require the installation of a new potable water storage tank and the extension of on-site water, wastewater, electrical service and telephone communication lines. The Vineyards project will provide a 4 million gallon water storage tank to serve the needs of the Vineyards project and existing City of Brentwood water storage needs. The water storage tank is a direct need of the Vineyards project and, by itself would not be growth-inducing. However, the City of Brentwood has the additional need for water storage to serve the existing and planned growth in the City. Therefore, the water storage tank would not be sized to serve growth beyond what is needed for the Vineyards project, and planned City of Brentwood growth.

The extension of on-site water, wastewater, electrical service and telephone communication lines would be from existing available points of connection across the Vineyards project site. The utilities of the Vineyards project are being situated such that the potential community college could connect into service lines via Fairview Avenue. No other development is planned to connect into or otherwise “access” the water, wastewater, electrical service and telephone communication lines planned in the Vineyards project. Consequently, except for the potential of the community college to connect into the water, wastewater, electrical service and telephone communication lines of the Vineyards project, substantial growth-inducing impacts would not result.

Encourage and Facilitate Other Activities That Could Significantly Affect the Environment

The characteristics of the proposed project would not encourage and facilitate other known activities (e.g., result in the need for a new landfill) that could significantly affect the environment, either individually or cumulatively. The individual environmental effects of the proposed project are discussed in Section 3.0, Environmental Setting, Impacts, and Mitigation Measures. The cumulative effects of the proposed project in combination with the environmental effects of the other potential

projects in the area are discussed in Section 4.0, Cumulative Impacts. No significant growth-inducing effects would occur as a result of the proposed project.

Conclusion

As discussed above, the growth-inducing impacts of the proposed project would not be considered substantial and adverse.

9.0 REPORT PREPARATION PERSONNEL

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11.0 GLOSSARY OF TERMS, ABBREVIATIONS AND ACRONYMS

AB	Assembly Bill
ABAG	Association of Bay Area Governments
AbE	.....	Altamont Clay, 15-30% slopes
AC	.....	Agricultural Conservation
AC	.....	Agricultural Core
ADT	.....	Average Daily Trips
AF	.....	Acre-feet or acre-foot
afy	.....	Acre-feet of water per Year
AL	.....	Agricultural Land
ANSI	.....	American National Standards Institute
APE	.....	Area of Potential Effect
AQAP	.....	Air Quality Attainment Plan
ARB	.....	Air Resources Board
ASTM	.....	American Society of Testing and Materials
Basin	.....	San Francisco Bay Area Air Quality Basin
BAAQMD	.....	Bay Area Air Quality Management District
BCRS	.....	Bridge's Coast Range Shoulderband Snail
BdF	.....	Briones Loamy Sand, 30-50% slopes
B&K	.....	Bruel & Kjaer
BMP	.....	Best Management Practice
BOD	.....	Biochemical Oxygen Demand
BP	.....	Business Park
C ¹	.....	Candidate for USFWS Endangered or Threatened Species Listing
CAA	.....	Federal Clean Air Act
CAAQS	.....	California Ambient Air Quality Standards
CalTrans	.....	California State Department of Transportation
CAP	.....	Clean Air Plan
CARB	.....	California Air Resources Board

CBOC	California Burrowing Owl Consortium
CCAA	The California Clean Air Act of 1988
CCCCD	Contra Costa Community College District
CCCFCWCD	Contra Costa County Flood Control and Water Conservation District
CCFPD	Contra Costa Fire Protection District
CCP	Community Character Policies
CCTA	Contra Costa County Transportation Authority
CCWD	Contra Costa Water District
CDF	California Department of Forestry and Fire Protection
CDFG	California Department of Fish and Game
CDPR	California Department of Parks and Recreation
CEC	California Energy Commission
CE	Listed as Endangered by the State of California
CEQA	California Environmental Quality Act
CFC	Chlorofluorocarbon Compounds
CFP	Fully protected under the Cal. Fish and Game Code
cfs	Cubic Feet per Second
CHMIRS	California Hazardous Material Incidence Report System
CHP	California Highway Patrol
CHRIS	California Historic Resources Information System
CIWMB	California Integrated Waste Management Board
cm	Centimeter (s)
CNDDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
COD	Chemical Oxygen Demand
CP	Commercial Policies
CP	Protected Species under Cal. Code of Regulations (Sec. 3.7 Biol. Rescs.)
CPE	Proposed for listing as Endangered
CPR	Cardio-Pulmonary Resuscitation
CPUC	California Public Utilities Commission
CR	Listed as Rare by the State of California
CRF	California Red-Legged Frog
CRHR	California Register of Historic Resources

CSC	California Species of Special Concern
CT	Listed as Threatened by the State of California
CTS	California Tiger Salamander
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
CVRWQCB	Central Valley Regional Water Quality Control Board
c.y.	cubic yards
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted Decibel Scale
DBCP	Dibromochloropropane
DNL	Day/Night Average Noise Level (also referred to as Ldn)
DO	Dissolved Oxygen
DTSC	Department of Toxic Substances Control
DU	Dwelling Unit
DWD	Diablo Water District
DWR	Department of Water Resources
EAP	Energy Action Plan
EBRPD	East Bay Regional Parks District
ECCFPD	East Contra Costa Fire Protection District
ECCHCP	East Contra Costa County Habitat Conservation Plan
ECCHCPA	East Contra Costa County Habitat Conservation Plan Association
ECCID	East Contra Costa Irrigation District
ECCRFFA	East Contra Costa County Regional Fee and Financing Authority
ECTIA	East Contra Costa County Transportation Improvement Authority
EIR	Environmental Impact Report
EMT	Emergency Medical Technicians
EPA	Environmental Protection Agency
ESA	Phase I Environmental Site Assessment
FAR	Floor Area Ratio
FBI	Federal Bureau of Investigation
FCAAA	Federal Clean Air Act Amendments

- FCR Fire Cracked Rock
- FE Endangered by the Federal Government
- FEMA Federal Emergency Management Agency
- FESA Federal Endangered Species Act
- FHWA Federal Highway Administration
- FIRM Flood Insurance Rate Map
- FPE Proposed as Endangered by the Federal Government
- FPT Proposed as Threatened by the Federal Government
- FSC¹ Species of Concern
- FSS Federal sensitive species, as listed by Bureau of Land Management and USFWS
- FT Threatened by the Federal Government
- FWSS Future Water Supply Study

- GAMAQI Guide for Assessing and Mitigating Air Quality Impacts
- GMP Growth Management Policies
- GP General Plan
- GPA General Plan Amendment
- Gpm gallons per minute
- GPU General Plan Update

- H⁺ Hydrogen Ion
- HCM Highway Capacity Manual
- HCP Habitat Conservation Plan

- IDF Intensity-Duration-Frequency
- ISO Insurance Services Office
- ITE Institute of Transportation Engineers

- KaC Kimball Rocky Clay Loam, 2-9% slopes
- KaE Kimball Rocky Clay Loam, 9-30% slopes
- Kdv Deer Valley Sandstone

- LAFCO Local Agency Formation Commission
- Ldn Day/Night Average Noise Level (also known as DNL)
- Leq Equivalent Sound Level

LOS	.....	Level of Service
MB	.....	Migratory non-game birds of management concern to the USFWS
MBTA	.....	Migratory Bird Treaty Act
MCE	.....	Maximum Credible Earthquake
mcy	.....	Million Cubic Yards
µg/m ³	.....	Micrograms per Cubic Meter of Air
mg/m ³	.....	Milligrams per Cubic Meter of Air
mgd	.....	Million Gallons per Day
mg/l	.....	Milligrams per Liter
MLD	.....	Most Likely Descendant
MMP	.....	Mitigation and Monitoring Plan
MOU	.....	Memorandum of Understanding
MPE	.....	Maximum Probable Earthquake
mph	.....	Miles per Hour
msl	.....	Mean Sea Level
MUTCD	.....	Manual of Uniform Traffic Control Devices
N	.....	Nitrogen
N/N	.....	Nitrate-Nitrogen
NAAQS	.....	National Ambient Air Quality Standards
NAGPRA	.....	Native American Graves Protection and Repatriation Act
NEPA	.....	National Environmental Policy Act
NFIP	.....	National Flood Insurance Program
NRHP	.....	National Registry of Historic Places
NO	.....	Nitrogen Monoxide
NO ₂	.....	Nitrogen Dioxide
NOA	.....	Notice of Availability
NO _x	.....	Nitrogen Oxides
NOAA	.....	National Oceanic and Atmospheric Administration
NOC	.....	Notice of Completion
NOI	.....	Notice of Intent
NOP	.....	Notice of Preparation
NPDES	.....	National Pollution Discharge Elimination System
NPS	.....	National Park Service

NRCS	Natural Resource Conservation Service (Formerly the Soil Conservation Service)
NWIC	Northwest Information Center
NWPs	Nationwide Permits
O ₃	Ozone
Oaf	Artificial fill
OAQPS	EPA Office of Air Quality Planning and Standards
OHP	Office of Historic Preservation
P	Phosphorous
Pb	Pescadero Clay Loam
PD	Planned Development
PG&E	Pacific Gas and Electric
PHF	Peak Hour Factor
PM ₁₀	Particulate Matter Less than 10 Microns
PM _{2.5}	Particulate Matter Less than 25 Microns
ppm	Parts per Million
psig	Per Square Inch Gauge
Qal	Holocene-aged alluvium
Qc	Colluvium
Qoal	Older alluvial deposits
RGMP	Regional Growth Management Program
ROG	Reactive Organic Gases
RP	Residential Policies
RTOR	Right-turn-on-red
RWQCB	Regional Water Quality Control Board
RZ	Reporting Zones
s.f.	Square Feet
SHPO	State Historic Preservation Officer
SJVAPCD	Local Air Pollution Control District
Sm	Silty Clay Loam
SMARA	State Surface Mining and Reclamation Act

SOI	Sphere of Influence
SPA's	Special Planning Areas
SPA J	Special Planning Area J
SO ₂	Sulfur Dioxide
SR4 Bypass	State Route 4 Bypass
STU	Shovel Test Unit
SWANCC	Solid Waste Agency of Northern Cook County
SWPPP	Storm Water Pollution Prevention Plan
TAC	Toxic Air Contaminant(s)
TAZ	Traffic Analysis Zone
Td	Domengine sandstone
TDS	Total Dissolved Solids
TKN	Total Kjeldahl Nitrogen
Tma/c	Lower bedrock member of Meganos formation
Tmd	Sandstone member of Meganos formation
Tme	Upper member of Meganos formation
TOC	Total Organic Carbon
TRB	Transportation Research Board
UBC	Uniform Building Code
ULL	Urban Limit Line
UR	Urban Reserve
USACE	United States Army Corps of Engineers
US EPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
UWMP	Urban Water Management Plan
V/C	Volume-to-capacity
VOC (ROG)	Volatile Organic Compounds
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

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