

---

---

**FINAL INITIAL STUDY/MITIGATED NEGATIVE DECLARATION**

State Clearinghouse Number: 2010032053

Prepared for  
The City of Antioch

## **Tierra Villas Project**

Prepared by



135 Main Street, Suite 1600  
San Francisco, CA 94105

May 2011



**To conserve resources this document was printed on 100% recycled paper.  
Please recycle!**

## INTRODUCTION

On March 15, 2010, the City of Antioch (City) published a Draft Initial Study/Mitigated Negative Declaration (IS/MND), which analyzed potential impacts of the Tierra Villas Project (project). Pursuant to Section 15073 of CEQA, the Draft IS/MND included a 30-day public review period, ending on April 13, 2010.

The City received a public request to extend the review period, and agreed to extend the period through May 17, 2010, a total of 64-days. During this time, the City received five written comment letters.

This Final IS/MND includes the following information:

**Section 1** A copy of each public comment letter received during the public review period and an individual response to each substantive issue.

**Section 2** A revised IS/MND including edits, corrections, and project clarifications made in response to comments. In this revised IS/MND, new text is shown in **bold-underline** and deleted text is shown in ~~strikeout~~.

This document constitutes the Final IS/MND for the project. The Planning Commission and City Council will consider this environmental record prior to taking action on the project as a whole.

## Section 1

### Letters Received in Response to the Draft Initial Study/Mitigated Negative Declaration

Letter 1	Charles Armor	California Department of Fish and Game
Letter 2	Pam Ceccarelli	California Department of Conservation
Letter 3	Bill Pfanner	California Energy Commission
Letter 4	Robyn C. Purchia	Adams Broadwell Joseph & Cardozo (includes subsequent email dated April 21, 2010)
Letter 5	Lisa Carboni	California Department of Transportation

**Insert Letter 1: CA Dept of Fish and Game (page 1)**

**Insert Letter 1: CA Dept of Fish and Game (page 2)**

**Insert Letter 1: CA Dept of Fish and Game (page 3)**

## **Response to Comment Letter 1 – California Department of Fish and Game**

**COMMENT 1.1.** There is no mention of special-status plant species in the IS/MND. Special-Status plant species known to exist in the vicinity of the project site include showey golden madia (*Madia radiata*), round-leaf filaree (*California macrophylla*), brittlescale (*Atriplex depressa*), San Joaquin spearscale (*Atriplex joaquiniana*), and big tarplant (*Blepharizonia plumosa*).

**RESPONSE 1.1. Section IV, Biological Resources,** of the Draft IS/MND (page 52) states that the project site does not contain habitat expected to support special-status plant species due to historic and ongoing land disturbances. Prior to 2003, the project site was an irrigated orchard, and since that time, the project site has been regularly tilled. Currently, the project site only contains non-native, annual grasses and very weedy vegetation. The extent of historic and ongoing disturbance to the project site has eliminated any habitat that could support special-status plant species and no special-status plant species are expected to occur. Therefore, the project would not result in any impacts to special-status plant species.

**COMMENT 1.2.** The main text of the IS should provide a full description of each special-status species observed or known to occur within a five-mile radius of the project site (at a minimum), including habitat associations, range, threats, and any other information necessary to support a finding of significance. The IS should also discuss the criteria that were used to determine the level of significance and evidence that supports each determination. Appendices may supplement the analysis provided in an IS, but cannot be used as a substitute. All impacts on special-status species must be reported regardless of their level of significance.

**RESPONSE 1.2. Section IV, Biological Resources,** of the Draft IS/MND (page 52) notes that information in the biological resources section was incorporated from the Biological Evaluation Report prepared by Pacific Biology (July 2009), which is included in its entirety as **Appendix B** of the Draft IS/MND. The Draft IS/MND specifically addresses the potential onsite presence of the special-status wildlife species documented within five miles of the project site, including California red-legged frog, California tiger salamander, vernal pool fairy shrimp, vernal pool tadpole shrimp, San Joaquin kit fox, Swainson's hawk, burrowing owl, American badger, white-tailed kite, loggerhead shrike, tricolored blackbird, molestan blister beetle, and silvery legless lizard.

**Section IV, Biological Resources,** of the Draft IS/MND provides a discussion of potential impacts to each of these species, based on an evaluation of each species' potential to occur on the site and in accordance with the relevant significance criteria from Appendix G of the CEQA Guidelines. The significance finding for each species is supported by database research and also takes into consideration factors such as the suitability of onsite habitats to support the species and known occurrences of the species in the project area. Supplemental life history information for locally occurring special-status wildlife species is provided in **Appendix B** of the Draft IS/MND.

**COMMENT 1.3.** The project proposes to develop land that provides potential habitat for the western burrowing owl (*Athene cunicularia*). The Bay Area's population of western burrowing owls is declining due to intense pressure for urban development within suitable burrowing owl nesting and foraging habitat. Owl survival can be adversely affected by disturbance and foraging habitat loss, even when impacts to individual birds and nest/burrows are avoided.

Although the IS/MND indicates that burrowing owls were not found on-site during a June 2009 survey, it acknowledges that several burrowing owl occurrences have been found within a one-mile radius. Moreover, it acknowledges that the project site provides suitable burrowing owl habitat. The number of pre-construction surveys necessary to accurately detect current owl presence and owl locations depends on a number of criteria such as: 1) the time period that has elapsed since the last breeding survey was completed; 2) height and density of vegetation that may obscure owl presence; 3) topographical conditions that may obscure owl presence; 4) time of year (e.g., in the winter, owls spend more time in their burrows); 5) time of day and weather conditions when surveys are conducted; 6) long-term history of owl use at the site; 7) size of the parcel and degree of coverage by walking or by intensive observations via spotting scope, and 8) tolerance of owls to human presence. Generally, at a minimum, four survey visits on at least four separate days are necessary to detect burrowing owls.

Initial pre-construction surveys should be conducted outside of the owl breeding season (January 15 to August 31) but as close as possible to the date that ground-disturbing activities will begin. Generally, initial pre-construction surveys should be conducted no more than 30 days prior to ground-disturbing activities (e.g., diking, Clearing, grubbing, grading). The time lapse between surveys and site disturbance should be as short as possible and will be determined by DFG based on specific project conditions but generally should not exceed seven days. Additional surveys are necessary when the initial disturbance is followed by periods of inactivity or the development is phased spatially and/or temporally over the project area.

Biologists conducting pre-construction surveys should expend enough effort, based on the above criteria, to assure with a high degree of certainty that take of owls will not occur once site modification and grading activities begin. The full extent of pre-construction survey efforts must be described and mapped in detail (e.g., dates, time periods, weather, area(s) covered, and methods employed) in a biological report. Current vegetation and topographical conditions and their corresponding effect on visibility should also be described. The report should be submitted to DFG for review.

**RESPONSE 1.3.** As discussed in the Draft IS/MND, burrowing owls are not expected to nest on the project site. This conclusion is based on the results of protocol nesting surveys and the fact that historic and ongoing tilling prevents colonization or successful nesting by burrowing owls. However, there is potential for the short-term use of the project site by burrowing owls during winter migration or dispersal, as stated on page 58 and 59 of the Draft IS/MND.

**Mitigation Measure IV-4** requires the implementation of CDFG-approved measures to prevent the loss or harm of non-breeding burrowing owls. As a precautionary measure, searches for burrowing owls would also be conducted as part of the preconstruction nesting bird survey, as required by **Mitigation Measure IV-3a** of the Draft IS/MND. **Mitigation Measure IV-3a** has been revised to specify that burrowing owl clearance surveys shall be conducted according to the Burrowing Owl Survey Protocol and Mitigation Guidelines (California Burrowing Owl Consortium 1993), which is the widely accepted survey protocol for the species. This clarification is shown in **Section IV, Biological Resources**, of this Final IS/MND.

**COMMENT 1.4.** Projects impacting owls and owl habitat should mitigate all project-specific and cumulative impacts to nesting, foraging, wintering, dispersal, and migration habitat (i.e., breeding and non-breeding season) under the California Environmental Quality Act, to below a level of significance. Mitigation should be based on the acreage of any suitable habitat disturbed or destroyed (even if such habitat is not occupied during a particular survey), with consideration of number of owls present and significance of the area for all burrowing owl life history stages. The IS/MND proposes to mitigate for impacts to burrowing owls by implementing avoidance measures (**Mitigation Measure IV-4**) such as performing preconstruction surveys and exclusion from burrows using one-way doors. The IS/MND, however, does not mitigate for loss of habitat.

To mitigate impacts on burrowing owls to the maximum extent feasible, DFG advises that burrows be protected and mitigation be provided to offset permanent impacts to foraging and nesting habitat. Permanent habitat mitigation may require the project applicant to purchase land or contribute funds to the management of a burrowing owl preserve, such as the recently constructed preserve at Prewitt Park. Lands intended for burrowing owl mitigation should be of sufficient size or adjacent to other conserved lands to ensure ecological sustainability with minimum long-term maintenance needed by humans (e.g., rely on native grazers, compatible livestock grazing practices, burrow excavation by native animals and, where feasible, controlled burns) and should also be chosen to avoid problems associated with the urban-wildland interface, for example, burrow disturbance and destruction by unleashed dogs, human foot and vehicle traffic and predation by cats and dogs and urban-adapted wildlife, including raptors attracted to urban landscapes.

The use of artificial burrows should be avoided, except to temporarily attract owls, or where burrow installation is necessary as an integral owl population management tool. Artificial burrow installation must be accompanied by a management plan for the site and programs for burrow maintenance and effectiveness monitoring. Performance criteria should include site tenacity by owls, yearly successful reproduction by owls, documented fledging by juvenile owls, and colonization by owls from elsewhere.

**RESPONSE 1.4.** **Section IV, Biological Resources**, of the Draft IS/MND (page 58) states that no burrowing owls were observed on the project site during protocol nesting surveys conducted in 2009. Additional support for this conclusion includes the regular tilling that occurs on site and the

presence of dogs noted in the nesting surveys which could further deter use of the site for nesting/colonization. Since no sign of burrowing owls were documented during protocol surveys, in combination with the ongoing tilling cycle of the project site, the Draft IS/MND concluded that burrowing owls are not expected to nest on the project site and that the site has likely not historically supported nesting burrowing owls. Thus, nesting success or continued persistence of burrowing owls in the project region is not expected to be dependent on the habitat provided by the project site. The Burrowing Owl Survey Protocol and Mitigation Guidelines (California Burrowing Owl Consortium 1993) only recommends the preservation or replacement of burrowing owl habitat if a site (to be developed) is used by nesting or resident burrowing owls. Therefore, the replacement of burrowing owl habitat is not required as mitigation by the Draft IS/MND.

**Insert Letter 2: CA Dept of Conservation (page 1)**

## **Response to Comment Letter 2 – California Department of Conservation**

**COMMENT 2.1.** The proposed project is located within the administrative boundaries of the Brentwood natural gas field. From the information submitted, there does not appear to be any abandoned or recorded gas wells within the project area. However, if any unrecorded wells are uncovered or damaged during excavation or grading, remedial plugging operations may be required. The Sacramento District office must be contacted to obtain information on the requirements for and approval to perform remedial operations.

**RESPONSE 2.1.** **Appendix D**, the Phase I Environmental Site Assessment (ESA), of the Draft IS/MND indicates that no current or former exploratory wells are known to occur within the vicinity of the project site. Clarifying text has been added to **Section VII, Hazards and Hazardous Materials**, to document this finding. This new text is shown in **Section VII, Hazards and Hazardous Materials**, of this Final IS/MND.

**Mitigation Measure VII-1** of the Draft IS/MND requires that a qualified professional prepare a Phase II ESA prior to the issuance of grading permits by the City in order to assess the presence and extent of potentially unknown hazardous materials, such as unrecorded gas wells. If the Phase II ESA findings confirm the presence of previously unrecorded gas wells on the project site, site remediation will be required with oversight by applicable state and local regulatory agencies, depending on the nature and extent of possible contamination. Clarifying text has been added to **Mitigation Measure VII-1** as part of this Final IS/MND to specify that if unrecorded gas wells are uncovered, a revision of the tentative map to reduce lots or create no-build easements and remedial plugging operations or re-abandonment pursuant to Section 3208.1 of the Public Resources Code may be required. This new text is also shown in **Section VII, Hazards and Hazardous Materials**, of this Final IS/MND.

**COMMENT 2.2.** Additionally, if there are any wells at the project site, the Division recommends that no structure be built over or in proximity to an abandoned well location. Section 3208.1 of the Public Resources Code authorizes the State Oil and Gas Supervisor to order the re-abandonment of a previously abandoned well when construction of any structure over or in the proximity of a well could result in a hazard. The cost of re-abandonment operations is the responsibility of the owner or developer of the project upon which the structure will be located. If a well requiring re-abandonment is on an adjacent property and near the common property line, the Division recommends that the structure be set back sufficiently to allow future access to the well.

**RESPONSE 2.2.** Refer to Response 2.1.

**Insert Letter 3: CA Energy Commission (page 1)**

### **Response to Comment Letter 3 – California Energy Commission**

**COMMENT 3.1.** We would like to assist in reducing the energy usage involved in your project. Please refer to the enclosed Appendix F of the California Environmental Quality Act for how to achieve energy conservation. In addition, the Energy Commission's Energy Aware Planning Guide is also available as a tool to assist in your land use planning. For further information on how to utilize this guide, please visit [www.energy.ca.gov/energy\\_aware\\_guide/index.html](http://www.energy.ca.gov/energy_aware_guide/index.html).

**RESPONSE 3.1.** Appendix F of the CEQA Guidelines requires that potentially significant energy implications be considered in an Environmental Impact Report (EIR). In accordance with Section 15070 of the CEQA Guidelines, an IS/MND was prepared for the project. As documented in the Draft IS/MND, implementation of appropriate mitigation measures would reduce any potentially significant effects to a less-than-significant level and the project would not result in significant effects to the environment. As an EIR was not required for this project, no evaluation of energy usage associated with the project is required under CEQA.

However, as discussed in the Project Description of the Draft IS/MND, the project would incorporate green building construction and design techniques, including energy efficient design elements. Per the project's Residential Development Allocation Application, the project would provide 4,300 square feet of solar panels to provide an in-grid system to supplement the common area electrical needs, including streetlights, bollard lights, pathway lights, and irrigation controllers. The project would include energy efficient features for all residential units, including high-efficiency furnaces and air conditioners, *EnergyStar* light fixtures and appliances, tankless water heaters, insulated hot water lines, insulated exterior door and garages, and mechanically controlled ventilation systems to maximize heating and cooling efficiency. The residential units would also incorporate radiant roof barriers, or high solar reflectance barriers, to reduce solar absorption. The project would also be required to meet the minimum point threshold of a green home as identified in the most recent version of the New Home Construction Green Building Guidelines, as published by Build It Green, pursuant to the City Resolution No. 2008/10. Refer to the Project Description in the IS/MND for a discussion of the project's green building techniques.

**Appendix A**, CEQA Guidelines Amendments, of the Draft IS/MND also discusses the project's consistency with federal, state, and local greenhouse gas regulations in relation to energy usage. The project would be consistent with the intent of California Executive Order S-3-05, Assembly Bill 32, Senate Bills 97 and 375, California's Energy Efficient Standards for Residential Buildings, and the City of Antioch Resolution No. 2008/10. **Mitigation Measures A-II-1, A-II-2, and A-II-3** require the project to integrate construction waste diversion and inclusion of recyclable building materials into the project plans, incorporate green building designs as set forth in the New Home Construction Green Building Guidelines, and comply with formalized greenhouse gas thresholds

and/or reduction measures. Incorporation of **Mitigation Measures A-II-1, A-II-2, and A-II-3** would ensure that the greenhouse gas emissions (and associated energy use) during construction and operation of the project would not result in a significant impact to the environment.

**Insert Letter 4: Adams Broadwell email dated April 21, 2010**



**Insert Letter 4: Adams Broadwell Joseph & Cardoza (page 2)**

**Insert Letter 4: Adams Broadwell Joseph & Cardoza (page 3)**

**Insert Letter 4: Adams Broadwell Joseph & Cardoza (page 4)**

**Insert Letter 4: Adams Broadwell Joseph & Cardoza (page 5)**

**Insert Letter 4: Adams Broadwell Joseph & Cardoza (page 6)**

## **Response to Comment Letter 4 – Adams Broadwell Joseph & Cardoza**

**COMMENT 4.1.** As we discussed over the telephone this morning, we have decided to limit the scope of our PRA request dated April 15, 2010 to just application and CEQA materials related to the Tierra Villas Project.

**Response 4.1.** Pursuant to the commenter's request, the following comments and responses address only those portions of the letter dated April 15, 2010 that relate to application and CEQA materials related to the Tierra Villas Project.

**Comment 4.2.** On behalf of International Brotherhood of Electrical Workers, Local 302, Plumbers and Steamfitters, Local 159, and Sheet Metal Workers, Local 104, we request immediate access to any and all application and file materials related to the Tierra Villas Project ("Project"). This request includes, but is not limited to:

- 1) Any and all supporting documents and/or other documents referred to or relied upon in preparation is the MND except those documents available on the Internet;
- 2) Any and all applications and supporting documents related to the Project;

**RESPONSE 4.2.** In response to this comment, the City made the project's files available for public review. The following resources and supporting information were made available for public review upon request at the City offices:

- Supporting documents for the Draft IS/MND
  - Hard copies of the following technical reports were made available:
    1. Biological Evaluation Report prepared by Pacific Biology (August 2009)
    2. Burrowing Owl Report prepared by Pacific Biology (September 2009)
    3. California Historical Resources Information System Response (April 2009)
    4. Geotechnical Engineering Study prepared by PRA Group, Inc. (January 2007)
    5. Phase I Environmental Site Assessment (ESA) prepared by Aqua Science Engineers (July 2003)
    6. Stormwater Control Plan prepared by Bellecci & Associates (January 2010)
    7. Environmental Noise Assessment prepared by Illingworth & Rodkin, Inc. (September 2009)
    8. Traffic Impact Analysis prepared by Omni-Means (June 2009)
  - Web addresses were provided for the following:
    1. City of Antioch Urban Water Management Plan prepared by Brown & Cadwell
    2. Climate Change Scoping Plan prepared by the California Air Resources Board (CARB)

3. Contra Costa County Important Farmlands 2008 prepared by the California Department of Conservation
  4. Contra Costa County Fire Hazard Severity Zones
  5. California Integrated Waste Management Board
  6. Roddy Ranch Draft EIR prepared by the City of Antioch
  7. Soil Interpretation Help Sheet, Guide for Determining Soil Permeability
- Project application materials
  - Maps identifying the project location and Assessor Parcel Numbers
  - Project site plans

**COMMENT 4.3.** On behalf of International Brotherhood of Electrical Workers, Local 302, Plumbers and Steamfitters, Local 159, and Sheet Metal Workers, Local 104, we respectfully request an extension of the time to comment on the Mitigated Negative Declaration (“MND”) for the Tierra Villas Project (“Project”). This request for extension is based on the City’s failure to provide notice of the issuance of the MND in response to our written request for notice, and the complexity and controversy surrounding the Project.

**RESPONSE 4.3.** The City published the Draft IS/MND on March 15, 2010 and commenced an initial 30-day public review and comment period through April 13, 2010. Notice of the public review and comment period was submitted to the State Clearinghouse, was published in the local newspaper (Contra Costa Times), and posted on the City’s website (<http://www.ci.antioch.ca.us/>). In response to this comment, the City extended the comment period for an additional 34-days through May 17, 2010, for an overall public review and comment period of 64-days. No additional public comments were received during the extended comment period.

**COMMENT 4.4.** As you know, the Project is also complex and controversial. The Project may cause substantial impacts to air quality, biological resources, and traffic. The Project site will also be served by the Contra Costa Fire Department, which is not currently meeting the City’s five-minute response time requirement. Thus, development of the Project, as proposed, may put a significant strain on public services. The complexity of the Project and the controversy surrounding the development proposal warrant additional time for public review.

**RESPONSE 4.4. Section III, Air Quality, Section IV, Biological Resources, and Section XV, Transportation and Traffic,** of the IS/MND provide a discussion of the existing conditions in the project area and an analysis of associated project impacts relative to air quality, biological resources, and traffic, respectively.

As discussed in **Section III, Air Quality**, the project would not conflict with the implementation of existing air quality attainment plans, such as the Bay Area 2000 Clean Air Plan or Bay Area 2005 Ozone Strategy. The project would not be considered to have the potential to generate significant

quantities of air pollutants in exceedance of air quality standards, and **Mitigation Measures III-1** and **III-2** require the implementation of measures to minimize potential air quality impacts during project construction.

**Section IV, Biological Resources**, concludes that the project would not significantly impact riparian habitat or sensitive natural communities; interfere with migratory wildlife corridors or impede a native wildlife nursery site; conflict with local policies or ordinances protecting biological resources; or conflict with adopted Habitat Conservation Plans or Natural Conservation Community Plans, or other approved local, regional, or state habitat conservation plans. With the incorporation of the **Mitigation Measures IV-1** through **IV-5** identified in the Draft IS/MND, impacts to the California red-legged frog, vernal pool fairy, tadpole shrimp, Swainson's hawk, burrowing owls, and federally protected wetlands would be reduced to a less-than-significant level.

**Section XV, Transportation and Traffic** states that the project would not result in inadequate parking capacity, inadequate emergency access, conflict with alternative transportation programs, or conflict with air traffic patterns. Implementation of **Mitigation Measures XV-1** through **XV-4** would ensure that the project results in acceptable LOS operations, safe vehicle operations, and pedestrian access in the project area.

**Section XIII, Public Services**, describes the existing fire response service in the project area and the project's potential impacts to fire response services. The CCCFPD is not currently meeting the City's five-minute response time for 80 percent of all City emergency calls and there is an existing need for new and/or expanded fire facilities to achieve acceptable response times. While the project would incrementally worsen these unacceptable existing conditions, the project itself would not result in the substantial adverse impacts related to the construction of new or expanded fire facilities. **Mitigation Measure XIII-1** requires payment of a fire facility impact fee that would reduce project impacts on fire response service to a less-than-significant level. As fire facility impact fees were assessed at a district-wide level to determine the impact of new development relative to fire fighting infrastructure, payment of these fees represents appropriate project mitigation.

In regards to police services, several City budget cuts were made which resulted in a reduction in non-sworn police department staffing following publication of the Draft IS/MND. It was also determined that existing City funds would not be sufficient to fund additional police personnel at this time. The Draft IS/MND concluded that an increase in population associated with the project would create additional demands for police services and that funding for the employment of additional officers would be allocated by City funds. In response to the budget and staffing reductions, **Section XIII, Public Services**, has been revised to clarify the current existing staffing of the City of Antioch Police Department. The project description has also been revised to clarify that the project will establish a funding mechanism, such as a Community Facilities District, to fund additional police services.

Refer to Response 4.3 for a discussion in regards to extending the public review period.

**COMMENT 4.5.** We believe the comment period should be extended to May 14, 2010 or 35 days from our receipt of all documents identified in our public records request, whichever is later.

**RESPONSE 4.5.** Refer to Responses 4.2 and 4.3.

**Insert Letter 5: Department of Transportation (page 1)**

**Insert Letter 5: Department of Transportation (page 2)**

## **Response to Comment Letter 5 – Department of Transportation**

**COMMENT 5.1.** The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures. This information should also be presented in the Mitigation Monitoring and Reporting Plan of the environmental document. Required roadway improvements should be completed prior to issuance of the Certificate of Occupancy. Since an encroachment permit is required for work in the state right of way (ROW), and the Department will not issue a permit unless our concerns are adequately addressed, we strongly recommend that the City of Antioch work with both the applicant and the Department to ensure that our concerns are resolved during the California Environmental Quality Act (CEQA) process, and in any case prior to submittal of a permit application.

**RESPONSE 5.1.** The text of **Mitigation Measure XV-1 and XV-2** includes a discussion of the project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring. The text of **Mitigation Measure XV-3 and XV-4** has been revised to include a discussion of the scheduling and implementation responsibilities for the proposed mitigation measures. The project is the only contributor to these impacts; therefore a discussion of the project's fair share contribution is not applicable. The mitigation monitoring and reporting program has been revised to include this information.

**COMMENT 5.2.** In **Appendix A, Section A. III. Transportation and Traffic**: Please include a discussion of mitigation measures.

**RESPONSE 5.2.** For the sake of clarity, the text of **Mitigation Measure XV-1 and XV-2** has been added to **Appendix A**, as requested.

**COMMENT 5.3.** In Appendix G: Project traffic generated for 2030 conditions to and from State Route 4 (SR-4) Bypass South (20%) does not balance. On page 28 and 29, please correct Figure 8 (A and B) intersections #5, #6, and #13, while making the other correlating corrections as well.

**RESPONSE 5.3.** The observation that the distribution of proposed project-generated traffic to/from the south (20%) via the State Route 4 (SR-4) Bypass does not balance is correct. With year 2030 conditions, the overall roadway network would change from Near-Term plus Project conditions to include circulation improvements in the southern portion of the study limits, among other improvements. One circulation improvement would include the southerly extension of Heidorn Ranch Road to Sand Creek Road. In addition, the extension of Sand Creek Road would be completed from the SR-4 Bypass west through Hillcrest Avenue (see Planned Cumulative Circulation Improvements). As part of this latter circulation improvement, a full-access interchange (diamond/partial cloverleaf) would be constructed at SR-4/Sand Creek Road.

Assuming the aforementioned year 2030 roadway network conditions, the 20% project generated traffic to/from the south would use the SR-4/Sand Creek Road interchange to access the project site via Heidorn Ranch Road rather than the northerly SR-4/Lone Tree Way interchange. The MND has been revised to clarify this change in trip distribution under cumulative 2030 conditions. Therefore, under these year 2030 conditions just 35% of the proposed project trips would be accessing the site through the SR-4/Lone Tree Way interchange (25% to/from the north on SR-4 Bypass and 10% to/from the east on Lone Tree Way) with 20% through the SR-4/Sand Creek Road interchange. All remaining project trip distribution assignments would remain unchanged from those stated in **Appendix G**. Volume Figures 8A and 8B on pages 28 and 29 in **Appendix G** are correct.

**COMMENT 5.4.** If a portion of the 2030 traffic condition is directed towards the Sand Creek interchange and SR-4, please include in the study.

**RESPONSE 5.4.** Please see Response 5.3. With 20% of the proposed project trips to/from the south using the SR-4/Sand Creek Road interchange, this would equate to 17 AM peak hour trips (4 in, 13 out). During the PM peak hour, this would equate to 24 trips (15 in, 9 out).

Based on future year 2035 volume projections for the SR-4 Bypass/Sand Creek Road interchange from the Phillips Lane Project Study Report (PSR), the proposed project's "fair share" contribution towards these circulation improvements have been calculated based on the amount of PM peak hour project trips traveling through the interchange.<sup>1</sup> At the future SR-4 Bypass Northbound Ramps/Sand Creek Road intersection, the proposed project would be adding 15 PM peak hour trips to an overall volume of 3,300 vehicles. This would equate to less than 1% (.005) at this northbound ramp intersection. At the SR-4 Bypass Southbound Ramp/Sand Creek Road intersection, the proposed project would be adding 24 PM peak hour trips to an overall volume of 2,870 vehicles. Again, this would equate to less than 1% (.008) at this southbound ramp intersection (see Year 2035 Volume Figure---attached).

It is noted that calculated proposed project "fair share" contributions may be overstated. It is likely that proposed project uses (residential) have been assumed in the transportation model validation for year 2035 forecasts since the proposed project is consistent with zoning and the land use element of the City's General Plan. Under year 2035 conditions with proposed project traffic, overall intersection operation for both SR-4 Bypass southbound off and northbound on/off ramps at Sand Creek Road is projected to be a LOS B during the AM and PM peak hour (see attached LOS calculation sheets/preliminary interchange layout plan).

---

<sup>1</sup> Fehr and Peers Transportation Consultants, "Phillips Lane PSR – Model Validation and Year 2007 and 2035 Forecasts," Technical Memorandum, Guy Bjerke, City of Antioch, Rob Reese, Fehr and Peers, November 14, 2008.

**COMMENT 5.5.** Corrections to Intersection #5 and #6 would ultimately have to include the 25% north and 20% south- SR-4 Bypass and 10% East Lone Tree access volumes, a total of 55% Project generated volumes.

**RESPONSE 5.5.** Comment noted. Proposed project trip distribution of 25% north and 20% south on SR-4 Bypass and 10% east on Lone Tree Way would only apply to Near-Term plus Project conditions. Under year 2030 cumulative conditions, proposed project traffic to/from the south on the SR-4 Bypass would use the new SR-4 Bypass/Sand Creek Road interchange. Please refer to Responses 5.3 and 5.4.

**COMMENT 5.6.** Please be advised that any work or traffic control that encroaches onto the state ROW requires an encroachment permit that is issued by the Department. To apply, a completed encroachment permit application, environmental documentation, and five (5) sets of plans clearly indicating state ROW must be submitted to the address below. Traffic-related mitigation measures should be incorporated into the construction plans during the encroachment permit process. See the website link below for more information.

**RESPONSE 5.6.** Comment noted. The applicant will be directed to comply with all applicable permitting requirements related to improvements within right-of-way owned by the state Department of Transportation.

*This page intentionally left blank*

## Section 2

### Project Description

1. *Project Title:* Tierra Villas
2. *Lead Agency Name and Address:* City of Antioch, Community Development Department, Planning Division, 3rd and H Streets, P.O. Box 5007, Antioch, CA 94531
3. *Contact Person and Phone Number:* **Mindy Gentry, Acting Senior Planner, (925) 779-7035**

4. *Project Location:*

The 20.3-acre project site is located in the southeastern portion of the City of Antioch (City), along the western side of Heidorn Ranch Road, south of Lone Tree Way. Heidorn Ranch Road forms a boundary between the City and the City of Brentwood. The project site is comprised of four parcels, including Assessor Parcel Numbers (APNs) 056-130-013, 056-130-015, 056-130-017, and 056-130-018. **Figure 1** shows the location of the project site.

5. *Project Sponsor's Name and Address:*

Stephen Allen  
Mission Peak Homes, Inc.  
40480 Encyclopedia Circle  
Fremont, CA 94538

6. *General Plan Designation:* Medium Low Density Residential (6 units/acre)
7. *Zoning:* Planned Development (6 dwelling units/acre)
8. *Description of Project:*

**Project Concept:** The Tierra Villas Project (project) would subdivide 20.3 acres into 115 residential lots. The project would also include park and open space areas and internal access roads.

As shown in **Figure 2a** and **Figure 2b**, vehicle access into the project site would be provided from Heidorn Ranch Road at two entry points: Street “B” would provide right-in, right-out only access, while a new Prewett Ranch Drive extension would allow full turning movements. The ultimate build out of the Prewett Ranch Drive extension is discussed in more detail under the heading “Circulation and Parking” below.

Per Section 9-5.601 of the Antioch Municipal Code, height, area, and setback regulations for the PD Zoning District are established on a project-by-project basis by the City Council. For this project, the applicant is proposing an average density of approximately 5.6 units per acre. Lot

sizes are proposed to vary considerably, ranging between 3,450 square feet to 13,364 square feet in area with an average lot size of 4,350 square feet. All lots would have minimum side-yard setbacks of 5 feet, 15-foot front-yard setbacks, and rear-yard setbacks ranging from 5 to 20 feet. Driveways would be 20 feet in length. All new residences would have a maximum height of 27 feet, 9 inches.

The project includes a variety of architectural styles including Spanish, Craftsman, and Tuscan architectural styles. **Figures 3a** through **3e** show the typical architectural elevations.

The project includes a 0.7-acre park and three open space areas totaling 1 acre (**Figure 2a** and **Figure 2b**). The applicant proposes that park and open space areas be private and thus be maintained through a homeowners association (HOA). Pursuant to Resolution 2008/10 regarding City Council's approval of the residential development allocation for the project, the project would also provide a landscaped connection to the Mokelumne Trail to the north of the project site.

**Project Site:** Although the site was previously cultivated as an orchard, it is currently vacant and includes only sparse trees near Heidorn Ranch Road. Site elevations range from about 50 to 60 feet above sea level, with an approximately one percent gradient that rises gradually to the southwest. **Figures 4a** and **4b** show photographs of existing conditions on the project site.

**Surrounding Land Uses and Setting:** The immediate surroundings include residential uses to the north and west, a church/school to the northeast, and open space and agricultural uses to the south.

To the north, the project is bound by the Mokelumne Coast to Crest Multi-Use Trail (Mokelumne Trail) that connects to a regional network of trails spanning the East County area. The Heritage Baptist Church and Heritage Baptist Academy (church/school) also border the northern boundary of the site. The Lone Tree Plaza retail center is located farther to the north at the intersection of Heidorn Ranch Road and Lone Tree Way.

Medium- to low-density residential developments are located immediately west of the project site and to the north beyond the Mokelumne Trail.

Lands immediately to the south of the project site are designated for planned development in the Sand Creek Focus Area, as defined in the City's General Plan.

The City of Brentwood is located to the east, across Heidorn Ranch Road. Existing uses include rural residential units and lands in agricultural production. Properties along the eastern edge of Heidorn Ranch Road are identified in the Brentwood General Plan as part of Special Plan Area P (SPA P). The General Plan calls for SPA P to be developed as a medium to high intensity mixed use, residential/office/ commercial area. The State Route 4 Bypass is located farther to the east.

The Circulation Element of the City of Brentwood General Plan includes a future extension of Sand Creek Road to connect with Heidorn Ranch Road, south of the project site.

**Landscaping:** Figure 5 depicts a conceptual landscaping plan for the project site.<sup>2</sup> Under both alternatives, the project would result in the planting of approximately 370 trees and associated vegetation (plants and shrubs) along the internal neighborhood streets, park, and open space areas. Trees and other vegetation would vary in form, texture, and color, including the use of California native, drought tolerant, and moderate water usage landscaping. Approximately 19 percent of the landscaping trees and 29 percent of the other vegetation provided as part of the project would consist of California native species. Nearly 75 percent of the trees, including the California native trees, would be drought tolerant, with the remaining 25 percent of trees consisting of moderate water usage trees. With regard to other vegetation, 54 percent of the shrubs, including the California native shrubs, would be drought tolerant and 46 percent would be moderate water usage shrubs and plants.

The proposed 0.7-acre park would include a picnic area, creative play area, and a grand arbor with a solar power energy support system. A total of 4,320 square feet of solar panels would be placed on the roof of the 8-foot tall grand arbor, to serve as an energy source for park and street lighting.

Community wide street lighting, wood fencing, and decorative perimeter masonry walls would be used in common areas within the project site, and decorative prominent columns would be placed in key locations within the community.

**Circulation and Parking:** The project includes a network of four internal private streets. Internal streets would have two 12- to 14-foot traffic lanes, with 8-foot parking shoulders on one side of the street. Ten- to 15-foot sidewalks and vegetated swales would be developed on both sides of these streets.

The project would improve Heidorn Ranch Road along the project frontage. Heidorn Ranch Road would be widened from two to three lanes, including two southbound lanes and one northbound lane.

The project would provide about 354 parking spaces, including on- and off-street parking, representing a ratio of approximately 3.08 parking spaces per residential unit for garage and on-street parking spaces. Each of the 115 units would have a garage with parking for two cars; an additional 124 on-street parking spaces would be provided.

---

<sup>2</sup> The final landscaping plan will reflect the lot layout of either Prewett Ranch Drive Alternative A or Prewett Ranch Drive Alternative B (as shown in Figures 2a and 2b) as a condition of project approval by the City.

### Prewett Ranch Drive Extension

The project includes the extension of Prewett Ranch Drive as a 28-foot-wide roadway within a 38 foot right-of-way. Prewett Ranch Drive would extend westerly from Heidorn Ranch Road to the access road between lots 10 and 11. The extension would be located entirely on the applicant's property and would conform to all City access requirements.

As part of the project, the City is also evaluating two future ultimate buildout scenarios for Prewett Ranch Drive, both of which it believes are viable circulation options. Prewett Ranch Drive Alternative A (**Figure 2a**), is consistent with the Circulation Element of the General Plan, and includes a full connection of Prewett Ranch Drive between Heidorn Ranch Road and Summerfield Drive. In contrast, Prewett Ranch Drive Alternative B (**Figure 2b**) would terminate Prewett Ranch Drive in a bulb intersection at lots 17 and 18, where it would turn to the south and continue to the future extension of Sand Creek Road.

The traffic study for the project evaluated both ultimate build-out scenarios. Therefore, under Prewett Ranch Drive Alternative B, vehicles entering the project site from Prewett Ranch Drive could be traveling only westbound, i.e., from Heidorn Ranch Road. Under Prewett Ranch Drive Alternative A, vehicles entering the project site from Prewett Ranch Drive could be traveling westbound from Heidorn Ranch Road or eastbound, from the existing neighborhood/Summerfield Drive area.

**Required Utilities, Public Service, and Site Improvements:** The project site is located immediately adjacent to urbanized developments in the City. Existing water, sewer, and storm drain systems are present at the terminus of Prewett Ranch Drive and along Heidorn Ranch Road. The project would connect to the existing utilities and construct an internal utility network on the project site. The project also proposes connections to existing natural gas, electricity, and telecommunications lines at these locations.

**The project will establish or participate in a land based financing mechanism to fund police services for the project. The financing mechanism will be in the form of a Community Facilities District (CFD) or other means acceptable to the City and the Developer. The financing mechanism will be established prior to the issuance of building permits for the first unit of the project.**

**Green Building Techniques Included in Project Design:** The project would include a number of green building techniques, including energy efficient design elements. Per the project's Residential Allocation Application, the project would provide 4,300 square feet of solar panels to provide an in-grid system to supplement the common area electrical needs, including streetlights, bollard lights, pathway lights, and irrigation controllers.

The residential units within the project will also incorporate energy-efficient features, such as high-efficiency furnaces and air conditioners, *EnergyStar* light fixtures and appliances, tankless water heaters, insulated hot water lines, insulated exterior door and garages, and mechanically controlled ventilation systems to maximize heating and cooling efficiency. The residential units would also incorporate radiant roof barriers, or high solar reflectance barriers, to reduce solar absorption and to reduce the heat island effect.<sup>3</sup>

In regards to landscaping, the project would also utilize recycled materials for landscaping improvements and would incorporate xeroscaping methods<sup>4</sup> such as the use of drought-tolerant plant cultivars, and water-efficient irrigation systems. Through the incorporation of such green building techniques, the project would exceed Title 24 requirements by approximately 15 percent.

Pursuant to City of Antioch Resolution No. 2008/10 regarding the City Council's approval of the residential development allocation for the project, at the time of the issuance of building permits the project would also be required to meet the minimum point threshold of a green home as defined in the most recent version of the New Home Construction Green Building Guidelines, published by Build It Green.

**Grading:** As the project site is generally flat, project development would require relatively minimal grading to create streets and building pads.

**Construction:** **Figure 6** presents the construction phasing plan. Development of the project site is proposed in two phases: Phase I would develop the area south of Street B, and Phase II would develop the area north of Street B. Each Phase would consist of multiple stages of releases for the development of the single-family homes. The final construction phasing plan will reflect the lot layout of either Prewett Ranch Drive Alternative A or Prewett Ranch Drive Alternative B (as shown in **Figures 2a** and **2b**) as a condition of project approval by the City.

Phase I is anticipated to begin in mid-2010, with site construction occurring over a period of 10 months and the construction release of all the Phase I units in late 2011. Phase II would begin in mid-2011, with site construction occurring over an 8 month period and the construction release of the remainder of the Phase II units in mid-2013.

---

<sup>3</sup> The heat island effect refers to areas of heated air within urban areas caused by structural elements and paving materials that substantially absorb heat from sunlight and emit the stored energy over the course of the day. The effect can create very high differences in temperature between developed and vegetated areas, resulting in increased pressure (wear) on developed surfaces and additional cooling requirements within the buildings.

<sup>4</sup> Xeroscaping refers to landscaping measures to reduce or eliminate the need for supplemental irrigation, with the primary objective of maximizing water conservation. Xeroscaping incorporates native plant species that are adapted to local climate conditions.

**Site Plan Alternatives Evaluation:** For all environmental topic areas evaluated as part of this Initial Study, with the exception of land use and planning, noise, and transportation, it is assumed that environmental impacts under Prewett Ranch Drive Alternative A and Prewett Ranch Drive Alternative B would not differ.

Impacts to *land use and planning* under Prewett Ranch Drive Alternative A and Prewett Ranch Drive Alternative B would not differ, as the type and intensity of land use would remain the same. However, Prewett Ranch Drive Alternative B would not include the extension of Prewett Ranch Drive. Because the General Plan Circulation Element currently envisions the extension of Prewett Ranch Drive between Heidorn Ranch Road and Summerfield Drive, the selection of Prewett Ranch Drive Alternative B may require a General Plan Amendment to allow the necessary revisions to the Circulation Element.

Impacts to *noise* would differ under Prewett Ranch Drive Alternative A and Prewett Ranch Drive Alternative B, as vehicular noise levels on Prewett Ranch Drive would be different depending on the form of the extension. **Section XI, Noise**, includes a discussion of the impacts under each alternative.

Impacts to *transportation and circulation* would differ under Prewett Ranch Drive Alternative A and Prewett Ranch Drive Alternative B, as vehicular access on Prewett Ranch Drive would differ for each alternative. **Section XV, Transportation and Circulation**, includes a discussion of traffic impacts under each alternative.

**Project Site History:** The project site was previously approved for subdivision of 83 single-family units in August 1990, per City Resolution No. 90/230. This Resolution approved a vesting tentative map for the subdivision. Per the City's Subdivision Code, this approval was for a period of two years. The previous applicant requested and received a one-year extension of the approval under City Resolution No. 90/178. However, no Final Map was ever submitted to the City, and the tentative map approval thus expired.

On January 22, 2008, the Antioch City Council approved a residential development allocation for 115 units.

**Requested Actions:** **Table 1** lists the discretionary and ministerial approvals requested for the proposed project.

**Table 1. Project Approvals**

<b>Agency/Provider</b>	<b>Permit/Approval</b>
City of Antioch	Certification of Initial Study/Mitigated Negative Declaration
	Design Review
	Approvals of Tentative and Final Maps
	Grading Permit
	Building Permit
	General Plan Amendment (under Prewett Ranch Drive Alternative B only)
California Regional Water Quality Control Board	Section 401 Certificate
	National Pollutant Discharge Elimination Permit
	Storm Water Pollution Prevention Plan, Section 401 Certificate
United States Army Corps of Engineers	Jurisdictional Delineation

Source: CirclePoint, 2009.

## Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by the project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages. Mitigation measures have been provided for each potential significant impact, reducing all to a less-than-significant level.

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Aesthetics                    | <input type="checkbox"/> Agricultural Resources               |
| <input checked="" type="checkbox"/> Air Quality                   | <input checked="" type="checkbox"/> Biological Resources      |
| <input checked="" type="checkbox"/> Cultural Resources            | <input checked="" type="checkbox"/> Geology & Soils           |
| <input checked="" type="checkbox"/> Hazards & Hazardous Materials | <input checked="" type="checkbox"/> Hydrology & Water Quality |
| <input type="checkbox"/> Land Use & Planning                      | <input type="checkbox"/> Mineral Resources                    |
| <input checked="" type="checkbox"/> Noise                         | <input type="checkbox"/> Population & Housing                 |
| <input checked="" type="checkbox"/> Public Services               | <input type="checkbox"/> Recreation                           |
| <input checked="" type="checkbox"/> Transportation & Circulation  | <input type="checkbox"/> Utilities & Service Systems          |
| <input type="checkbox"/> Mandatory Findings of Significance       |   |

## Compliance with New CEQA Guidelines

The Office of Planning and Research (OPR) adopted CEQA Guidelines Amendments in December 2009, which incorporate proposed text changes related to greenhouse gas emissions, forest resources, and transportation and circulation impacts. These CEQA Guidelines Amendments will formally take effect on March 18, 2010.

Specifically, the CEQA Guidelines Amendments include proposed text changes to Appendix G (Environmental Checklist) to require an analysis of greenhouse gas emissions. These proposed text changes relating to greenhouse gas emissions were added pursuant to Senate Bill 97, passed in 2008, which directed the OPR to prepare, develop, and transmit to the Resources Agency, guidelines for the feasible mitigation of GHG emissions or their effects.

The CEQA Guidelines Amendments also include changes to Appendix G that require a discussion of forest resources and incorporate modifications to the significance criteria for transportation and circulation impacts.

As this Draft Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared prior to the formalization of the CEQA Guidelines Amendments on March 18, 2010, this Draft IS/MND utilizes the environmental checklist from Appendix G of the CEQA Guidelines as amended January 1, 2010. While this Draft IS/MND is not legally required to address the CEQA Guidelines Amendments, **Appendix A** of this Draft IS/MND includes an analysis in compliance with these new guidelines and changes to Appendix G. **Appendix A** includes the new checklist questions for Agricultural and Forestry Resources and Transportation and Circulation, as well as a quantified evaluation of greenhouse gas emissions per the new Greenhouse Gas Emissions environmental checklist topic.

**Determination**

On the basis of this initial evaluation:

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

I find that the proposed project COULD have a significant effect on the environment, but mitigations identified in this Initial Study will reduce these impacts to a less-than-significant level, and a MITIGATED NEGATIVE DECLARATION will be prepared.

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

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

I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards and (b) have been avoided or mitigates pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project.



Tina Wehmeister  
Community Development Director

3/11/10

Date

*This page intentionally left blank.*

---



---

## ENVIRONMENTAL IMPACT CHECKLIST

### I. Aesthetics

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including but not limited to: trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### a) Have a substantial adverse effect on a scenic vista?

**Less-than-Significant Impact.** The project site is currently an open, relatively flat, unimproved field, with no on-site buildings or vegetation interrupting views in any direction. Views of Mt. Diablo and the Deer Valley ridgelines to the southwest of the project site can be seen from the project site, as well as from areas immediately adjacent to the project site, including Heidorn Ranch Road and the Mokelumne Trail (See **Figures 4a** and **4b**). Views of Mt. Diablo and the Deer Valley ridgelines are intermittently obstructed by existing residential development.

The City’s General Plan identifies views of Mt. Diablo and local ridgelines as important scenic resources. General Plan Policy 5.4.2c within the General Plan calls for the maintenance of “...view corridors from public spaces to natural ridgelines and landmarks, such as Mount Diablo.” However, this same policy expresses a “[recognition] that new development will inevitably result in some loss of existing views” and prohibits “the siting of structures or landscaping that would completely block views from adjacent properties.”

The project would be consistent with the pattern of development along other portions of the Mokelumne Trail in the City, and would allow for intermittent views of the ridgelines through the spacing of the two-story homes, the angle of the lots, street corridors, and the parks and open spaces. Additionally, **Mitigation Measure XI-1**, as discussed in **Section XI, Noise**, would introduce a permanent six-foot barrier along the project's frontage on Heidorn Ranch Road. While this noise barrier would have the potential to affect views of Mt. Diablo and the ridgelines to the east from Heidorn Ranch Road, the noise barrier would not extend over the height of the proposed residential units. As such, intermittent viewing corridors would continue to be available through the project site from the surrounding areas. Thus, the project would not have a significant adverse impact to scenic vistas. No mitigation is required.

**b) Substantially damage scenic resources, including but not limited to: trees, rock outcroppings, and historic buildings within a state scenic highway?**

**No Impact.** According to the California Department of Transportation (Caltrans), there is no state or county designated scenic highway in the City nor in eastern Contra Costa County. Moreover, there are no rock outcroppings or historic buildings in the vicinity of the project site. Therefore, there would be no impact to scenic resources within a state scenic highway. No mitigation is required.

**c) Substantially degrade the existing visual character or quality of the site and its surroundings?**

**Less-than-Significant Impact.** While the semi-rural character of the project site would be shifted to a suburban visual environment, the project is consistent with the use and intensity designated by the Antioch General Plan for this site. The project would be located adjacent to existing suburban residential neighborhoods to the north and west, and the proposed housing units within the project would feature architectural design styles and building heights similar to those in the adjacent, developed neighborhoods.<sup>5</sup> In addition, the Brentwood General Plan calls for the lands east of Heidorn Ranch Road to be developed with medium to high-density mixed residential/commercial/office uses.

Proposed landscaping would incorporate native trees and shrubbery that would soften the visual character of the new development and integrate well with the existing visual character established by the adjacent neighborhoods. As such, the project would not significantly degrade the existing visual character or aesthetic quality of the project area and its surroundings, representing a less-than-significant impact. No mitigation is required.

---

<sup>5</sup> Isaacson, Wood and Associates. (2008). *Tierra Villas Preliminary Landscape Plan*.

**d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?**

**Potentially Significant Unless Mitigation Incorporated.** Existing lighting in the vicinity of the project area includes natural sources, lighting associated with the adjacent residential and church developments, and vehicle traffic along Heidorn Ranch Road. Development of the project area would introduce new sources of both daytime glare and nighttime lighting to the project area and surrounding areas. New sources of glare would include the glare produced by the natural sunlight reflecting off of the exterior walls and windows of the residential units. New sources of nighttime lighting would include street lamps and exterior lighting on the residential units.

Within the project's internal private streets, proposed lighting would consist of low mounted bollard lights and downcasting decorative street lights that would result in minimal lateral illumination spreading. Landscaping provided along the project perimeters would provide a buffer for these new sources of nighttime lighting.

With regard to daytime glare, the architectural styles proposed for the project would incorporate neutral tones, such as cream, terra cotta, and beige, that would not result in substantial daytime glare issues. The windows on the exterior of the residential units would also be limited and spread out, reducing the potential for large glazed areas within the project site. These additional sources of new nighttime lighting and daytime glare would, however, blend in with the surrounding residential developments. Implementation of **Mitigation Measure I-1** would ensure that light created by the project would be minimized, comparable to that of surrounding residential neighborhood, and would reduce the impact of additional nighttime lighting to a less-than-significant level.

**Mitigation Measure I-1:** Prior to the issuance of building permits, the City's Building Division shall verify as part of the plan check process that project plans call for reflective glazing treatments on the windows of the residential units to minimize daylight glare and that outdoor lighting is designed to minimize glare and spillover to surrounding properties.

**Significance after Mitigation:** Implementation of **Mitigation Measure I-1** would reduce light and glare impacts to a less-than-significant level.

## II. Agricultural Resources

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or with a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which due to their location or nature, could individually or cumulatively result in loss of Farmland to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use?**

**and**

**c) Involve other changes in the existing environment which due to their location or nature, could individually or cumulatively result in loss of Farmland to non-agricultural use?**

**Less-than-Significant Impact.** The project site is currently a disked and vacant site and does not contain any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. According to the California Department of Conservation's 2008 map for Contra Costa County (released June 24, 2009), the site contains soils designated as Farmland of Local Importance, which is a different classification than Prime, Unique or Statewide importance.

As the project would not result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use, project impacts to farmland would be less than significant.<sup>6</sup>

<sup>6</sup> California Department of Conservation. (June 2009). Contra Costa County Important Farmland 2008.

**b) Conflict with zoning for agricultural use, or with a Williamson Act contract?**

**No Impact.** The project site is not zoned for agricultural use, nor is it under a Williamson contract. The project would not therefore conflict with existing zoning for agricultural use, or with a Williamson Act contract. No mitigation is required.

---

<<ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2008/con08.pdf>>.

### III. Air Quality

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Conflict with or obstruct implementation of the applicable Air Quality Attainment Plan or Congestion Management Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### a) Conflict with or obstruct implementation of the applicable Air Quality Attainment Plan or Congestion Management Plan?

**Less-than-Significant Impact.** The project site is located within the San Francisco Air Basin (Basin), which is regulated by the Bay Area Air Quality Management District (BAAQMD). Pursuant to the federal Clean Air Act, the BAAQMD is required to reduce emissions of criteria pollutants for which the Basin is in non-attainment. The Basin is designated as non-attainment for State and Federal standards for ozone, and State standards for PM<sub>10</sub> (particulate matter less than ten microns in size) and PM<sub>2.5</sub>.

The Bay Area 2005 Ozone Strategy is the current ozone air quality plan required under the federal Clean Air Act (CAA). The 2005 Ozone Strategy explains how the Basin will achieve compliance with the state one-hour air quality standard for ozone as expeditiously as practicable. The 2005 Ozone Strategy also explains how the region will reduce transport of ozone and ozone precursors to neighboring air basins.

The state-mandated regional air quality plan is the Bay Area 2000 Clean Air Plan. Both the Ozone Strategy and the 2000 Clean Air Plan contain mobile source controls, stationary source controls, and transportation control measures to be implemented in the region to attain the state and federal ozone standards within the Bay Area Air Basin.

A project would be judged to conflict with or obstruct implementation of the regional air quality plan if it would be inconsistent with the regional growth assumptions, in terms of population, employment, or regional growth in Vehicle Miles Traveled (VMT). The emission reduction strategies in the 2000 Bay Area Clean Air Plan and the 2005 Bay Area Ozone Strategy were developed, in part, on regional population, housing, and employment projections prepared by the Association of Bay Area Governments (ABAG).

The projections for the City were based on the assumptions in the City's General Plan EIR. As the build out of the project site would be consistent with what is assumed in the City's General Plan (medium-density residential with a maximum of 6 dwelling units per acre), the resulting growth would be considered consistent with the projections used to develop the most 2000 Clean Air Plan. That is, development of the project would not interfere with population and VMT projections used to develop the 2000 Clean Air Plan planning projections.

The Bay Area 2005 Ozone Strategy includes 20 transportation control measures (TCMs), seven of which require participation at the local level. The General Plan includes policies that effectively implement five of the seven required TCMs (TCM 1, Support Voluntary Employer-Based Trip Reduction Program; TCM 9, Improve Bicycle Access and Facilities; TCM 12, Arterial Management Measures; TCM 17, Conduct Demolition Projects; and TCM 19, Improve Pedestrian Access and Facilities). The City's Engineering Division reviews the TCMs and develops strategies for compliance. The project would be required to comply with all adopted City programs designed to ensure compliance with the 2005 Ozone Strategy. Therefore, the project would have a less-than-significant impact in regards to the implementation of an applicable Air Quality Attainment Plan. No mitigation is required.

**b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?**

**Less-than-Significant Impact.** Vehicles entering and exiting the project site would generate a variety of pollutants that are regulated at the State and Federal level, including carbon monoxide, ozone, and particulate matter. Under the Federal Clean Air Act, the Bay Area is in non-attainment

for ozone and particulate matter (Federal level). Under the California Clean Air Act, the Bay Area is also considered to be in non-attainment for PM<sub>10</sub> (also known as respirable particulates) and PM<sub>2.5</sub> (also known as fine particulate matter) (State level).

In general, long-term air quality emissions related to the project could result from the operation of vehicles by residents, and stationary sources (i.e. heating and cooling devices and generators). Vehicle emissions such as reactive organic gases (ROGs) and nitrous oxides (NOx) typically develop into ozone in the atmosphere.

For operational emissions, including mobile and stationary source emissions, according to the BAAQMD CEQA Guidelines a residential project is required to prepare a quantitative evaluation of emissions if it is anticipated to generate more than 2,000 vehicles trips per day. At this level, emissions could be considered significant and mitigation measures could be required. The project would generate about 1,101 vehicles trips per day, with about 86 and 116 trips during the morning and evening peak hours, respectively.<sup>7</sup> The 1,101 vehicle trips that would be generated are below the BAAQMD's threshold and therefore, ongoing project operations would not be considered to have the potential to generate significant quantities of air pollutants. Project impacts would be less than significant; no mitigation is required.

**c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?**

**Less-than-Significant Impact.** According to the BAAQMD CEQA Guidelines, if a project requires a General Plan Amendment (GPA) or would generate more VMT than anticipated under a previous land use designation, there would be a significant cumulative impact. The proposed project does not require a GPA. If Prewett Ranch Drive Alternative B is selected, a General Plan Amendment may be required to amend the Circulation Element map, but would not alter the land use designation of the project site and would not increase the VMT anticipated by the current designation. The project site is designated for medium-density residential in the City's General Plan, and regional air quality modeling has therefore already factored in the potential addition of vehicle trips associated with the proposed development of this site. Therefore, the project would not result in a cumulatively considerable net increase of any criteria pollutant. No mitigation is required.

**d) Expose sensitive receptors to substantial pollutant concentrations?**

**Potentially Significant Unless Mitigation Incorporated.** Construction and grading activities produce combustion emissions from various sources, including heavy equipment engines, asphalt paving, and motor vehicles used by the construction workers. On-site construction activities would vary depending on the level of construction activity.

---

<sup>7</sup> Omni-Means, Ltd. (2009). *Tierra Villas Residential Subdivision Traffic Impact Analysis*.

As the project would require site preparation and grading to develop the residential building pads, project construction could expose nearby sensitive receptors (primarily the residents in the adjacent residential neighborhoods and students at Heritage Baptist Academy) to air pollutants such as particulate matter (dust). Dust emissions would be created during site preparation and, to a lesser extent, during building and road construction. These activities would increase dust-fall and would locally elevate levels of particulates (especially PM<sub>10</sub>) downwind of construction activity.

Construction control measures identified in **Mitigation Measure III-1** below would minimize construction related emissions to a less-than-significant level. **Mitigation Measure III-2** would impose timing controls on grading to reduce dust impacts.

**Mitigation Measure III-1:** Prior to the issuance of buildings or grading permits, the City shall ensure that project plans incorporate the following measures to reduce construction period air quality impacts:

- On-road and off-road vehicle tire pressures shall be maintained to manufacturer specifications. Tires shall be checked and reinflated at regular intervals;
- All contractors shall use equipment that meets California Air Resources Board's most recent certification standard for off-road heavy duty diesel engines;
- Lower-carbon fuels such as biodiesel blends shall be used where feasible;
- Engine retrofits to remove emissions such as diesel particulate matter filters with diesel oxidation catalysts shall be used where feasible;
- Construction equipment engines shall be maintained to manufacturer's specifications;
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways;
- On-site idling of construction equipment shall be minimized as much as feasible (no more than 5 minutes);
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard;
- Limit traffic speeds on unpaved roads to 15 mph;
- Water all active construction areas at least twice daily and more often during windy periods. Active areas adjacent to existing sensitive land uses shall be kept damp at all times, or shall be treated with non-toxic stabilizers to control dust;
- 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;

- Locally made materials for construction shall be used to the extent feasible; and
- Consistent with Antioch Municipal Code Section 6-3.203, construction debris shall be recycled to the extent the City deems feasible.

**Mitigation Measure III-2:** Prior to the issuance of a grading permit, the project applicant shall provide the City a detailed grading schedule that demonstrates minimization of grading within 100 feet of the church/school property during the months when school is in session (September – June).

**Significance after Mitigation:** **Mitigation Measure III-1** includes all feasible measures for construction emissions identified by the BAAQMD that are relevant to the project. **Mitigation Measure III-2** would further minimize impacts to adjacent nearby sensitive receptors. Implementation of all of the measures described above would reduce construction impacts of the project to a less-than-significant level.

**e) Create objectionable odors affecting a substantial number of people?**

**Less-than-Significant Impact.** During construction and grading, diesel powered vehicles and equipment used on the site could create localized odors. These odors would be temporary and would dissipate in prevailing westerly winds. Construction period odor impacts would therefore be considered less than significant. No mitigation is required.

As the project would contain only residential uses, as opposed to industrial uses, the project would not create any new sources of objectionable odors during project operation. The proposed residential uses are not expected to produce any offensive odors that would result in frequent odor complaints. In sum, the project's potential to generate odor impacts during the operational phase of the project would be less than significant. No mitigation is required.

#### IV. Biological Resources

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status species in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse impact 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with an established resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, Regional, or state habitat Conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Information in this section was drawn from a Biological Evaluation Report prepared by Pacific Biology in July 2009. The report is included as **Appendix B**.

**a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status species in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**

**Potentially Significant Unless Mitigation Incorporated.** The latest version of the California Natural Diversity Data Base (CNDDDB) 2009) was reviewed for the project site and surrounding five-mile area to document occurrence of special-status species in the project area and to determine their location relative to the project site. Reconnaissance-level surveys were also performed on the project site in February 2009. As the project site was used as an orchard since at least 2003 and continues to be regularly tilled, vegetation between tilling is limited to annual, non-native grass species and ruderal plant species. Such vegetation is sparse and large portions of the site contain bare, exposed soil. Thus, the project would not result in any impacts to special-status plant species.

Based on the CNDDDB review, several special-status wildlife species have been documented on or within five miles of the project site including California red-legged frog, California tiger salamander, vernal pool fairy shrimp, vernal pool tadpole shrimp, San Joaquin kit fox, Swainson's hawk, burrowing owl, American badger, white-tailed kite, loggerhead shrike, tricolored blackbird, molestan blister beetle, and silvery legless lizard.

A drainage ditch is located on the project site and generally follows the southern boundary of the church/school property. Several seasonal pools, assumed to be connected to the drainage ditch, formed on the project site after a period of heavy rain in February 2009. However, due to the tilling of the project site and the dry weather, no visible signs of the seasonal pools were observed on the project site in June 2009 and it is assumed that the presence of the seasonal pools coincides with storm events. Nonetheless, the drainage ditch and seasonal pools could potentially serve as habitat to some of the aforementioned species.

The biological analysis concluded that the project would have *less-than-significant* impacts to the following species:

- California tiger salamander
- San Joaquin kit fox
- Tricolored blackbird
- American badger
- Molestan blister beetle
- Silvery legless lizard

The biological analysis also concluded that the project would have *potentially significant* impacts to these species:

- California red-legged frog
- Vernal pool fairy and tadpole shrimps
- Swainson's hawk
- Burrowing owl
- White-tailed kite, and loggerhead shrike

Each of these species are discussed in greater detail below.

*Species For Which The Project Would Result In Less-than-Significant Impacts*

*California Tiger Salamander*

California tiger salamanders have been documented approximately 1.3 miles to the east and south of the project site. As the seasonal pools on the project site do not hold water for sufficient duration to facilitate California tiger salamander breeding and that the project site is regularly tilled, the project site does not contain suitable breeding or upland habitat for this species. Thus, the project is not expected to result in impacts to the California tiger salamander.

*San Joaquin Kit Fox*

Based on the CNDDDB, the closest documented occurrence of San Joaquin kit fox is located approximately 3 miles to the west of the project site. San Joaquin kit fox is not expected to occur on the project site as no kit fox or other fox sign has been observed on the site; the species has not been documented in the project area for approximately 10 years; the project site is not located within an expected movement corridor; the project site is regularly tilled; and domestic animals (i.e. dogs) from the adjacent residential developments would deter the presence of such species. As such, it is not anticipated that project development would impact San Joaquin kit fox.

*Tricolored Blackbird*

Suitable nesting habitat for the tricolored blackbird is not present or bordering the project site, due to the absence of dense stands of cattails or tules in freshwater, emergent wetlands. Thus, the project would have a less-than-significant impact to the tricolored blackbird as construction of the project site would not disturb any nesting habitat.

*American Badger*

According to the CNDDDB, the closest documented occurrence of the American badger is from approximately 0.6 miles south of the project site. During surveys conducted to evaluate the site for nesting burrowing owl surveys, project biologists concluded that no badger dens or signs of the

species were present on the project site. The regular tilling of the project site would further prevent species from colonizing on the project site. Thus, the project would have a less-than-significant impact to the American badger as construction of the project site would not disturb any habitat for the species.

#### *Silvery Legless Lizard and Molestan Blister Beetle*

The silvery legless lizard is found in suitable habitats within the City, primarily in sandy or loose soils, valley-foothill grasslands, chaparral, and coastal scrub habitats. The molestan blister beetle is found in grassland habitats. The regular tilling of the project site prevented these species from being present on the project site. Therefore, no project impacts related to the silvery legless lizard nor the molestan blister beetle would occur.

#### *Species For Which The Project Would Result In Potentially Significant Impacts*

##### *California Red-Legged Frog*

California red-legged frogs have been documented approximately 1.4 miles southwest of the project site. The project site, however, does not provide suitable breeding habitat, as the project site is limited to relatively shallow and ephemeral seasonal pools; is regularly tilled; is more than 0.5 miles from the closest suitable breeding habitat (Sand Creek); only limited portions of Sand Creek are perennial; and the project site is not located between aquatic habitats. While it is possible that California red-legged frogs could disperse onto the project site temporarily within the seasonal pools or fields, the potential for occurrence on the project site is low. However, in the low-likelihood event that California red-legged frogs are present during project construction activities, individual frogs could be harmed, representing a significant impact. **Mitigation Measure IV-1** would reduce impacts to California red-legged frog during project construction.

**Mitigation Measure IV-1:** Immediately preceding initial ground disturbance activities that occur in the wet season (November-April), the City shall require a preconstruction clearance survey conducted by a qualified biologist for California red-legged frogs. The survey shall be conducted to determine whether individual California red-legged frogs are present within the disturbance boundary. The City shall not issue a grading permit until results from the survey have been submitted, reviewed, and approved by the Community Development Director. Should a California red-legged frog be observed during the clearance survey, all construction activities shall be immediately halted and the United States Fish and Wildlife Service (USFWS) shall be immediately contacted. Under no circumstances shall a California red-legged frog be collected or relocated unless USFWS personnel or their agents implement the measure. Construction-related activities may resume once the frog has naturally left the project site or has been relocated by a permitted biologist (authorized by the USFWS).

**Significance after Mitigation:** Implementation of preconstruction clearance surveys, as required by **Mitigation Measure IV-1** would reduce potentially significant impacts to California red-legged frog to a less-than-significant level.

*Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp*

Based on the CNDDDB, the closest documented occurrence of vernal pool fairy shrimp is approximately 2 miles southwest of the project site. While ephemeral and regularly tilled, the seasonal pools in the southern portion of the site provide potentially suitable habitat for vernal pool shrimp and vernal pool tadpole shrimp on the project site. As the approximately ¼-acre of seasonal pools would be removed for project development, project construction could result in the loss of vernal pool fairy and tadpole shrimp and their associated habitat, representing a significant impact. **Mitigation Measure IV-2a** and **IV-2b** would reduce impacts to the vernal pool fairy and tadpole shrimp.

**Mitigation Measure IV-2a:** Prior to the commencement of construction on the project site, the City shall require that a qualified biologist conduct protocol surveys for vernal pool fairy shrimp and tadpole shrimp. These surveys shall be conducted according to the accepted USFWS survey protocol, which includes either two wet season surveys (with eight individual surveys per wet season), or one wet season survey followed by a dry season survey. If no vernal pool fairy shrimp or tadpole shrimp are observed during the surveys, then no further action would be required. Also, if it is determined that the pools on the project site do not provide suitable habitat (as they do not hold water for sufficient duration), and USFWS concurs with this finding, then no additional actions would be required. If federally-listed fairy shrimp are detected during the surveys, then the compensation outlined below in **Mitigation Measure IV-2b** shall be implemented.

**Mitigation Measure IV-2b:** If the survey in **Mitigation Measure IV-2a** above concludes that fairy shrimp and or tadpole shrimp are present on the project site, prior to the issuance of grading permits, the City shall require that loss of vernal pool fairy and tadpole shrimp habitat shall be compensated for by the project applicant by purchasing credits at a 3:1 ratio at an USFWS-approved mitigation bank. The amount of project-related habitat loss may be determined as follows:

- The ¼-acre of seasonal pool habitat mapped on the site may be assumed to be occupied habitat;
- The area of habitat found to be occupied during the implementation of **Mitigation Measure IV-2a** (see above) shall be compensated for; or
- The seasonal pools may be monitored during the winter to determine the acreage that provides suitable fairy/tadpole shrimp habitat.

The availability of credits at an USFWS-approved mitigation bank shall be demonstrated prior to the issuance of a grading permit, or other equivalent compensation must be approved by the USFWS. Consultation with the USFWS for the take of federally-listed shrimp species would also be expected to be required.

**Significance after Mitigation:** Implementation of protocol surveys and, if necessary, compensation for the loss of habitat, as identified in **Mitigation Measures IV-2a** and **2b**, would reduce potentially significant impacts to vernal pool fairy and tadpole shrimp to a less-than-significant level.

#### *Swainson's Hawk*

Swainson's hawks are known to nest in the project vicinity, with the closest documented nesting occurrence located approximately 0.7 miles south of the project site along Sand Creek. While the project site does not provide suitable nesting habitat due to the absence of adequately sized trees, the species could nest within 500 feet of the project site in the large eucalyptus trees along Heidorn Ranch Road to the east.

Additionally, as the project site contains fallow and tilled soils considered suitable foraging habitat for the species and is within 1-mile of an active nest, Swainson's hawks may forage on the project site. Although the project would not result in the direct loss of an active Swainson's hawk nest due to the absence of nesting habitat on the project site, development of the project site would result in the loss of an available 20.3 acres of foraging habitat. Further, if any active nest is located within 500 feet of the project site, project construction noise levels could result in the abandonment of the nest. Thus, the development of the project site would have a significant impact related to Swainson's hawk. **Mitigation Measures IV-3a** and **IV-3b** would, however, reduce the potentially significant impacts to Swainson's hawk.

**Mitigation Measure IV-3a:** If construction would commence anytime during the nesting/breeding season of native bird species potentially nesting on or near the site (typically February through August in the project region), the City shall require that a pre-construction survey of the project vicinity for nesting birds shall be conducted. This survey shall be conducted by a qualified biologist (experienced with the nesting behavior of bird species of the region), contracted by the project applicant, within 14 days of the commencement of construction activities that would occur during the nesting/breeding season. The intent of the survey shall be to determine if active nests of special status bird species or other species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are present within the construction zone or within 500 feet of the construction zone. **The pre-construction survey shall be conducted according to the most current Burrowing Owl Survey Protocol and Mitigation Guidelines established the California Burrowing Owl Consortium.**

The survey area shall include all trees and shrubs, as well as fallow fields (which could be utilized by burrowing owls) in the construction zone and a surrounding 500 foot area (where access is possible). The surveys shall be timed such that the last survey is concluded no more than two weeks prior to initiation of construction or tree removal. If the initiation of ground disturbance activities is delayed following a survey, then an additional pre-construction survey shall be conducted such that no more than two weeks will have elapsed between the final survey and the commencement of ground disturbance activities.

If the survey finds that active nests are located in construction areas or are within 500 feet of construction and would be subject to prolonged construction-related noise, a no-disturbance buffer zone shall be created around active nests during the breeding season or until a qualified biologist determines that all young have fledged. If a buffer zone is needed, the biologist shall size the buffer zone(s) in consultation with the California Department of Fish and Game (CDFG), taking into account the following factors<sup>8</sup>:

- Noise and human disturbance levels at the construction site at the time of the survey and the noise and disturbance expected during the construction activity;
- Distance and amount of vegetation or other screening between the construction site and the nest; and
- Sensitivity of individual nesting species and behaviors of the nesting birds.

Limits of construction to avoid an active nest shall be established in the field with flagging, fencing, or another appropriate barrier, and construction personnel shall be instructed on the sensitivity of nest areas. The biologist shall serve as a construction monitor during those periods when construction activities would occur near active nest areas of special status bird species to ensure that no impacts on these nests occur.

**Mitigation Measure IV-3b:** If the survey conducted as part of Mitigation Measure IV-3a determines that Swainson's hawk are present in proximity to the project site such that a significant effect could occur, the City shall require that the applicant mitigate for the loss of suitable Swainson's hawk foraging habitat by implementing one of the below measures. The first and second bullet points are generally recommended by the CDFG (CDFG 1994), while the third could benefit the species given the effort to acquire land in the project region as part of the East Contra Costa County Habitat Conservation Plan (ECCCCHCP):

---

<sup>8</sup> "Project grading and construction would take place up to the edge of all surrounding property lines. Therefore, if an active nest is found in a tree directly adjacent to the site, a buffer of 500 feet may be appropriate depending on the sensitivity to noise-related disturbances of the species present. For example, the CDFG generally requires a 500-foot buffer from an active Swainson's hawk nest given the rarity of nest sites and the sensitivity of the species. However, a smaller buffer could be deemed appropriate by the CDFG if other trees or human activity already occur in the intervening space, as the nesting raptor may already be habituated to human activity and sound disturbance. A smaller buffer would likely also be appropriate for nests of common bird species that are more habituated to human disturbance and are less sensitive to noise related disturbances while nesting. "

- One acre of suitable foraging habitat shall be protected for each acre of suitable foraging habitat developed. At least 10% of the land requirements shall be met by fee title acquisition or a conservation easement allowing the active management of the habitat, with the remaining 90% of the protected land protected by a conservation easement (subject to CDFG approval); or
- One-half acre of suitable foraging habitat shall be protected for each acre of suitable foraging habitat developed. All of the land requirements shall be met by fee title acquisition or a conservation easement (subject to CDFG approval); or
- A financial contribution shall be made to a CDFG-approved entity (such as the ECCCHCP) to be used towards the protection of Swainson's hawk foraging habitat. The amount of the contribution will be determined by the CDFG based on the acreage and condition of foraging habitat to be developed by the proposed project.

**Significance after Mitigation:** Implementation of the preconstruction surveys and, if necessary, compensation for the loss of suitable foraging habitat, as identified in **Mitigation Measures IV-3a** and **3b**, would reduce potentially significant impacts to Swainson's hawk to a less-than-significant level.

#### *Burrowing Owl*

Burrowing owls nest and shelter in ground squirrel and other suitable small mammal burrows or artificial structures. Low growing and sparse vegetation also provides suitable foraging habitat for the species. According to the CNDDDB, numerous occurrences of burrowing owl have been documented from within 1 mile of the project site. Given the presence of suitable habitat and nearby known occurrences, nesting burrowing owl surveys were conducted on the project site in June 2009 (during the nesting season) to determine if burrowing owls nest on the project site.<sup>9</sup> No owls or sign of owl (i.e., molted feathers, cast pellets, prey remains, eggshell fragments, or excrement) were observed during the surveys. As no signs of burrowing owls were documented, in combination with the tilling cycle of the project site, burrowing owls are not expected to nest on the project site.

However, there is potential that non-breeding owls could temporarily occur on the project site during winter migration or dispersal. Should non-breeding burrowing owls be present during construction activities, development of the project site would have a significant impact to burrowing owls. Implementation of **Mitigation Measure IV-4** would reduce such significant impacts.

---

<sup>9</sup> The nesting burrowing owl surveys were performed according to the requirements of the Burrowing Owl Survey Protocol and Mitigation Guidelines recommended by The California Burrowing Owl Consortium (April 1993) and adopted by the California Department of Fish and Game (CDFG).

**Mitigation Measure IV-4:** Should the project applicant propose to commence grading or earthmoving activities on the project site during the non-nesting season of the burrowing owl (typically September through January), the City shall require that the project applicant retain a qualified biologist to conduct winter burrowing owl surveys on the project site. The survey shall be conducted no more than 14 days prior to commencement of construction activities.

If burrowing owls are observed using burrows during the non-nesting season (typically September through January, or after young have fledged following the conclusion of the breeding season), owls shall be excluded from all active burrows through the use of exclusion devices placed in occupied burrows in accordance with CDFG protocols (CDFG 1995). Specifically, exclusion devices, utilizing one-way doors, shall be installed in the entrance of all active burrows. The devices shall be left in the burrows for at least 48 hours to ensure that all owls have been excluded from the burrows. Each of the burrows shall then be excavated by hand and refilled to prevent reoccupation. Exclusion shall continue until the owls have been successfully excluded from the site, as determined by a qualified biologist. The implementation of **Mitigation Measure IV-3a**, above, would ensure that any owls potentially occurring on the project site during future nesting seasons would not be harmed.

**Significance after Mitigation:** Implementation of the preconstruction and winter burrowing owl surveys, as identified in **Mitigation Measure IV-3a** and **Mitigation Measure IV-4**, would reduce potentially significant impacts to burrowing owl to a less-than-significant level.

#### *White-Tailed Kite*

White-tailed kite typically nest in trees surrounded by open foraging habitat. As the project site would not provide suitable nesting habitat due to the absence of trees, the project would not result in the direct loss of an active white-tailed kite nest. However, should an active nest be present within 500-feet of the project site (i.e., within the large eucalyptus trees on Heidorn Ranch Road), construction-related activities and noise levels could result in the abandonment of the nest, representing a significant impact. However, implementation of **Mitigation Measure IV-3a** would reduce impacts to the white-tailed kite to a less-than-significant level.

#### *Loggerhead Shrike*

The project site provides low quality, but potential nesting habitat, for the loggerhead shrike, with potential nesting habitat being limited to the several small shrubby trees. Should the species nest on the project site, construction activities could result in the direct loss or abandonment of an active loggerhead shrike nest, representing a significant impact. However, implementation of **Mitigation Measure IV-3a** would reduce impacts to the loggerhead shrike to a less-than-significant level.

**b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**

**No Impact.** The project site does not contain any riparian or sensitive plant communities. The project site is regularly tilled and vegetation is limited to non-native, annual grasses and ruderal plant species. Therefore, the project would have no impact in regards to riparian or sensitive plant communities. No mitigation is required.

**c) Have a substantial adverse impact 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?**

**Potentially Significant Unless Mitigation Incorporated.** A drainage ditch is located on the project site near the southern boundary of the adjacent church on Heidorn Ranch Road. The drainage ditch is an earthen channel approximately 2 to 3 feet wide and 2 feet deep. Additionally, several pools of standing water formed on the project site during and following periods of heavy rain in February 2009. The pools occur within a somewhat linear (north-south) area in the southern portion of the project site. Due to the tilling of the project site, no visible sign of the pools was present during a June 2009 site survey (nesting burrowing owl survey).

It is likely that the drainage ditch, which terminates at the northern end of the pools, is the primary water source of the pools. The drainage ditch appears to be fed by roadside runoff. The drainage ditch is also not a natural feature and appears to have been excavated in upland habitat. As vegetation within the pools was sparse and did not differ from the surrounding tilled fields, it is assumed that the pools do not hold water for long enough periods to develop wetland-associated vegetation and that the presence of standing water may closely coincide with seasonal storm events. While the drainage ditch and seasonal pools do not have an obvious hydrologic connection to a Waters of the U.S., the United States Army Corps of Engineers (ACOE) is the authority to determine if a wetland or drainage is under their jurisdiction. Thus, there is potential that the seasonal pools and drainage ditch may be considered to be jurisdictional wetlands by the ACOE. The removal of the ditch and pools as part of project construction would therefore result in a potentially significant impact if determined by the ACOE to be jurisdictional. Implementation of **Mitigation Measure IV-5** would reduce potentially significant impacts related to jurisdictional wetlands on the project site.

**Mitigation Measure IV-5:** Prior to the issuance of grading permits, the City shall require the preparation of a jurisdictional delineation by a qualified specialist contracted by the project applicant. The City shall require that the jurisdictional delineation be conducted during the wet season (November to March) and that the results shall be submitted to the ACOE. If the ACOE determines that the seasonal pools and drainage ditch are not jurisdictional, no future actions would

be required. If the ACOE determines that the seasonal pools and/or drainage ditch are jurisdictional, the loss of the jurisdictional resources shall be mitigated at a minimum 3:1 ratio. This may be accomplished through purchasing credits at an ACOE-approved mitigation bank or through the creation and management of wetland habitat (subject to ACOE approval). Should the project applicant opt for creating wetland habitat (rather than purchasing mitigation credits), a wetland mitigation plan shall be prepared and implemented. The primary goal of the plan would include the replacement (at a 3:1 ratio) of the seasonal wetlands affected by the project. The plan shall specify, at a minimum, the following:

- The location of creation/enhancement sites;
- The quantity and species of plants to be planted;
- Planting procedures, including the use of soil preparation and irrigation (when needed);
- Methods for the removal of non-native plants;
- A schedule and action plan to maintain and monitor the creation/enhancement areas;
- A list of criteria (e.g., growth, plant cover, plant diversity) and performance standards by which to measure success of the creation/enhancement project; and
- Contingency measures in the event that creation/enhancement/restoration efforts are not successful.

Approval of the plan by ACOE shall be required prior to the fill of any identified jurisdictional wetlands.

**Significance after Mitigation: Mitigation Measure IV-5** requires a jurisdictional delineation to determine the status of the ditch and pools. The jurisdictional delineation would incorporate measures consistent with the ACOE standards, thus reducing impacts to a less-than-significant level.

**d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with an established resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

**Less-than-Significant Impact.** The project site is located at the outer edge of an urbanized and developed area, immediately bordered to the north and west by dense residential development. The location of the project site precludes wildlife movement through the project site to the north and west. While some undeveloped land occurs to the east of the project site, this land is crossed by heavily traveled roads, including the State Route 4 Bypass, and contains some areas of relatively dense urban and commercial development. As a result, wildlife movement opportunities to the east are heavily constrained and the project site does not provide habitat connectivity to open spaces to the east.

To the south of the project site exists an expanse of undeveloped land with no substantial barriers to wildlife movement from the project site extending southerly toward Livermore. While this open space occurs to the south of the project site, the project site is not part of a wildlife movement corridor due to its location at the outer edge of an urban area. Thus, the project would have a less-than-significant impact in regards to wildlife movement corridors. No mitigation is required.

**e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

**Less-than-Significant Impact.** The project site does not contain any biological resources that are protected by ordinance at the City or County levels, with the exception of potentially protected trees. Three small, non-native trees are located on the project site. The City's Tree Ordinance does not specify what species and size of trees are protected.<sup>10</sup> To provide a conservative estimate, all trees on the project site are assumed to be protected under the City's Tree Ordinance. Under the Tree Ordinance, the project applicant would be required to obtain a permit for the removal of the trees on the project site. Obtaining a permit for tree removal would be consistent with local regulations. Thus, impacts related to local policies and ordinances protecting biological resources would be less than significant. No mitigation is required.

**f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, Regional, or state habitat Conservation plan?**

**No Impact.** The City has elected not to be included within the East Contra Costa County Habitat Conservation Plan (ECCCHCP) and is therefore not subject to the requirements of the ECCCHCP. Thus, the project would not impact or conflict with an approved Habitat Conservation Plan. No mitigation is required.

---

<sup>10</sup> City of Antioch. (2008). *Antioch Municipal Code. Article 12: Tree Preservation and Regulation.*

**V. Cultural Resources**

	<b>Potentially Significant Impact</b>	<b>Potentially Significant Unless Mitigation Incorporated</b>	<b>Less-than-Significant Impact</b>	<b>No Impact</b>
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archeological resource, pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource, site, or unique geologic features?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 ?**

**No Impact.** The project site does not contain any buildings or structures. Therefore, the project site has no identified historic resources that could be adversely affected by the project. No mitigation is required.

**b) Cause a substantial adverse change in the significance of an archaeological resource, pursuant to Section 15064.5?**

**Potentially Significant Unless Mitigation Incorporated.** A records search for archeological resources was submitted to the California Historical Resources Information System (CHRIS) Northwest Information Center on February 13, 2009. The records search covered an area that includes the project site, as well as an area 1/4-mile around the project site.

According to the CHRIS record search results, the project site and surrounding areas do not contain any recorded Native American or historic-period archeological resources. In the region surrounding the project site, Native American cultural resources have been found on ridges, mid-slope benches, and valleys near intermittent perennial watercourses. However, the project site is located along the

edge of the Lone Tree Valley, approximately ½-mile from Sand Creek, the nearest watercourse. Given these geographic factors, there is a low likelihood that unrecorded Native American cultural resources exist on the project site. However, excavation and construction could potentially uncover unknown or unrecorded archeological artifacts. Excavation and soil disturbance during construction could damage or destroy these resources without the incorporation of mitigation measures. **Mitigation Measure V-1** is consistent with CEQA Section 21083.2 and Section 5097.94 and 5097.98 and would reduce any impacts to less-than-significant level.

**Mitigation Measure V-1:** In the event that buried archeological resources are encountered during project grading, site preparation, and construction, the City shall require that construction and/or grading activities within 100 feet of any find is temporarily halted until a qualified archaeologist meeting federal criteria under 36 CFR 61 can assess the significance of the find and provide proper management recommendations. Prehistoric cultural material includes, but is not limited to, shell ridden deposits, hearth remains, stone and/or shell artifacts, and/or burials. Historic material, including but not limited to whole or fragmentary ceramic, glass or metal objects, wood, nails, brick, or other materials may occur within the project area in deposits such as old privies, dumps, or even as part of the fill.

While deposits of prehistoric or historic archeological materials should be avoided by project activities, if the deposits cannot be avoided, the City shall require that a qualified archeologist evaluate the resources for their potential historic significance. If the deposits are determined to be non-significant by a qualified archeologist, avoidance is not necessary. If the deposits are determined to be potentially significant by the qualified archeologist, the resources shall be avoided. If avoidance is not feasible, project impacts shall be mitigated in accordance with the recommendations of the qualified archaeologist, in coordination with the City and CEQA Guidelines Section 15126.4 (b)(3)(C), which requires implementation of a data recovery plan. Upon completion of the qualified archaeologist's assessment, the qualified archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the discovered archaeological materials. The report shall be submitted to the project applicant, the City, and the Northwest Information Center. Once the report is reviewed and approved by the City and any appropriate resource recovery and/or mitigation measures are completed, project construction activity within the area of the find may resume.

**Mitigation Measure V-2:** Prior to the issuance of grading permits, the City shall require that the project applicant and project contractor provide documentation that all construction crews that will work on the project have undergone a training session to inform them of the potential for previously undiscovered archaeological resources within the project area, of the laws protecting these resources and associated penalties, and of the procedures to follow should they discover cultural resources during project-related work.

**Significance after Mitigation:** The implementation of **Mitigation Measure V-1** and **Mitigation Measure V-2** would reduce potential project impacts to any unique cultural resources to a less-than-significant level.

**c) Directly or indirectly destroy a unique paleontological resource, site, or unique geologic features?**

**Potentially Significant Unless Mitigation Incorporated.** According to the City's General Plan and the General Plan EIR, numerous paleontological resources have been recorded within the City limits, particularly near the San Joaquin River and the Mt. Diablo foothills. Although the project site is not located near either of these features, there is the potential to encounter paleontological resources on the project site during grading and construction. **Mitigation Measure V-3** would address potential impacts to both cultural and paleontological resources.

**Mitigation Measure V-3:** In the event that buried paleontological resources are encountered during project grading, site preparation, and/or construction, construction and/or grading activities within 100 feet of the find shall be temporarily halted until a qualified paleontologist can assess the significance of the find and provide proper management recommendations. Paleontological resources include, but are not limited to, fossils and material remains.

**Significance after Mitigation:** The implementation of **Mitigation Measure V-3** would reduce potential project impacts to paleontological resources to a less-than-significant level.

**d) Disturb any human remains, including those interred outside of formal cemeteries?**

**Potentially Significant Unless Mitigation Incorporated.** According to the CHRIS records search result, the project area contains no recorded Native American or historic-period archeological resources, and thus a low likelihood for buried human remains. However, if human remains of Native American origin are discovered on the project site during grading and/or construction, it would be necessary to comply with regulations governing the disposition of Native American remains, set forth by the State of California and administered by the Native American Heritage Commission (NAHC) (Public Resources Code Section 5097). **Mitigation Measure V-4** and **Mitigation Measure V-5** address the impacts related to the potential discovery of human remains on the project site.

**Mitigation Measure V-4:** If human remains are encountered during ground-disturbing activities within the project area, the City shall require that work within 25 feet of the discovery shall be stopped and the project contractor shall immediately notify the Contra Costa County Coroner. At the same time, a qualified archaeologist meeting federal criteria under 36 CFR 61 shall be contacted by the project applicants and project contractor to assess the situation and consult with the appropriate agencies. If the human remains are of Native American origin, the Coroner shall notify the Native American Heritage Commission within 24 hours of this identification. The Native

American Heritage Commission will identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and any associated grave goods.

Upon completion of the assessment, the qualified archaeologist shall prepare a report documenting the background to the finds, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report shall be submitted to the project applicant, the City, and the Northwest Information Center. Once the report is reviewed and approved by the City, and any appropriate treatment completed, project construction activity within the area of the find may resume.

**Mitigation Measure V-5:** Prior to the issuance of grading permits, the City shall require that the project applicant and project contractor provide documentation that all construction crews that will work on the project have undergone a training session to inform them of the presence and nature of federal or state-eligible cultural resources and the potential for previously undiscovered archaeological resources and human remains within the project area, of the laws protecting these resources and associated penalties, and of the procedures to follow should they discover cultural resources during project-related work.

**Significance after Mitigation:** The implementation of **Mitigation Measure V-4** and **Mitigation Measure V-5** would reduce the project's potential impacts to any human remains discovered on the project site to a less-than-significant level.

## VI. Geology and Soils

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Expose people or structures to potential substantial adverse effects including the risk of loss, injury or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?				
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?				
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?				
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslide?				
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Would the project result in substantial soil erosion or the loss of topsoil?				
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in table 18-1b of the Uniform Building Code (1994), creating substantial risks to life or property?				
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Information in this section was drawn from a geotechnical engineering study conducted by the PRA Group, Inc in January 2007. The study is included as **Appendix C**.

**a) Expose people or structures to potential substantial adverse effects including the risk of loss, injury or death involving:**

**i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?**

**Less-than-Significant Impact.** No evidence of active or recent faulting has been observed on the project site. No active faults or Earthquake Fault Zones (Alquist-Priolo Special Studies Zones) are located on the project site or within the City.<sup>11</sup> However, the San Francisco Bay region is considered to be seismically active and subject to the effects of future earthquakes. Four major, historically active faults are located within 30 miles of the project site:

- Hayward Fault (approximately 26 miles west);
- Calaveras fault (approximately 17 miles southwest);
- Concord-Green Valley fault (approximately 13 miles west)
- Marsh Creek-Greenville fault (7 miles southwest).

The San Andreas Fault, which is the largest regional fault, is located approximately 45 miles west of the City.<sup>12</sup> As there are no known active faults on the project site or in the immediate vicinity, the risk of fault rupture is considered to be less than significant. No mitigation is required.

**ii) Strong seismic ground shaking?**

**Potentially Significant Unless Mitigation Incorporated.** The project site will likely experience seismic ground shaking similar to other areas in the seismically active San Francisco Bay Area region. Earthquakes along several active faults in the region, as discussed above, could result in moderate to strong ground shaking at the project site. The intensity of earthquake ground motions would depend on the characteristics of the generating fault, distance to the fault and rupture zone, earthquake magnitude, earthquake duration, and site-specific geologic conditions. Mitigation measures would be incorporated to reduce potentially significant impacts related to ground shaking, as identified in **Mitigation Measure VI-1**.

**Mitigation Measure VI-1:** Prior to the issuance of building permits, the project applicant and project contractor shall ensure that all buildings and structures on the project site are constructed in conformance with the provisions of the most recent version of the California Uniform Building

---

<sup>11</sup> City of Antioch. (July 2003). *City of Antioch General Plan Update EIR*.

<sup>12</sup> Ibid.

Code (UBC) adopted by the City. The Geotechnical Study prepared by The PRA Group, Inc., January 31, 2007 includes seismic shaking criteria for consideration by the project structural engineer in the design of the building foundation. The final choice of design parameters remains the purview of the project structural engineer, subject to the review and approval of the City Engineer. The PRA Group, Inc., January 31, 2007. **Table 2** lists the suggested seismic design parameters:

**Table 2. Project Site Seismic Parameters**

CBC Chapter 16 Table No.	Seismic Parameter	Recommended Value
16-U	Greenville Fault Seismic Source Type	B
16-I	Seismic Zone Factor	0.4
16-J	Soil Profile Type	S <sub>D</sub>
16-Q	Seismic Coefficient (C <sub>a</sub> )	0.44
16-R	Seismic Coefficient (C <sub>v</sub> )	0.64
16-S	Near Source Factors (N <sub>a</sub> )	1.0
16-T	Near Source Factors (N <sub>v</sub> )	1.0

Source: The PRA Group, Inc., 2007

**Significance after Mitigation:** Implementation of **Mitigation Measure VI-1** would reduce the exposure of people or structures to potential adverse impacts resulting from seismic-related ground shaking or failure on the project site to a less-than-significant level.

**iii) Seismic-related ground failure, including liquefaction?**

**Less-than-Significant Impact.** Liquefaction is a phenomenon in which saturated soils lose their strength and stiffness as a result of seismic-related ground shaking.<sup>13</sup> When liquefaction occurs and the strength of the soil decreases, the ability of the soil to support foundations for buildings is reduced. Based on exploratory drilling and soil sampling conducted on the project site in 2007, the soils on the project site consist of a mixture of soils, including silty clay of medium to high plasticity (upper 1-3 feet), fine sandy clay (between 3-10 feet below ground surface), and silty clay to sandy silt (at maximum drilled depths of 11.5 feet below ground surface). These soils show an increased resistance to the effects of liquefaction. Additionally, no free groundwater was encountered in the soil samples, with the deepest exploratory drilling extending 31.5 feet below ground surface. Based upon the classification of the subsurface materials at the project site and the absence of groundwater, the liquefaction potential of the project site is considered low. Impacts related to seismic related ground failure are therefore less than significant. **Mitigation Measure VI-2** (below) would also further reduce impacts related to liquefaction of the proposed building pads.

<sup>13</sup> Saturated soils are soils in which the space between individual soil particles is completely filled with water.

#### iv) Landslides?

**Less-than-Significant Impact.** The majority of the project site consists of flat or gently sloping topography. According to the City's General Plan EIR, the project site is located within an area that is considered "Very Stable," with areas of 0 to 5 percent slope that are not underlain by landslide deposits.<sup>14</sup> Therefore, the potential for landslides to occur at the project site is remote; impacts related to landslides are therefore less than significant. No mitigation is required.

#### b) Would the project result in substantial soil erosion or the loss of topsoil?

**Potentially Significant Unless Mitigation Incorporated.** Project construction would involve minor grading activities to prepare building pads and contour the site for appropriate drainage, resulting in the movement of soils on the project site. As the project site is generally flat with slopes of 0 to 5 percent and would retain a similar profile following construction, the project would not have significant potential to result in soil erosion or topsoil loss. However, implementation of **Mitigation Measures VIII-1 and VIII-2 in Section VIII, Hydrology and Water Quality**, which require preparation of binding stormwater control plans, would reduce any potential impacts from soil erosion during the construction of the project to a less-than-significant level.

**c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?**

**and**

**d) Be located on expansive soil, as defined in table 18-1b of the Uniform Building Code (1994), creating substantial risks to life or property?**

**Potentially Significant Unless Mitigation Incorporated.** Expansive soils generally consist of clay materials that are capable of absorbing water. With water absorption, the associated change in soil volume (expansion) has the potential to result in structural damage to buildings or other structures, including cracks in building foundations. According to the geotechnical engineering study, soil materials in the top 4 feet of the project site generally consist of moderate to expansive silty clay to sandy materials that have the potential to impact the foundation and pavement design for the project. Implementation of **Mitigation Measure VI-2** would address potential impacts related to constructing the project on expansive soils.

**Mitigation Measure VI-2:** Prior to foundation placement, the applicant/contractor shall perform moisture conditioning of all pads. Upon completion of grading operations, the applicant/contractor shall submit to the City an inventory of the final pad grade soil condition conducted by a qualified geologist. The inventory shall identify potential soil corrosion and expansive conditions and make geotechnical design recommendations for the proposed foundation systems. The findings of this

---

<sup>14</sup> City of Antioch. (July 2003). *City of Antioch General Plan Update EIR*. (Figure 4.5.5)

inventory shall be incorporated into project plan revisions to the satisfaction of the Building Division. The City shall not issue a building permit for the project until the above measures are completed to the satisfaction of the City Building Inspector.

**Significance after Mitigation:** An inventory of the final pad subgrade soils would provide the necessary quality control measures and geotechnical design recommendations for the proposed foundation systems and reduce potential impacts from expansive soils to a less-than-significant level.

**e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?**

**No Impact.** The project would be connected to the City's sanitary sewer system. No septic tanks or other on site wastewater disposal systems are included as part of the project. The project would not result in any impacts related to septic tanks. No mitigation is required.

## VII. Hazards and Hazardous Materials

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Information in this section was drawn from a Phase I Environmental Site Assessment (ESA) conducted by the Aqua Science Engineers, Inc. in July 2003. The study is included as **Appendix D**.

**a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

**Less-than-Significant Impact.** The proposed residential development of the project site would not involve the routine use, transport, or disposal of significant quantities of hazardous materials. As such, the project would not create a significant hazard to the public or the environment associated with hazardous materials. No mitigation is required.

**b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?**

**Potentially Significant Unless Mitigation Incorporated.** A review of historical resources and aerial photographs indicate that the project site was developed as an agricultural cropland and/or an orchard since at least the 1930s. By 1982, the project site was developed with two residential dwellings on the northern portion of the property. The orchard and residential dwellings remained on site until approximately 2003, when both the houses and surrounding walnut trees were removed. The City issued a demolition permit for the site in 2004.

It is noted in the Phase I ESA for this project that the demolished residential dwellings were obtaining water from private delivery to above-ground water storage tanks, and appeared to utilize private septic tanks and leachfield systems. Furthermore, due to the age of the residential dwellings (possibly pre-1970s) there is a potential for the building materials to have contained asbestos-

containing materials (ACMS) and/or lead based paint (LBP). As such, ACMs or LBP materials could be within the existing soils on the project site if prior mitigation was not implemented in the demolition of the dwellings.

Furthermore, the site's previous use as an orchard may have involved application of agricultural chemicals, such as pesticides and other solvents. The potential presence of agricultural chemicals in project soils could adversely affect the health of construction workers during project construction and future residents during project operation. While the City currently does not require agricultural sites to conduct further chemical screening prior to development as residential land uses, implementation of **Mitigation Measure VII-1** would be required to reduce the environmental impacts of the potential presence of agricultural chemicals in the soils, or other unknown hazardous materials, to a less-than-significant level.

Additionally, construction of the project could result in potential exposure of people to hazards and hazardous materials related to construction activities, such as the accidental release of oil, gasoline, or diesel fuel. Implementation of **Mitigation Measure VII-2** would reduce such potential impacts to a less-than-significant level.

**Although the project site is within the Brentwood natural gas field, no current or former (existing or abandoned) exploratory gas or oil wells are known to occur on or within the vicinity of the project site. In the event that any unrecorded gas or oil wells are discovered on the project site during project construction activities (i.e., earth moving activities), implementation of Mitigation Measure VII-1 would reduce such potential impacts to a less-than-significant level.**

**Mitigation Measure VII-1:** Prior to the issuance of any grading permit by the City, the project applicant shall enlist the services of a qualified professional to prepare a Phase II ESA to assess the presence and extent of potentially unknown hazardous materials. The Phase II ESA shall, at minimum, consist of the collection and analysis of soil samples to determine the possible presence of agricultural chemicals. The Phase II ESA investigation shall be conducted in conformance with state and local guidelines and regulatory oversight. The findings of this investigation shall be documented in a written report and submitted to the City. If the results of the Phase II ESA confirm the presence of **hazards or hazardous materials**, such as agricultural chemicals **or unrecorded gas and oil wells**, ~~site radiation~~ **remediation** shall be required with oversight by applicable state and local regulatory agencies, depending on the nature and extent of contamination. **If unrecorded gas or oil wells are uncovered, the tentative map shall be revised to create no-build easements or remove affected parcels entirely to ensure that no structures are built over or in proximity to an abandoned well location. Remedial plugging operations or re-abandonment shall also be performed pursuant to Section 3208.1 of the Public Resources Code and the California Department of Conversation shall be contacted.** The impact of

specific remedies implemented on air quality and resulting health effects, nuisance conditions, risk of upset in the event of an accident, and transportation of contaminated material associated with the remediation shall be addressed prior to implementation of the site remedy.

**Mitigation Measure VII-2:** Prior to the issuance of construction permits, the project applicant shall submit a Soil Management Plan (SMP) for review and approval by the City. The SMP shall establish management practices for handling fuels during construction to reduce the potential for spills and to direct the safe handling of these materials if encountered.

**Significance after Mitigation:** Implementation of further soil sampling and the development of a SMP, as defined in **Mitigation Measure VII-1** and **Mitigation Measure VII-2**, respectively, would reduce impacts related to the exposure of hazardous materials to the public to a less-than-significant level.

**c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

**Less-than-Significant Impact.** The Heritage Baptist Academy is located on the church/school site approximately 50 feet to the east/northeast of the project site. No other school is located within a quarter mile of the project site. However, as noted above, the project would not involve the use, transport, or disposal of hazardous materials, and would not create a significant hazard to the public or the environment. No mitigation is required.

**d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and as a result, would it create a significant hazard to the public or the environment?**

**Less-than-Significant Impact.** The project site was not identified as a hazardous materials site on any of the local regulatory agency database lists. No mitigation is required.

**e) and f) Proximity to Airport/Private Airstrip?**

**Less-than-Significant Impact.** The closest public use airport to the project site is Byron Airport, located about 15 miles to the southeast. The closest private airstrip to the project site is the Funny Farm Airport, located 6 miles to the east beyond the City of Brentwood. The distance from airports and private airstrips ensures that the project would not be adversely affected by airport operations. No mitigation is required.

**g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

**Less-than-Significant Impact.** According to the Contra Costa County Fire Prevention District (CCCFPD), the project would not alter or interfere with the provision of emergency services or existing emergency evacuation plans.<sup>15</sup>

Furthermore, as shown in **Section XV, Transportation and Circulation**, several additional mitigation measures are proposed that would allow for more efficient traffic flows in the project vicinity. In all, the project would have a less-than-significant impact to emergency services plans. No mitigation is required.

**h) Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

**Less-than-Significant Impact.** Government Code 51175-89 directs the California Department of Forestry and Fire Protection to map areas of very high fire hazards within Local Responsibility Areas (LRA). Mapping of these areas is based on hazard-relevant factors such as fuels, terrain, and weather. The mapped areas are used by the California Building Commission, Contra Costa County Fire Protection District, and the City Building Department to develop Codes that determine the appropriate fire resistance of building materials.

According to the 2007 Contra Costa County Fire Hazard Severity Zones in Local Responsibility Area map, the project site is located in an LRA Moderate zone.<sup>16</sup> Moderate areas are not specifically designated as “fire hazard zones”, but can experience wildland fires.

Through mandatory plan review and construction inspection process, the Contra Costa County Fire Protection District, Prevention Bureau ensures that all new and remodeled buildings and facilities meet all of the state and local Building and Fire Code requirements in order to minimize the potential for loss of life, physical injury, property damage, and social disruption resulting from wildland fires.

Compliance with the fire prevention bureau plan review process would reduce potential impacts from wildland fires to a less-than-significant level. No further mitigation is required.

---

<sup>15</sup> Ted Leach, Fire Prevention Technician, CCCFPD. Personal Communication, March 5, 2009.

<sup>16</sup> California Department of Forest and Fire Protection, Fire and Resource Assessment Program. Contra Costa County Fire Hazard Severity Zones in LRA. Accessed April 21, 2009.  
<[http://frap.cdf.ca.gov/webdata/maps/contra\\_costa/fhszl06\\_1\\_map.7.pdf](http://frap.cdf.ca.gov/webdata/maps/contra_costa/fhszl06_1_map.7.pdf)>.

### VIII. Hydrology and Water Quality

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage patterns of the site or area including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted run-off?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Information in this section was drawn from a draft project Stormwater Control Plan by Bellecci & Associates, dated January 2010. This plan is included as **Appendix E**.

Development projects within Contra Costa County are required to comply with Provision C.3 of the Regional Water Quality Control Board (RWQCB) National Pollutant Discharge Elimination System (NPDES) permit regulating municipal storm drain discharge.<sup>17</sup> For developments, Provision C.3 requires that a project include stormwater treatment and source control measures to address water quality, and also requires projects to control the flow of storm water off the site such that post-project runoff does not exceed estimated pre-project runoff.

Provision C.3 guidelines require the submittal of a Stormwater Control Plan that demonstrates how compliance with these requirements would be achieved.

<sup>17</sup> The C.3 provisions are in addition to and separate from the erosion and sediment control and stormwater pollution prevention requirements during construction.

**a), c), d), e), and f) Impacts Related to Water Quality/Stormwater Runoff/Site Drainage?**

**Potentially Significant Unless Mitigation Incorporated.** Currently, when stormwater falls on the existing, undeveloped project site, the water is absorbed into the earth, flows to the northeast (where site elevation is the lowest), or evaporates. The project site is underlain by silty clay near-surface soils that have a moderately slow permeability (infiltration of water measured in inches of water per hour).<sup>18</sup>

The proposed construction of 115 residential buildings, roadways, and parking areas would increase the extent of impervious surface on the site and could potentially decrease water quality and increase offsite flow of storm water. To address water quality impacts and ensure compliance with C.3 requirements, the project includes a network of bioretention facilities along the internal street network and within the proposed park to capture stormwater from streets and adjacent properties. Runoff from the downspouts of roofing, roads, and driveways would be directed towards the bioretention facilities to encourage treatment and compliance with Provision C.3 requirements. Additionally, a self-retaining area would be located at the northwestern corner of the project site.

The bioretention facilities would promote the detention and retention of peak stormwater flows, reducing the actual volume of stormwater runoff, and allowing pollutants to settle out or adhere to soils before they can be discharged. On-site stormwater will be collected and conveyed by a combination of overland flow and grassy swale to the bioretention facilities, located between the back of the curb and/or sidewalk and the residential units. Such bioretention facilities would be operated and maintained by the Homeowners Association. Following the cleansing process, the runoff would be collected by perforated pipe networks and discharged into the City storm drain system.

In order to address potential water quality impacts associated with project construction and grading, **Mitigation Measure VIII-1** below requires the implementation of Best Management Practices (BMPs) set forth in the Contra Costa Clean Water Program that would minimize opportunities for construction activities to create polluted runoff water.

**Mitigation Measures VIII-1 and VIII-2** would address potential impacts associated with water quality site drainage and site runoff and would reduce such impacts to a less-than-significant level.

**Mitigation Measure VIII-1:** Prior to the issuance of any grading or construction permits, the project applicant shall prepare for City review and approval a Stormwater Pollution Prevention Plan (SWPPP) as per the guidelines set forth by the City and the RWQCB. The SWPPP shall incorporate BMPs that minimize the amount of erosion occurring both during and after construction.

---

<sup>18</sup> Soil Interpretation Help Sheet, Guide for Determining Soil Permeability. Accessed July 13, 2009. <<http://dese.mo.gov/divcareered/AG/CDE/SoilsInterpretation.pdf>>.

**Mitigation Measure VIII-2:** Prior to the issuance of any grading or construction permits, the project applicant shall submit the Stormwater Control Plan to the City for review and approval. The Stormwater Control Plan shall satisfy all Provision C.3 requirements and meet or exceed all requirements. The contractor shall implement the Stormwater Control Plan, including all measures directed by RWQCB to limit the imperviousness of the site by constructing landscape islands and vegetated swales.

**Significance after Mitigation:** The implementation of **Mitigation Measures VIII-1** and **VIII-2** would reduce potential water quality impacts to a less-than-significant level.

**b) Deplete groundwater?**

**Less-than-Significant Impact.** The project does not include any plan to draw groundwater. Groundwater basins in the project area are not utilized as public water sources. Rather, water supplies in the City, as well as in surrounding communities, are provided by the Contra Costa Water District, whose water supply is provided from the Sacramento-San Joaquin Delta, among other sources.

The project would increase the amount of impervious coverage on the project site, resulting in a slowing of groundwater recharge. However, landscaped areas and drainage swales on the project site would help achieve a degree of site porosity, allowing for a limited amount of groundwater recharge, as well as consistency with regional stormwater control requirements. Thus, project impacts to groundwater would be less than significant. No mitigation is required.

**g), h), and i) Flooding or other hazards?**

**Less-than-Significant Impact.** According to maps prepared by the Federal Emergency Management Agency (FEMA), the project site does not contain any areas designated as a 100-year flood hazard zone.<sup>19</sup> As such, no housing or other structures associated with the project would be constructed within any 100-year flood hazard area. The closest 100-year flood hazard area to the project site is within the immediate concrete channel of the Contra Costa Canal, approximately 0.5 miles north of the project site.

The Contra Loma Dam is the closest dam to the project site, located approximately 3.5 miles west. The City-wide inundation map for the failure of Contra Loma Dam and Dike No. 2 indicates that the project site is more than 3 miles east of the areas that would be impacted by this dam failure.<sup>20</sup> Furthermore, the project site is more than 4 miles south and upgradient of levees along the Sacramento/San Joaquin River, minimizing the likelihood of any adverse effects associated with levee rupture. Impacts related to flooding are thus less than significant. No mitigation is required.

---

<sup>19</sup> Federal Emergency Management Agency. (July 16, 1987). *Federal Insurance Rate Map No.0600250335B, Contra Costa County.*

<sup>20</sup> City of Antioch. (November 2003). *City of Antioch General Plan.* (Figure 4.7.3).

**j) Inundation by seiche, tsunami, or mudflow?**

**Less-than-Significant Impact.** The project site is located over 50 miles from the Pacific Ocean. Tsunamis typically affect coastlines and areas up to ¼ mile inland. Due to the project's distance from the coast, potential impacts related to a tsunami are minimal. Additionally, the project site is not susceptible to impacts resulting from seiche because of its distance from any enclosed bodies of water. The nearest body of to the project site is the Antioch Municipal Reservoir, which is located approximately 3 miles northwest of the project site. The Contra Loma Reservoir is also located just over 3 miles to the northwest of the project site. As neither steep slopes nor volcanoes are located in close proximity to the project site, the possibility of inundation by landslides or volcanic mudflows is remote. No mitigation is required.

**IX. Land Use and Planning**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**a) Physically divide an established community?**

**Less-than-Significant Impact.** The project site is located between existing residential neighborhoods to the west and undeveloped or agricultural lands to the south and east. The project would result in a southerly and easterly extension of existing residential areas. As such, the project would not divide any established communities. No mitigation is required.

**b) Conflict with relevant land use plan, policy, or regulation?**

**Less-than-Significant Impact.** The project site is currently identified in the General Plan for the development of medium low-density residential uses, with a maximum of 6 dwelling units per acre. As the project would result in the construction of single-family homes at a density of approximately 5.6 units per acre, it would be consistent with the existing land use designation for the project site. The project site is zoned by the City as a Planned Development district, which allows for the proposed residential use.<sup>21</sup>

<sup>21</sup> City of Antioch. (2008). *Antioch Municipal Code, City Code Section 9-5.2304.*

Should the City Council adopt Prewett Ranch Drive Alternative B, which does not include the extension of Prewett Ranch Drive through the Heidorn Ranch Road, a General Plan Amendment may be required to allow the Circulation Element of the City's General Plan to be revised accordingly. This General Plan Amendment would be limited to Prewett Ranch Drive and would not result in the alteration of the number of units or type of development proposed on the project site.

As with any other development within the City, the project would be required to conform to the general design standards and guidelines of the City Code. Thus, the project would not conflict with any existing land use plans or policies. No mitigation is required.

**c) Conflict with any applicable habitat conservation plan?**

**Less-than-Significant Impact.** There is no operative habitat conservation plan in the City of Antioch. Therefore, the project would not result in conflict with any habitat conservation plan or natural community conservation plan. No mitigation is required.

The closest habitat conservation plan is the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (ECCCHCP). The City is not within the ECCCHCP area, although the ECCCHCP does include the adjacent City of Brentwood. The ECCCHCP includes a discussion of potential resources on the project site, noting that the site has a lower level acquisition rating for potential mitigation lands.<sup>22</sup>

---

<sup>22</sup> East Contra Costa County Habitat Conservation Plan Association. (October 2006). *The Final East Contra Costa County Habitat Conservation Plan/Natural Conservation Plan*.

**X. Mineral Resources**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a) and b) Result in the loss of availability of a known mineral resource and/or the availability of a locally important mineral resource recovery site?**

**No Impact.** According to the Contra Costa County General Plan, the project site is not classified or designated within a mineral resource zone. Furthermore, the City’s General Plan EIR states that none of the areas identified in the General Plan for redevelopment contain mineral resources that would be of value to the region and residents of the state. In sum, the project would have no impact to mineral resources. No mitigation is required.

## XI. Noise

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in 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 the other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Result in exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project located within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Information in this section is based on a noise assessment prepared by Illingworth & Rodkin, Inc. in September 2009, included as **Appendix F** and summarized below.

### Background

The project site is currently vacant, and therefore there are no on-site uses that generate audible noise. Potential noise sensitive receptors in the project area include medium-density residential neighborhoods to the north and west of the project site; recreational users of the Mokelumne Trail to the north; the church/school to the northeast; and two large-lot rural residential homes to the east of the project site across Heidorn Ranch Road, located in the City of Brentwood.

Approved roadway improvements in the vicinity of the project site have the potential to alter the existing noise environment. The City of Brentwood General Plan 2001-2021 shows the extension of Sand Creek Road across the State Route 4 Bypass and linking to Heidorn Ranch Road. Land along the eastern side of Heidorn Ranch Road is designated in the Brentwood General Plan as part of Special Planning Area P (SPA P). The Brentwood General Plan calls for a mixed use development in this area, consisting of office/professional, commercial, and medium- to high-density residential uses. To this end, the Noise Element of the Brentwood General Plan assumes that portions of Heidorn Ranch Road between the future Sand Creek Road intersection and Lone Tree Way would experience noise levels at or above 60 dBA CNEL.<sup>23</sup> To date, Sand Creek Road has not been extended and SPA P, including the area across Heidorn Ranch Road from the project site, has not been fully built out as per the Brentwood General Plan. SPA P regulations do not assume the inclusion of rural residential development, so the existing rural residential properties are expected to be redeveloped with higher intensity uses consistent with SPA P.

### Project Impacts

Project construction and ongoing operations (primarily vehicular traffic) have the potential to generate noise.

Section 11.6.1 of the City's General Plan contains the following noise level objectives for land uses related to the proposed project:

- Single-Family Residential Areas (outdoor): 60 dBA CNEL
- Single-Family Residential Areas (indoor): 45 dBA CNEL

Noise Policy 11.6.2 of the City's General Plan requires "the implementation of appropriate noise mitigation when the proposed project would cause new exceedances of General Plan noise objectives, or an audible (3.0 dBA) increase in noise in areas where General Plan noise objectives are already exceeded as the result of existing development."

---

<sup>23</sup> CNEL refers to the "Community Noise Equivalent Level." CNEL represents the average noise level over a 24 hour period. CNEL is computed by measuring sound in a given location for at least 24 hours. The average noise level, as measured in decibels (dBA), is the CNEL measurement. The CNEL standard provides for "penalties" in that noises that occur during late evening and early morning hours, when people tend to be most sensitive to noise disturbance, are given a heavier weighting than if they occurred during daytime hours.

The primary noise source at the project site and surrounding areas is vehicular traffic along Heidorn Ranch Road. In order to quantify existing noise levels, a noise monitoring survey was conducted for the project site from March 31, 2009 to April 3, 2009. The noise monitoring survey included one 24-hour noise measurement site (LT-1) and two attended short-term noise measurement sites (ST-1 and ST-2). The three measurement locations and durations were chosen based on the location of existing sensitive receptors, and are shown in **Figure 7**.

Noise measurement site LT-1 is located along Heidorn Ranch Road, south of the church/school at approximately 40 feet from the center of Heidorn Ranch Road. Noise measurement site ST-1 is located adjacent to the northwest corner of the church/school property, while ST-2 is located at the current end of Prewett Ranch Drive near Summerfield Drive. **Table 3** provides a summary of the noise measurements, which are consistent with a suburban environment.

**Table 3. Existing Noise Levels**

Measurement Location	Measured Noise Levels (dBA)		Estimated Noise Level, dBA CNEL	Primary Noise Source
	L <sub>max</sub>	L <sub>eq</sub>		
LT-1 – 40 feet from center of Heidorn Ranch Road	56	41-56	57	Heidorn Ranch Road
ST-1 – 155 feet from nearest residential land use	58	47	49	Heidorn Ranch Road
ST-2 – End of Prewett Ranch Drive	59	46	47	Prewett Ranch Drive

Source: Illingworth & Rodkin, 2009.

Significance Criteria

The project would have a significant noise impact if its construction and/or operation would result in:

- Exposure of noise-sensitive receivers to noise levels exceeding the City’s guidelines for noise and land use compatibility (60 dBA CNEL for outdoor areas; 45 dBA CNEL for interior areas).
- A substantial permanent noise level increase at existing sensitive receivers (e.g., residences). A “substantial increase” is defined as an increase of 3 dBA L<sub>dn</sub> or greater.
- Construction noise levels that are sufficiently high to interfere with speech, sleep, or normal residential activities. Construction activities would substantially increase ambient noise levels over a temporary basis if noise levels resulting from these activities exceeds 60 dBA L<sub>eq(hr)</sub>, is at least 5 dBA L<sub>eq(hr)</sub> above ambient noise levels, and the duration of the construction exceeds one year.

**a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of the other agencies?**

**Potentially Significant Unless Mitigation Incorporated.** This impact and the following discussion relate to the proposed Tierra Villas homes. The discussion evaluates whether the existing and future noise environment would be suitable for new residential uses, and identifies mitigation to ensure that future noise on the proposed lots would be within the city standards for residential uses.

As discussed below, Lots 1 through 7, proposed along Heidorn Ranch Road, would be subject to exterior noise levels in excess of 60 dBA CNEL, and interior noise levels in excess of 45 dBA CNEL.

*Future Exterior Noise*

According to the traffic study (discussed in **Section XV, Transportation and Circulation**), the project would contribute up to 1,101 additional vehicle trips per day. The future noise level at the project site is anticipated to increase as a result of the project trip generation and the cumulative growth forecast in the General Plan. Proposed residences located along Heidorn Ranch Road would be exposed to noise levels in excess of the City's guidelines for noise and land use compatibility.

*Heidorn Ranch Road*

Lots 1 through 7 of the proposed project are located in proximity to Heidorn Ranch Road. Following project implementation, the noise level at these residences would be 65 dBA CNEL, exceeding the City's 60 dBA CNEL threshold by 5 dBA CNEL. **Mitigation Measure XI-1**, which requires the construction of a 6-foot-high sound barrier as shown in **Figure 7**, would reduce outdoor noise levels at Lots 1 through 7 to approximately 60 dBA, in compliance with the city's Noise Policy 11.6.2.

*Prewett Ranch Drive*

Lots 8 through 20, and lots 22 and 23 are located along the future Prewett Ranch Drive extension. The noise study examined both of the future access alternatives for Prewett Ranch Drive and found that under either Alternative, future noise levels along Prewett Ranch Drive would remain under 60 dBA CNEL. Prewett Ranch Drive Alternative A (full through-connection) would result in a sound level of 54 dBA CNEL for lots along Prewett Ranch Drive. Under Prewett Ranch Drive Alternative B, in which Prewett Ranch Drive would extend only to Lot 18, traffic levels would be lower and the resultant noise level at these lots would be 52 dBA CNEL. No mitigation is required.

*Indoor Noise*

The City's General Plan requires that interior noise levels within new single-family residential units not exceed 45 dBA CNEL in any habitable room.

In buildings of typical construction, with the windows partially open, interior noise levels are approximately 15 dBA lower than exterior noise levels. With the windows closed, standard residential construction typically provides 20 to 25 decibels of exterior to interior noise reduction. Where exterior noise levels range from 60 to 65 dBA CNEL the interior noise level can typically be maintained below City standards (45 dBA CNEL) assuming standard construction methods and the incorporation of forced air mechanical ventilation systems in residential units. These systems allow the occupant the option of controlling noise by maintaining the windows shut.

#### *Prewett Ranch Drive*

The future sound level for the lots along Prewett Ranch Drive would be 54 dBA CNEL; therefore, the interior sound level for these homes would be 15 dBA lower, i.e. approximately 39 dBA CNEL when windows are open; lower when windows are closed. No mitigation is required.

#### *Heidorn Ranch Road*

As noted above, following the implementation of **Mitigation Measure XI-1**, exterior noise levels at Lots 1 through 7 would be at approximately 60 dBA CNEL. Assuming standard construction, interior noise levels at the ground floor of these units would be reduced by at least 15 dBA CNEL, to approximately 45 dBA CNEL, which complies with Title 24 regulations.

However, second floor interior spaces would not experience the noise reduction benefit of the soundwall, meaning that interior noise levels with standard construction could exceed the 45 dBA CNEL limit set forth in Title 24. Therefore, further mitigation is required to ensure that homes built on these lots comply with Title 24 requirements. Preliminary calculations suggest that these residential units would require sound rated windows and exterior doors with ratings ranging from STC 26-28 to assure that the interior average noise level guideline is met. Interior noise levels vary depending on the final design of the units (relative window area to wall area) and construction materials and methods. Incorporation of **Mitigation Measure XI-2** would reduce impacts to the indoor noise levels for the units at lots 1 through 7 to a less-than-significant level.

**Mitigation Measure XI-1:** Prior to the issuance of the first building permit, the City shall ensure that final project plans incorporate a permanent noise barrier six feet in height to be constructed along the entire project frontage on Heidorn Ranch Road. The barrier shall be completely solid with a minimum surface weight of 3 pounds per square foot (i.e. one-inch thick wood, masonry block, concrete, or metal). The approximate location of the barrier is shown in **Figure 7**.

**Mitigation Measure XI-2:** Prior to the issuance of building permits, the City shall ensure that final project plans for the buildings on lots 1 through 7 incorporate appropriate and feasible noise reduction measures, including forced-air mechanical ventilation so that windows could be kept closed to control noise. Noise reduction measures would also include sound rated windows and building insulation as necessary to achieve compliance with Title 24 regulations. Results of project

specific analyses, including the description of the necessary noise control treatments, shall be submitted to the City along with the building plans and approved prior to issuance of a building permit.

**Significance after Mitigation:** Implementation of **Mitigation Measures XI-1** and **Mitigation Measure XI-2** would reduce exterior and interior noise impacts to a less-than-significant level. Please note: the potential visual impact of the noise barrier is discussed in **Section I, Aesthetics**.

**b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?**

**Less-than-Significant Impact.** The proposed residential development includes no components that would generate ground-borne noise or vibration, except as associated with temporary construction activities, discussed in subheading d) below. The project would have a less-than-significant impact with regard to ground-borne noise and vibration; no mitigation is required.

**c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**

**Potentially Significant Impact Unless Mitigation Incorporated.** This impact and the following discussion relate to the existing uses surrounding the project site. The discussion evaluates whether project traffic noise would cause a significant increase in noise for existing uses, and identifies mitigation to ensure that future noise at these existing uses would be within the city standards.

As discussed below, the two rural residential lots along the east side of Heidorn Ranch Road would be subject to exterior noise levels in excess of 60 dBA CNEL, and interior noise levels in excess of 45 dBA CNEL.

Traffic noise levels in the area are calculated to increase substantially over the long-term as the area transitions from a rural land use pattern to a suburban area. Various environmental documents have discussed traffic noise level increases anticipated on roadways serving the project site. Noise impacts resulting from future increases in traffic along Heidorn Ranch Road were identified in the Brentwood General Plan and EIR, which assumes future mixed-use development of the area with office/professional, commercial, and medium- to high-density residential uses. No specific redevelopment of this area is currently proposed or in the development pipeline at the City of Brentwood.

The Tierra Villas project will contribute to the substantial increase in ambient noise that is expected in the future, and the project will be the first to change the character of the noise environment at rural residences east of the site. The addition of project traffic and the associated anticipated widening of Heidorn Ranch Road to a 3-lane arterial would result in a 5 dBA CNEL noise increase at Lots 1 through 7 and at the homes across Heidorn Ranch Road from the project. Noise levels to

the north of the project, between Kohls Drive and Lone Tree Plaza Drive, would increase by 7 dBA CNEL, as the majority of vehicles are presumed to exit the project site from the northern access drive.

#### Existing Uses North Of The Project

Recently constructed residential subdivisions to the north and west already include extensive noise mitigation—such as open space buffers and noise barriers—that shield private outdoor use areas from traffic noise. It is apparent that future increases in noise were taken into account in the design of these subdivisions, and the inclusion of these noise mitigation features ensures that exterior noise levels on these residential properties would not exceed 60 dBA CNEL after implementation of the project.

#### Rural Residences On The East Side of Heidorn Ranch Road

The anticipated exterior ambient noise increase of 5 dBA CNEL associated with project traffic and the widening of Heidorn Ranch Road would cause the ambient sound level to increase from 57 dBA CNEL to 62 dBA CNEL, in conflict with the City's residential threshold of 60 dBA CNEL for outdoor use areas. As already noted, a project-related increase of 3 dBA CNEL or greater is considered significant.

Conformance to the city standard of 60 dBA CNEL can be achieved through either of two recommended measures: paving the roadway with “quiet” pavement such as Open-Grade Asphalt Concrete, or reducing the travel speed along this stretch of roadway from 45 mph to 35 mph.

#### Quiet Pavement

Case studies have shown that the replacement of dense grade asphalt (standard type) with open-grade or rubberized asphalt can reduce traffic noise levels along residential-type streets by 2 to 3 dBA. Using more conservative assumptions, the widening of Heidorn Ranch Road to a 3-lane arterial using a quiet pavement treatment would be expected to result in a noise reduction of 2 dBA. Exterior noise levels with mitigation would be expected to be 60 dBA  $L_{dn}$ /CNEL or less throughout the residential outdoor activity areas west of existing Heidorn Ranch Road residences and exterior noise levels at the residential facades would be approximately 58 dBA  $L_{dn}$ /CNEL. Interior noise levels within the affected residences would be expected to be 43 dBA  $L_{dn}$ /CNEL or less.

#### Traffic Calming

Each 5 mph reduction in average speed provides approximately 1 dBA of noise reduction on an average basis ( $L_{eq}$ /CNEL). Therefore, reducing the posted speed from 45 mph to 35 mph would yield 2 dBA of noise reduction. Traffic calming measures that regulate speed improve the noise environment by smoothing out noise levels. Exterior noise levels with mitigation would be expected to be 60 dBA  $L_{dn}$ /CNEL or less throughout the residential outdoor activity areas west of existing

Heidorn Ranch Road residences and exterior noise levels at the residential facades would be approximately 58 dBA  $L_{dn}$ /CNEL. Interior noise levels within the affected residences would be expected to be 43 dBA  $L_{dn}$ /CNEL or less.

**Mitigation Measure XI-3:** Prior to issuance of the first occupancy permit, the applicant shall repave Heidorn Ranch Road along the project frontage with open grade asphalt concrete, or the city shall post a 35 mph travel speed along Heidorn Ranch Road.

**Significance after Mitigation Measure XI-3:** Implementation of either of the mitigation options would reduce the project's impact to exterior and interior noise levels to a less-than-significant level.

**d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?**

**Potentially Significant Impact Unless Mitigation Incorporated.** This impact and the following discussion relate to the effect of construction noise on existing uses surrounding the project site. The nearest existing residential receivers are about 40 feet from the project site.

The discussion evaluates whether noise levels during construction of the project would result in a significant increase in noise for surrounding uses, and identifies mitigation to reduce construction noise.

Noise associated with construction of the project would result in a temporary increase in noise levels at surrounding properties. Construction-related noise levels are typically highest during site preparation (i.e. grading and paving) and installation of infrastructure when heavy equipment such as earthmovers, bulldozers, and paving machinery generate noise levels in the range of 81 to 88 dBA at a distance of 50 feet. Construction generated noise levels drop off at a rate of about 6 dBA per doubling of distance between the source and receptor. Hourly average noise levels along the perimeter of the site would therefore range from 79 to 86 dBA  $L_{eq}$  during the busiest construction periods. Shielding by barriers or buildings would provide an additional 5 to 10 decibels of attenuation at distant receptors.

Construction noise levels associated with the erection of the residential units, such as hammer- and drilling-related noise, range from approximately 63 dBA to 71 dBA at a distance of 50 feet.<sup>24</sup> The noise levels associated with construction of the residential units would be substantially less than the noise levels associated with grading and pavement activities during project site preparation.

Typically, a significant construction noise impact occurs at a noise-sensitive use (i.e. residence or school) when the noise from construction activities exceeds 60 dBA  $L_{eq}$  and exceeds the ambient noise environment by 5 dBA  $L_{eq}$  for a period greater than one year. As the project would be constructed in two phases over a period of approximately three years, adjacent residential uses to the

---

<sup>24</sup> The Center to Protect Worker's Rights. (2003). Construction Noise.

west and north and persons at the Heritage Baptist Academy would experience noise levels in excess of 60 dBA  $L_{eq}$  for a period greater than one year. Mitigation is thus required to address temporary construction noise.

**Mitigation Measure XI-4:** The City shall require that for the duration of project construction, the project applicant and project contractor shall limit all construction and grading activities to specific hours of operation to limit noise impacts on adjacent noise-sensitive land uses, as follows:

- Per Section 5-17.04 of the City's Municipal Code, construction activities shall be limited to the hours of 7:00 AM to 6:00 PM on weekdays.
- Construction within 300 feet of occupied dwelling units and the Heritage Baptist Academy and athletic fields shall be further limited to the hours between 8:00 AM to 5:00 PM on weekdays.
- On weekends and holidays, irrespective of the distance from dwelling units, construction activity shall be limited to the hours between and 9:00 AM to 5:00 PM.

**Mitigation Measure XI-5:** Prior to the issuance of grading permits, the project applicant shall submit a construction-related noise mitigation plan to the City of Antioch for review and approval. The plan shall include the following elements:

- The project contractor shall use temporary noise-attenuation fences, where feasible, to reduce construction noise impacts on adjacent sensitive land uses. In particular, the plan shall address the homes along the western project boundary. Temporary noise barrier fences would provide a 5 dBA noise reduction if the noise barrier interrupts the line-of-sight between the noise source and receiver and if the barrier is constructed in a manner that eliminates any cracks or gaps.
- During all project site preparation, the project contractors shall equip construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists. Locate this and other stationary noise generating equipment as far as possible from sensitive receptors. The project contractor shall construct temporary noise barriers to screen stationary noise generating equipment when located near adjoining sensitive land uses.
- Depict the location of construction equipment storage and maintenance areas and how the noise from this equipment will be mitigated during construction.

- All haul delivery trucks shall be subject to the same hours specified for construction equipment. The mitigation plan shall denote any construction traffic haul routes where heavy trucks would exceed 100 daily trips.
- Unnecessary idling of internal combustion engines shall be strictly prohibited.
- Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the project site.
- Designate a "disturbance coordinator" who shall be responsible for responding to any local complaints regarding construction noise. The disturbance coordinator shall determine the cause of the noise complaint and shall require that reasonable measures warranted to correct the problem be implemented. The project contractor shall conspicuously post a telephone number for the disturbance coordinator at the construction site.
- The project applicant shall coordinate with the City of Antioch to notice to the residents immediately adjacent to the project site and the Heritage Baptist Academy regarding the project construction schedule. The notice shall include the contact information for the disturbance coordinator (discussed above).

**Mitigation Measure XI-6:** Prior to the issuance of grading permits, the City shall require that the project applicant modify the construction phasing plan and submit the revised construction phasing plan to the City's Community Development Director for review and approval.

The modified construction phasing plan shall require that all grading and paving activities on the entire project site be completed within a period of one year to limit the duration of the loudest construction-related noise levels associated with earthmovers, bulldozers, and paving equipment. The phased construction of the residential units shall ensure that construction-related noise is localized to a single portion of the project site during each phase and would separate ongoing unit construction from the completed, occupied residential units on site.

**Significance after Mitigation:** **Mitigation Measures XI-4** and **XI-5** would reduce construction noise impacts to a less-than-significant level by limiting the hours of construction operation and requiring the implementation of a construction-related noise mitigation plan. **Mitigation Measure XI-6** would reduce the duration of the loudest construction-related noise sources associated with onsite grading and paving to a period of one year, consistent with the construction hour time limits specified in **Mitigation Measure XI-4**. While construction of the residential units would take place over a period greater than one year, the noise levels associated with unit construction would be localized to a single portion of the project site pursuant to the unit phasing, would result in substantially lower noise levels than would project site preparation activities, and would be subject to

the same construction time limits and mitigation plan requirements as identified in **Mitigation Measures XI-4** and **XI-5**. Thus, implementation of these mitigation measures would reduce temporary construction-related noise impacts to a less-than-significant level.

**e) and f) Located within an airport land use plan/vicinity of a private airstrip?**

**No Impact.** The project would not be located within an airport land use plan, within two miles of an airport, nor within the vicinity of any private airstrip. Byron Airport is the nearest public airport to the project site, approximately 15 miles southeast of the project site. The nearest private airstrip, Funny Farm Airport, is located 6 miles east of the project site. Due to the project's distance from and the flight path orientation of these airports, there is no impact in regards to the noise impacts from aircraft noise sources and no mitigation is required.

## XII. Population and Housing

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Induce substantial population growth in an area, either directly, (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### a) Induce substantial population growth?

**Less-than-Significant Impact.** Since the year 2000, the population within the City has increased by 9 percent, with an estimated total of 100,361 residents in 2008.<sup>25</sup> The Association of Bay Area Governments (ABAG) publishes population forecasts for the nine-county San Francisco Bay Region, including Contra Costa County. As of 2007, ABAG estimates that the City's population will be 106,800 in 2010 and 116,000 in 2020.

The project would create 115 new single-family residential units. Based on the 2005-2007 U.S. Census survey of average household size in the City (3.11 persons), the total number of units would increase the City's population by a maximum of approximately 356 persons.

ABAG projections for the City are based on the area of residential designations identified by the General Plan. As previously discussed, the project site is designated for residential development and, as discussed in **Section IX, Land Use and Planning**, is consistent with the City's General

<sup>25</sup> Department of Finance, Demographic Research: City/County Population Estimates for January 2008. Accessed April 16, 2009. <<http://www.dof.ca.gov/Research/Research.php>>.

Plan Medium Low Density Residential land use designation for the project site. As such, the anticipated population growth generated by the project has been considered and accounted for in the 2007 ABAG growth projections. Further, the potential impacts associated with the facilitation of growth were analyzed within the City's General Plan EIR and found to be less than significant through the implementation of General Plan goals and policies which limit the annual number of residential allocations.<sup>26</sup>

Thus, as the project's generated population has been accounted for in future growth projections for the City and that the City's General Plan EIR determined that this growth rate would have a less-than-significant impact after the implementation of the General Plan goals and policies, the project would have a less-than-significant impact in regards to population growth. No mitigation is required.

**b) and c) Displace housing or people?**

**No Impact.** The project site is currently an unimproved field, with no buildings or structures. No housing units or businesses would be affected by the project, and no relocation would occur. Therefore, the project would not result in the displacement of any homes or businesses. No mitigation is required.

---

<sup>26</sup> The City's General Plan Policy 3.6.2a limits the issuance of development allocations to a maximum annual average of 600.

**XIII. Public Services**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:**

## **i) Fire protection impacts?**

**Potentially Significant Unless Mitigation Incorporated.** Fire protection services to the project site are provided by the Contra Costa County Fire Protection District (CCCFPD).

The service area of the CCCFPD is comprised of 257 square miles, extending from the City of Antioch in the east to the City of Richmond in the west and the Town of Moraga to the south.

The CCCFPD is comprised of 406 personnel, including 344 uniformed officers, 12 battalion chiefs, and 62 civilian personnel. Each station has a minimum of three personnel per engine company, including a Captain, engineer, and a firefighter. Station 88, located at 4288 Folsom Drive, is the closest CCCFPD facility to the project site, located approximately 2 miles north of the project site.<sup>27</sup>

Both the City and the CCCFPD have established response time goals for fire protection services. Performance Standard 3.5.2.2 of the Antioch General Plan requires that prior to the approval of discretionary development projects, the CCCFPD provide written verification that the project would not interfere with CCCFPD's ability to maintain a five-minute response time for 80 percent of all City emergency calls. CCCFPD's own response time goal for the District as a whole is five minutes for the 90<sup>th</sup> percentile of emergency calls.

Best-available data from CCCFPD indicates that neither of these standards are currently being achieved. CCCFPD states that across the District as a whole, it responds to 90 percent of emergency calls within 8 minutes and 30 seconds, well beyond its goal of 5 minutes. CCCFPD reports that its median response time for the entire district is 5 minutes, 7 seconds. The median measurement indicates that its response time for 50 percent of all calls district-wide take longer than 5 minutes and 7 seconds, while the remaining 50 percent of all calls district-wide would meet the 5 minute goal. This data also points to a reasonable conclusion that the District is not currently meeting the City's five-minute response time for 80 percent of all City emergency calls.

Following a review of project plans, CCCFPD concluded that the two closest stations to the project site would be able to respond to on-site emergencies in a range of 8 minutes, 15 seconds to 10 minutes. Therefore, under existing, without-project conditions, there is a need for new and/or expanded fire facilities in order to maintain acceptable response times. The project would thus incrementally worsen unacceptable existing conditions but the project would not itself result in substantial adverse physical impacts related to the construction of new or expanded fire facilities. The following mitigation measures would reduce the project's fire service impacts.

**Mitigation Measure XIII-1:** Prior to the issuance of occupancy permits, the City shall verify that the applicant has paid CCCFPD's fire facility impact fees, according to the fee schedule established by the CCCFPD. As of August 2009, these fees were \$591 per residential unit.

---

<sup>27</sup> Ted Leach, Fire Prevention Technician, CCCFPD. Personal Communication, March 5, 2009.

**Significance after Mitigation:** Less than significant. As fire facility impact fees were assessed at a district-wide level to determine the impact of new development relative to fire fighting infrastructure, payment of these fees represents appropriate project mitigation.

## ii) Police protection impacts?

**Less-than-Significant Impact.** Police services in the area are provided by the Antioch Police Department (APD). The APD employs **104** sworn personnel and is headquartered in the City's downtown, approximately 7 miles from the project site.<sup>28</sup>

The City's General Plan identifies a response time goal between seven and eight minutes for all Priority 1 calls for emergency services within the City.<sup>29</sup> The APD reports that the average response time for a Priority 1 call is seven minutes and 22 seconds, indicating that the APD is currently operating within the standards required by the City's General Plan.

The increase in population of approximately 356 individuals generated by the project (see **Section XII, Population and Housing**) would create additional demands for ~~police services~~ **less than one police officer, based on the General Plan staffing goal of 1.2 to 1.5 police officers per 1,000 individuals.**<sup>30</sup> According to the APD, ~~this increase~~ **the project** would require ~~the need for~~ **the creation of** one additional officer position **because the department does not fund fractions of positions.** This additional staffing would not entail the need for new or expanded physical facilities; the staffing increase could be accommodated within existing police facilities. Other than additional staffing, impacts to the provision of police services would be less than significant.<sup>31</sup> Funding for the employment of additional officers is allocated by the City, whose revenue is provided by the implementation of various local taxes, developer fees, and bond monies. **The project will also establish or participate in a land based financing mechanism to fund police services for the project. The financing mechanism will be in the form of a Community Facilities District (CFD) or other means acceptable to the City and the Developer. The financing mechanism will be established prior to the issuance of building permits for the first unit of the project.** No mitigation is required.

## iii) School impacts?

**Less-than-Significant Impact.** Public schools within the City are operated by the Antioch Unified School District (AUSD). However, certain sections of the City, including the project site, are served by the Brentwood Unified School District (BUSD) and the Liberty Union High School District (LUHSD). The BUSD serves elementary and middle school students K through 8th grade, while

---

<sup>28</sup> James Hyde, Chief of Police; and Allan Cantando, Captain, Antioch Police Department. Personal Communication, March 3, 2009.

<sup>29</sup> City of Antioch. (November 2003). *City of Antioch General Plan*. (Performance Objective 3.5.3.1)

<sup>30</sup> City of Antioch. (November 2003). *City of Antioch General Plan*. (Performance Objective 3.5.3.1)

<sup>31</sup> James Hyde, Chief of Police; and Allan Cantando, Captain, Antioch Police Department. Personal Communication, March 3, 2009.

the LUHSD serves high school students 9th through 12th grades. Students generated by the project would attend schools in the BUSD and LUHSD. **Table 4** identifies the closest BUSD and LUHSD schools to the project site. Students from the project site would likely attend the closest schools; however, these school districts have the ability to redirect school children to specific schools (potentially further away) in order to maximize the effectiveness of existing resources and facilities.

**Table 4. Nearby BUSD and LUHSD Schools**

School Name	School Address	Distance from Project Site (Approximate)
Pioneer Elementary School	2010 Shady Willow Lane	1 mile
Loma Vista Elementary School	2110 San Jose Avenue	1.5 miles
La Paloma High School	6651 Lone Tree Way	1.2 miles
Ron Nunn Elementary School	855 Minnesota Avenue	2.1 miles
Heritage High School	101 American Avenue	2.2 miles
William B Bristow Middle School	1755 Central Boulevard	2.3 miles
Adams Middle School	401 American Avenue	2.5 miles

Source: Google Earth Maps, 2009

The East Contra Costa Schools Transportation Department (Department) provides bus service for the LUHSD and BUSD. Contributions to busing costs are based on mileage and other criteria. Students who ride the bus pay the Department an annual fee to cover approximately 50 percent of the operational costs.

The Leroy F. Greene School Facilities Act of 1998, or Senate Bill 50 (SB 50), restricts the ability of local agencies to deny project approvals on the basis that public school facilities (classrooms, auditoriums, etc.) are inadequate. School impact fees are collected at the time when building permits are issued.

Pursuant to SB 50, the BUSD and the LUHSD collect school impact fees on each new square foot of residential construction within their respective districts.<sup>32</sup> Due to the fact that the project would be located within the BUSD and LUHSD, the project would be subject to the districts' school impact fees. Payment of school fees is considered full and complete mitigation of any school impacts. Thus, the project impact to schools is less than significant. No further mitigation is required.

<sup>32</sup> Wayne Reeves, LUHSD; and Gail Crockett, BUSD. Personal Communication, June 2008.

**iv) and v) Park and other public facility impacts?**

**Less-than-Significant Impact.** The increase in population of approximately 356 individuals generated by the project (see **Section XII, Population and Housing**) would create additional demands for parks and other public facilities near the project site. Libraries in Contra Costa County are provided by the Contra Costa County Library System, which operates 25 library facilities. The closest library branch would be the Oakley Library, located at 1050 Neroly Road, approximately 2 ¼-miles northeast of the project site.

The Contra Costa Library System is primarily funded by local taxes, and can be supplemented through awarded state bond acts and private donations. Funding for the employment of any additional staff, reading materials, and public education programs at the nearby libraries is allocated by the City, County, or State. As new development associated with the project would be subject to the local taxes and monies that contribute to these funds, project impacts would be considered less than significant and no mitigation is required.

Impacts to recreational facilities are further discussed in **Section XIV, Recreation**, below.

**XIV. Recreation**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**a) Increase use of existing facilities?**

**and**

**b) Include/require construction of new facilities?**

**Less-than-Significant Impact.** The increase in population generated by the project (see **Section XII, Population and Housing**) would create additional demands on existing recreational parks and trails near the project site, potentially resulting in an acceleration of physical deterioration of the facilities.

The City of Antioch has established a goal of having 5 acres of public parkland per 1,000 residents.<sup>33</sup> Under this standard, the project would be required to provide approximately 1.8 acres of parks to meet the demand associated with 356 new residents. While the project would include 1.7 acres of parks and open space areas, these areas would be private and maintained through an established homeowners association. Due to the private nature of these lands, the City does not include them in the computation of “public parkland” provided to achieve the City’s 5 acre per 1,000 people goal. In the absence of providing the appropriate amount of public parkland, the City permits applicants to pay an in-lieu fee. Pursuant to Resolution 2008/10 regarding City Council’s approval of the

<sup>33</sup> City of Antioch. (November 2003). *City of Antioch General Plan*. (Performance Standard 3.5.7.2.)

residential development allocation for the project, the project would contribute a total of \$1,640,000 towards three park projects, including projects at Williamson Ranch Park, Meadow Creek Park, and Prewett Park.

The Mokelumne Trail is located within an East Bay Municipal Utilities District (EBMUD) easement, but is maintained by the East Bay Regional Parks District (EBRPD). A substantial portion of the EBRPD funding sources comes from property taxes collected by the County and special revenue funds, including the Brentwood/Antioch/East County Lighting and Landscaping District (LLD). In 1991, the EBRPD formed the LLD to collect money in east Contra Costa County for funding of ongoing maintenance of EBRPD facilities. This LLD follows the boundaries of the Liberty Union High School District and includes the project site. As such the project would be subject to the payment of LLD fees on the order of \$19.71 per single family dwelling.<sup>34</sup>

Payment of the required City in-lieu parkland fees and payment of LLD fees would provide funding to purchase new parkland in the City and for the maintenance of existing facilities, respectively. Payment of these fees would reduce impacts associated with the potential increase in demands for parks and recreational facilities near the project site to a less-than-significant level. No mitigation is required.

---

<sup>34</sup> Linda Chavez, Senior Planner, EBRPD, Personal Communication, August 11, 2008.

**XV. Transportation and Traffic**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Information for this section is based on data provided in the Tierra Villas Subdivision Project Traffic Impact Analysis prepared by Omni-Means, Ltd., dated June 2009, **and an addendum to that report dated May 20, 2011.** The report in its entirety is included as **Appendix G.**

## *Project Setting*

### *Regional Access*

Regional access to the project site is provided by the State Route 4 (SR4) Bypass and SR4. The SR4 Bypass project (Segments 1, 2, and 3) extends from existing SR4 east of Hillcrest Avenue interchanges in the City to Marsh Creek Road in the City of Brentwood. SR4 provides access east to Stockton (and beyond) and west to the cities of Antioch, Oakley, Pittsburg, Concord, and Hercules.

In the project vicinity, the SR4 Bypass extends in a north-south direction. A full southbound on-and-off-ramp intersection is provided at Lone Tree Way. On the east side of the SR4 Bypass, a northbound on-ramp is provided at the intersection of Lone Tree Way and Jeffery Way. However, no eastbound left-turn lanes are provided from Lone Tree Way onto the SR4 Bypass northbound on-ramp. As such, motorists wishing to access the SR4 Bypass in a northbound direction travelling eastbound on Lone Tree Way must use Jeffery Way to access the northbound ramp.

### *Local Access*

The following roadways provide local access to the project site.

- **Hillcrest Avenue** extends in a north-south direction between Lone Tree Way and Prewett Ranch Drive, just west of the project site. In this segment, Hillcrest Avenue is a four-lane arterial street with raised, landscaped medians, left-turn storage lanes, Class II<sup>35</sup> bike lanes, and pedestrian sidewalks. As a limited access roadway, no vehicle parking is allowed in this segment. Hillcrest Avenue provides access to residential and recreational areas south of Lone Tree Way. North of Lone Tree Way, the roadway extends in the same configuration and provides access to both commercial and residential areas.
- **Prewett Ranch Drive** begins west of Dallas Ranch Road and extends through Hillcrest Avenue to the western boundary of the project site where it terminates. Between Hillcrest Avenue and Cedar Point Way, there is a raised landscaped median. Street parking is prohibited in the portions of Prewett Ranch Drive that include the median. From Cedar Point Way to Summerfield Road, Prewett Ranch Drive is a 40 foot wide, two-lane residential collector street with on-street parking. If extended from its present terminus to Heidorn Ranch Road, Prewett Ranch Drive would provide direct access to the project site.
- **Heidorn Ranch Road** extends in a north-south direction between Lone Tree Way and Old Sand Creek Road. Between Lone Tree Way and Lone Tree Plaza Drive, Heidorn Ranch Road is a four-lane arterial street with raised, landscaped medians, left-turn storage lanes,

---

<sup>35</sup> Bicycle facilities within the City can be described as one of three different trail classification: (Class I) a bike path which provides a completely separate right-of way for the exclusive use of bicyclists and pedestrians; (Class II) a bike lane which provides clearly marked signage and pavement striping for one-way bicycle travel on a roadway; and (Class III) a bike route which provides shared use with pedestrians or motor vehicle traffic and is clearly marked by signs.

Class II bike lanes, and pedestrian sidewalks and/or pedestrian paths. In this area, the roadway provides access to residential and retail-commercial uses. South of Lone Tree Plaza Drive, Heidorn Ranch Road narrows to two travel lanes and provides access to institutional (church/school), residential, and agricultural uses. North of Lone Tree Way, Fairside Way forms the southbound approach leg of the Lone Tree Way/Heidorn Ranch Road intersection, and provides access to residential homes in this area. Heidorn Ranch Road provides direct access to the project site.

- **Lone Tree Way** is a four- to six-lane major arterial street that extends in an east-west direction north of the project site. At Heidorn Ranch Road, Lone Tree way has three eastbound travel lanes and two westbound travel lanes. The roadway narrows to four travel lanes east of the SR4 Bypass. Similar to other arterial streets, Lone Tree Way has raised landscaped medians, left-turn storage lanes, a Class I bike path (north side), and pedestrian sidewalks/paths. Lone Tree Way provides access between the City and Brentwood and acts as an alternative commute route to SR4.
- **Lone Tree Plaza Drive** starts approximately ¼ mile south of Lone Tree Way, and extends east from Heidorn Ranch Road. The street provides access to commercial-retail areas northeast of the project site. As a four-lane roadway, Lone Tree Plaza Drive has limited access and limited turn lanes at retail access driveways. Pedestrian sidewalks are discontinuous on its north side, and there are no pedestrian facilities on its south side.
- **Kohl's Drive** is a two-lane driveway that intersects with Heidorn Ranch Road northeast of the project site. Kohl's Drive starts about 660 feet south of Lone Tree Way and extends east from Heidorn Ranch Road to commercial-retail areas.
- **Canada Valley Road** is a north-south, two-lane collector street that provides access primarily to residential areas north of Lone Tree Way. In the vicinity of the project site, this roadway has Class II bike lanes and pedestrian paths/sidewalks. South of Lone Tree Way, Canada Valley Road provides access to the Lone Tree Plaza shopping center. The roadway widens in this area to allow for increased traffic flow and multiple turn lanes, and also includes a speed hump to slow southbound vehicles entering the commercial center.
- **Jeffery Way** is a north-south arterial street located east of the SR4 Bypass that provides access to commercial and institutional uses. As a limited access roadway with four travel lanes and raised landscaped medians, Jeffery Way extends south from Lone Tree Way to provide full northbound on-off access (via hook ramps) to the SR4 Bypass.
- **Vista Grande Drive** extends between Hillcrest Avenue and Lone Tree Way and is a wide, two-lane residential collector street with limited access and no street parking. Providing access to residential neighborhoods located west of the project site, Vista Grande Drive has pedestrian sidewalks and Class II bike lanes.

- **Summerfield Drive** is a north-south, two-lane residential street that is located immediately west of the project site. Extending between Prewett Ranch Drive and Vista Grande Drive, Summerfield Drive provides access to residential areas and has on-street parking and pedestrian sidewalks.

#### *Existing Transit Facilities*

Bus transit in the project study area is provided by Tri Delta Transit (TDT). Buses operate weekdays and weekends with limited Holiday service. Four TDT routes serve the project area:

- **TDT Route 380** Pittsburg Bart/Antioch: This route extends between the Pittsburg Bay Point BART Station and the Hillcrest Park and Ride. In the vicinity of the project site, bus stops are located on Lone Tree Way at Hillcrest Avenue, Vista Grande, Heidorn Ranch Road, and Canada Valley Way. Headways are every 30-45 minutes with operation on the weekdays only.
- **TDT Route 383** Antioch Park and Ride (Hillcrest)/Oakley: This route follows Lone Tree Way. It connects the Antioch park and ride lot on north side of SR4 at Hillcrest Avenue with the City of Oakley. In the vicinity of the project site, bus stops are located on Lone Tree Way at Hillcrest Avenue, Vista Grande, and Heidorn Ranch Road. Headways are approximately every hour with operation on weekdays only.
- **TDT Route 384** Brentwood: This route extends between the Brentwood Park and Ride on Dainty Avenue and Balfour Road-American Avenue. In the vicinity of the project site, bus stops are located on Sand Creek Road east of the SR4 Bypass with headways every 45-60 minutes during the weekday periods only.
- **TDT Route 385** Antioch-Brentwood (via Hillcrest): This route extends between the Brentwood Park and Ride and the Antioch Park and Ride. In the vicinity of the project site, bus stops are located on Lone Tree Way and Hillcrest Avenue with headways every 60 minutes during the weekday periods only.
- **TDT Route 392** Pittsburg BART/Antioch Park and Ride: This route extends between the Antioch Park and Ride and the Pittsburg/Bay Point BART Station. In the vicinity of the project site, bus stops are located on Hillcrest Avenue at Lone Tree Way with headways every 60 minutes during the weekend and holiday periods only.

#### *Bicycle and Pedestrian Facilities*

Existing bicycle and pedestrian facilities in the vicinity of the project site are comprised of sidewalks, pedestrian crosswalks, signalized intersections, and Class I and II bike lanes. Class II bike lanes in the immediate vicinity of the project site are currently striped on Heidorn Ranch Road, Prewett Ranch Drive (west of Cedar Point Way), Hillcrest Avenue, and Vista Grande Drive. Sidewalks and/or paths are present on all of these same roadways.

The Mokelumne Trail is the major Class I bicycle/pedestrian trail in the immediate vicinity of the project site. The Mokelumne Trail extends in a northwest-southeast direction through the City and is located adjacent to the north of the project site. The trail intersects Heidorn Ranch Road, just south of Lone Tree Plaza Drive. There is no "official" or marked trail crossing at this location on Heidorn Ranch Road due to a raised median. Pedestrians and bicyclists using the trail must cross the roadway 100 feet to the north at the Lone Tree Plaza Drive intersection where pedestrian crosswalks are located. A Class I bike path is also located along Lone Tree Way.

### Significance Criteria

In addition to the criteria set forth in Appendix G of the CEQA Guidelines (included in the checklist above), the City uses the following criteria to determine if a project would have a significant impact relative to traffic.

- **Intersection Level of Service:** A significant impact occurs if intersection Level of Service (LOS) degrades from an acceptable level. In the City, the acceptable level is LOS D or better, with a volume to capacity ratio no greater than 0.85. Unacceptable traffic levels occur when the volume to capacity ratio exceeds 0.85.
- **Intersection Average Delay:** For intersections already operating at unacceptable levels, a significant impact would occur when the volume/capacity ratio at such an intersection increased by more than 0.01, or if the average vehicle delay at such an intersection increased by more than 3 seconds.
- **Roadway Segments:** A significant impact would occur if the roadway delay index<sup>36</sup> deteriorates below 2.0.
- **Physical Facilities:** A significant impact would occur if existing turn pockets in the project vicinity were not sufficiently long to accommodate additional project traffic.
- **Emergency Access:** A significant impact would occur if vehicle access to the project site were inadequate.
- **Internal Circulation:** A significant impact would occur if the internal circulation of the project site were not adequate to accommodate pedestrians and bicyclists.

### Existing and Baseline Operations at Study Intersections

Per the direction of the City Engineering and Planning staff, the traffic impact analysis evaluated potential traffic impacts at 13 existing and future study intersections. **Table 5** identifies the location and type of each intersection, and the existing LOS/traffic delay. As shown in **Table 5**, all existing

---

<sup>36</sup> "Delay index" compares allowable, posted speeds for a roadway segment (speed limits) with actual, measured average travel speeds for the segment. Where actual average travel speeds are below posted speed limits, the delay index would be greater than 1.0.

study intersections are currently operating acceptably for both the AM and PM peak commute hours. In the City, the morning peak period is 7:00 a.m. – 9:00 a.m., and the afternoon peak period is 4:00 p.m. – 6:00 p.m.

**Table 5** also identifies the LOS at the study intersections taking into account both existing and approved/pending projects (discussed below). For the purposes of this analysis, the term ‘baseline’ conditions refers to the level of traffic associated with existing plus approved/pending projects (not including the Tierra Villas project). As calculated, all intersections are operating at acceptable conditions during both AM and PM peak commute hours.

The “baseline” LOS was computed for existing traffic with the inclusion of traffic from approved/pending projects. Based on discussions with the City Engineering and Planning staff at the cities of Antioch and Brentwood, the list of approved/pending projects, shown in **Table 6**, were factored into the traffic impact analysis.

Based on discussions with the City Engineering and Planning staff at the cities of Antioch and Brentwood, planned roadway improvements in the vicinity of the project site include both freeway and arterial/intersection improvements that are expected to be completed by Year 2011. Based on the recent traffic analysis performed for the Aviano Adult Community Project (located to the southwest of the project), near-term planned circulation improvements have been listed as follows (updated to include recent completion of specific circulation projects):<sup>37</sup>

- Hillcrest Avenue would be extended south from Prewett Ranch Drive to Sand Creek Road;
- The programmed interchange for the SR 4 Bypass at Sand Creek Road would be completed; and
- The recently installed signal at the Hillcrest Avenue/Prewett Ranch Drive intersection would be activated from existing all red flash mode to standard vehicle actuated signal control.

The intersection of Hillcrest Avenue/Lone Tree Way is programmed for the following circulation improvements:

- A second new (dedicated) southbound left-turn lane from southbound Hillcrest Avenue onto eastbound Lone Tree Way with a storage length of 855 feet. This would create dual left-turn lanes;
- The existing southbound left-turn lane on Hillcrest Avenue would be lengthened to 600 feet of storage length; and
- The existing southbound shared through/left-turn lane on Hillcrest Avenue would be converted to a through-lane.

---

<sup>37</sup> LSA Associates, Inc. (November 2008). *Aviano Adult Community Project Draft EIR*.

**Table 5. Existing and Baseline LOS Conditions at Study Intersections**

Intersection	Control Type	AM Peak (7:00 a.m. – 9:00 a.m.)				PM Peak (4:00 p.m. – 6:00 p.m.)			
		Existing		Baseline		Existing		Baseline	
		LOS	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio
1 Hillcrest Ave./Lone Tree Way	Signal	A	0.38	B	0.63	A	0.44	C	0.73
2 Vista Grande/Lone Tree Way	Signal	A	0.27	A	0.36	A	0.38	A	0.51
3 Heidorn Ranch Rd./Lone Tree Way	Signal	A	0.23	A	0.30	A	0.34	A	0.44
4 Canada Valley Way/Lone Tree Way	Signal	A	0.36	A	0.52	A	0.50	B	0.66
5 SR4 Bypass EB on-off ramp/Lone Tree Way	Signal	A	0.43	A	0.51	A	0.50	B	0.66
6 SR4 Bypass WB on-ramp/Lone Tree Way/Jeffery Way	Signal	A	0.33	A	0.39	A	0.43	A	0.55
7 Hillcrest Ave./Prewett Ranch Dr.	Signal	A	0.11	A	0.29	A	0.10	A	0.20
8 Heidorn Ranch Rd./Kohl's Dr.	Signal	A	0.04	A	0.04	A	0.09	A	0.09
9 Heidorn Ranch Rd./Lone Tree Plaza Dr.	Signal	A	0.03	A	0.03	A	0.02	A	0.02
10 Heidorn Ranch Rd./Project St. B <sup>A</sup>	TWSC	---	---	---	---	---	---	---	---
11 Heidorn Ranch Rd./Prewett Ranch Dr. <sup>A</sup>	TWSC	---	---	---	---	---	---	---	---
12 Prewett Ranch Dr./Project St. D <sup>A,38</sup>	TWSC	---	---	---	---	---	---	---	---
13 SR4 Bypass WB On-Off Ramp/Jeffery Way	Signal	A	0.16	A	0.25	A	0.17	A	0.30

Source: Omni-Means, 2009

Notes: EB = Eastbound; WB = Westbound; TWSC = Two-Way Stop Control

A. Intersection Nos. 10, 11, and 12 are future project-related intersections included in the traffic impact analysis.

<sup>38</sup> The Traffic Impact Analysis, prepared in June 2009, evaluated the site access from Prewett Ranch Drive based on site plans drafted in June 2008. The Traffic Impact Analysis assumed access to the project site from the extension of Prewett Ranch Drive, under both alternatives, would be provided at an intersection with Street A. However, due to a refinement in the design of the two alternatives (Prewett Ranch Drive Alternative A and Prewett Ranch Drive Alternative B), access to the project site from the extension of Prewett Ranch Drive would be provided as an intersection with Street D. As the size, type, and form of this access point has not changed, with the exception of its location further east and connection to Street D, it is reasonable to assume that traffic impacts at this intersection would remain the same as evaluated in the Traffic Impact Analysis. For the purposes of this Initial Study, Intersection 12 has been modified to read “Prewett Ranch Drive/Street D” rather than “Prewett Ranch Drive/Street A”, as in the Traffic Impact Analysis.

**Table 6. Approved and Pending Projects**

<b>Project Name</b>	<b>Project Location</b>	<b>Size</b>	<b>Status</b>
<b>Within the City of Brentwood <sup>A</sup></b>			
Streets of Brentwood	E of SR4, S of Sand Creek	460 ksf	Approved
Alexandra Homes	N side of Sand Creek, W of Fairview	35 DU	Approved
Lone Tree Crossings	N of Lone Tree, E of Windy Springs	117 ksf	Approved
Carmel Estates	E of Minnesota, N of Randy Way	102 DU	Approved
Terreno Homes	N of Sand Creek, E of railroad tracks	141 DU	Approved
Bridle Gate	W of SR 4, S of Sand Creek	166 DU	Approved
Blackhawk Nunn Cox Property	W of SR4, N of Balfour	64 DU	Approved
Amber Park	S of Lone Tree, E of Empire	98 DU	Approved
Shady Willow Plaza	S of Lone Tree, E of Shady Willow	30 ksf	Approved
Brighton Station	E of SR 4, N of Sand Creek	107 DU	Approved
Tingdahl	S of Lone Tree, W of Shady Willow	2 DU	Approved
St. Martin's Place	E of SR 4, S of Grant Street	6 DU	Approved
H. Sino Fairview Avenue	S of Lone Tree, W of Fairview	9 DU	Approved
Prewett Ranch	E of SR 4, N of Grant Street	236 DU	Approved
Casa Bella Apts.	E of SR4, E of Jeffery Way	120 DU	Pending
Grant Street	E of SR 4, S of Grant Street	3 DU	Approved
Amber & Windy Spring Lns.	E of SR 4, N of Grant Street	4 DU	Approved
Windy Springs Estates	E of SR 4, N of Grant Street	4 DU	Approved
Cornerstone Church	E of Empire, S of Lone Tree Way	65 ksf	Pending
Tri City Office Plaza	E of Fairview, S of Lone Tree Way	11 ksf	Pending
Red Robin	E of SR 4, N of Sand Creek	6 ksf	Approved
Streets of Brentwood	E of SR 4, N of Sand Creek	460 ksf	Approved
<b>Within the City of Antioch <sup>B</sup></b>			
Dear Valley Estates	Deer Valley Road, N of Kaiser	136 DU	Approved
Hidden Glen	E of Hillcrest at Hidden Glen	89 DU	Approved
Meadow Creek Village	Lone Tree Way	97 DU	Approved
Nelson Ranch	E of Hillcrest at Wild Horse Rd.	360 DU	Approved
Park Ridge	Canada Valley Road	562 DU	Pending
Aviano Senior Housing	S of Prewett Ranch Rd, E. of Hillcrest	535 DU	Approved
Renaissance at Bluerock	Bluerock at Lone Tree Way	86 SFD	Approved
Roddy Ranch	W of Deer Valley, S of Empire Mine	574 DU	Pending
Sand Creek Adult Community	Empire Mine Rd.	1500 DU	Approved

Project Name	Project Location	Size	Status
<b>Within the City of Antioch (continued)</b>			
Sand Creek Ranch	N of Lone Tree Way at Canada Valley	159 DU	Approved
Sand Creek Ranch Rivergate	N of Lone Tree Way at Canada Valley	216 DU	Approved
Bank of Agriculture	Country Hills at Lone Tree Way	2.4 acres	Approved
Deer Valley Business Parcels	Deer Valley at County Hills	16 DU	Approved
Deer Valley Business Park	Deer Valley at County Hills	35 ksf	Approved
Kaiser Medical Center	Deer Valley Road	297 ksf	Approved
Lone Tree Landing	Lone Tree Way at Hillcrest	389 ksf	Approved
Walmart Expansion	Lone Tree Way at Hillcrest	34 ksf	Pending

Source: Omni-Means, 2009

<sup>A</sup> City of Brentwood, Project Status Report, Residential and Commercial Projects (December 19, 2008)

<sup>B</sup> City of Antioch Project Pipeline, Residential and Commercial Projects (As of February 19, 2010)

With the programmed completion of the SR4 Bypass/Sand Creek Road interchange, the following circulation improvements would be in place at the southbound and northbound ramp intersections:

*SR 4 Bypass Southbound Ramps/Sand Creek Road*

- In the eastbound direction, Sand Creek Road would have two (2) through lanes and a separate right-turn lane (100 feet of storage) to access the SR4 Bypass in the southbound direction;
- The southbound SR4 Bypass off-ramp would have one (1) left-turn lane with 325 feet of storage, one (1) shared left/through/right-turn lane, and one (1) separate right-turn lane; and
- Westbound Sand Creek Road would have two travel lanes.

*SR 4 Bypass Northbound Ramps/Sand Creek Road*

Eastbound Sand Creek Road would have two (2) left-turn lanes with 100 feet of storage providing access onto northbound SR4 Bypass and two through-lanes;

- The northbound SR 4 Bypass off-ramp would have one (1) left-turn lane with 200 feet of storage, one (1) shared left/through/right-turn lane, and one (1) separate right-turn lane with 225 feet of storage length; and
- In the westbound direction, Sand Creek Road would have two (2) through lanes and a separate right-turn lane (350 of storage) to access the SR4 Bypass in the northbound direction.

All remaining near-term circulation improvements have been completed in the project vicinity along Lone Tree Way and the SR4 Bypass and are reflected under existing traffic flow conditions/operations.

Project Impacts

a) **and b) Cause a substantial traffic increase/exceed level of service standard individually or cumulatively?**

**Potentially Significant Unless Mitigation Incorporated.** Traffic forecasts for the project were based on trip generation rates found in the Institute of Transportation Engineers (ITE) trip research manual for single-family detached units.<sup>39</sup> Vehicle trip generation for the project was disaggregated by daily vehicle trips and "peak hour" vehicle trips. Daily trips are the total vehicle trips generated by the project over a 24-hour period. Peak hour trips are generated during the busiest hours of the AM (7:00-9:00 a.m.) and PM (4:00-6:00 p.m.) commute periods when weekday traffic is significant. Daily and peak hour project trip generation is shown in **Table 7**. The project is expected to generate 1,101 daily trips with 86 AM peak hour trips and 116 PM peak hour trips, under both alternatives.

**Table 7. Project Trip Generation – Daily and Peak Hour**

Trip Rates/Land Use	Daily Trips	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Single-Family Detached Housing Rates	9.57	0.19	0.56	0.75	0.64	0.37	1.01
New Daily and Peak Hour Trips (based on 115 Single-Family DU)	1,101	22	64	86	73	43	116

Source: Omni-Means, 2009.

AM and PM peak hour project trips were distributed onto the street network based on previous transportation studies performed for residential development in the cities of Antioch and Brentwood.<sup>40, 41</sup> Consideration was also given to freeway access to and from the SR4 Bypass, project street locations (in/out movements on Heidorn Ranch Road and Prewett Ranch Drive), and adjacent residential and commercial areas located to the west and east of the project site. Approximately 45 percent of the project's traffic would be to and from the SR-4 Bypass and the remaining 55 percent on adjacent roadways in the City and Brentwood.

Baseline Plus Project Intersection Operations

As discussed in the Project Description, the project includes the extension of Prewett Ranch Drive to the access road between lots 10 and 11. If and when the property to the south is developed, Prewett Ranch Drive would be further extended, either all of the way to Summerfield Drive

<sup>39</sup> Institute of Transportation Engineers (ITE), Trip Generation. (2008). 8th Edition, Single-Family Detached Housing (land use #210).

<sup>40</sup> CirclePoint, (January 2009). *Roddy Ranch Project Draft EIR*.

<sup>41</sup> Abrams Associates. (March 2008). *Traffic Impact Analysis, Casa Bella Apartments, City of Brentwood*.

(Prewett Ranch Drive Alternative A) or to a bulb intersection south of lots 17 and 18 (Prewett Ranch Drive Alternative B). For the purposes of helping the City to decide between Prewett Ranch Drive Alternative A and Prewett Ranch Drive Alternative B, the traffic analysis examined impacts for both ultimate build-out scenarios for this roadway.

#### *Prewett Ranch Drive Alternative A*

Prewett Ranch Drive Alternative A would allow existing east-west through-vehicle access from neighboring residential and commercial areas as well as proposed project trip access. To calculate the amount of existing traffic that could divert onto the new Prewett Ranch Drive extension, the east-west traffic traveling through the intersections of Hillcrest Avenue/Prewett Ranch Drive, Hillcrest Avenue/Lone Tree Way, and Vista Grande/Lone Tree Way was evaluated. As shown in **Table 8**, under Prewett Ranch Drive Alternative A, all study intersections would operate at acceptable levels.

#### *Prewett Ranch Drive Alternative B*

As previously discussed, under Prewett Ranch Drive Alternative B, a cul-de-sac on Prewett Ranch Drive would prohibit through-vehicle access to the existing terminus east of Summerfield Drive. There would be no through-vehicle access permitted. As shown in **Table 8**, under Prewett Ranch Drive Alternative B, all study intersections would operate at acceptable levels.

In summary, intersection operation under Baseline Plus Project conditions would have a less-than-significant impact at all study intersections along Heidorn Ranch Road, Hillcrest Avenue, and Lone Tree Way.

#### *Project Effects on Mainline SR4 Bypass Operations*

Under both alternatives, the project would add to AM and PM peak hour directional volumes on the SR4 Bypass dependent on the overall distribution of vehicle trips to and from the site. During the PM peak hour, this would equate to 29 project trips north of Lone Tree Way (11 westbound, 18 eastbound) and 24 project trips south of Lone Tree Way (9 eastbound, 15 westbound). Based on available CCTA Decennial Model projections for the SR4 Bypass, the facility is carrying approximately 2,431 vehicles in the westbound direction and 3,107 vehicles in the eastbound direction at Lone Tree Way. The project would add less than one (1) percent to these overall volumes. Based on a four-lane facility west of Lone Tree Way, the addition of project trips would be less than significant assuming 2,000 passenger cars per hour per lane, yielding an LOS capacity of B (0.61 seconds of delay) for westbound traffic and LOS C (0.78 seconds of delay) for eastbound traffic.

**Table 8. Baseline Plus Project LOS Conditions at Study Intersections**

Intersection	Control Type	Prewett Ranch Drive Alternative A								Prewett Ranch Drive Alternative B								
		AM Peak (7:00 a.m. – 9:00 a.m.)				PM Peak (4:00 p.m. – 6:00 p.m.)				AM Peak (7:00 a.m. – 9:00 a.m.)				PM Peak (4:00 p.m. – 6:00 p.m.)				
		Baseline		Baseline Plus Project		Baseline		Baseline Plus Project		Baseline		Baseline Plus Project		Baseline		Baseline Plus Project		
		LOS	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	
1	Hillcrest Ave./Lone Tree Way	Signal	B	0.63	B	0.63	C	0.73	C	0.72	B	0.63	B	0.63	C	0.73	C	0.74
2	Vista Grande/Lone Tree Way	Signal	A	0.36	A	0.34	A	0.51	A	0.45	A	0.36	A	0.37	A	0.51	A	0.52
3	Heidorn Ranch Rd./Lone Tree Way	Signal	A	0.30	A	0.30	A	0.44	A	0.49	A	0.30	A	0.31	A	0.44	A	0.47
4	Canada Valley Way/Lone Tree Way	Signal	A	0.52	A	0.52	B	0.66	B	0.66	A	0.52	A	0.52	B	0.66	B	0.66
5	SR4 Bypass EB on-off ramp/Lone Tree Way	Signal	A	0.51	A	0.52	B	0.66	B	0.67	A	0.51	A	0.52	B	0.66	B	0.67
6	SR4 Bypass WB on-ramp/Lone Tree Way/Jeffery Way	Signal	A	0.39	A	0.39	A	0.55	A	0.55	A	0.39	A	0.39	A	0.55	A	0.55
7	Hillcrest Ave./Prewett Ranch Dr.	Signal	A	0.29	A	0.28	A	0.20	A	0.21	A	0.29	A	0.29	A	0.20	A	0.21
8	Heidorn Ranch Rd./Kohl's Dr.	Signal	A	0.04	A	0.07	A	0.09	A	0.12	A	0.04	A	0.06	A	0.09	A	0.11
9	Heidorn Ranch Rd./Lone Tree Plaza Dr.	Signal	A	0.03	A	0.06	A	0.02	A	0.05	A	0.03	A	0.05	A	0.02	A	0.03
10	Heidorn Ranch Rd./Project St. B	TWSC	---	---	A	9.4 <sup>^</sup>	---	---	A	9.7 <sup>^</sup>	---	---	A	9.1 <sup>^</sup>	---	---	A	9.0 <sup>^</sup>
11	Heidorn Ranch Rd./Prewett Ranch Dr.	TWSC	---	---	A	8.8 <sup>^</sup>	---	---	A	8.8 <sup>^</sup>	---	---	A	8.5 <sup>^</sup>	---	---	A	8.5 <sup>^</sup>
12	Prewett Ranch Dr./Project St. D	TWSC	---	---	A	9.1 <sup>^</sup>	---	---	A	9.6 <sup>^</sup>	---	---	A	8.5 <sup>^</sup>	---	---	A	8.6 <sup>^</sup>
13	SR4 Bypass WB on-off ramp/Jeffery Way	Signal	A	0.25	A	0.25	A	0.30	A	0.31	A	0.25	A	0.25	A	0.30	A	0.31

Source: Omni-Means, 2009

Notes: EB = Eastbound; WB = Westbound; TWSC = Two-Way Stop Control

<sup>^</sup> TWSC LOS criteria based on delay in seconds

### Project Access/Internal Circulation

Under both alternatives, vehicle access to the proposed project site would be from two new intersections of Heidorn Ranch Road (Street “B” and Prewett Ranch Drive). All of the proposed single-family units that would be located along the new portion of Prewett Ranch Drive would face away from the roadways and could only be accessed from internal project streets. **As shown in Figure 2a and Figure 2b, Street “B” would provide right-in, right-out only access from Heidorn Ranch Road, while the Prewett Ranch Drive intersection would allow both right and left turning movements.**

Under both alternatives, an access intersection from Prewett Ranch Drive to project Street “D” would be provided between Lots 10 and 11, providing access to units along the southern boundary of the project site. Project Street “B” would extend west from Heidorn Ranch Road providing access to units located in the northern and western half of the project site. Other internal project streets (Street “A” and Street “C”) would extend north-south linking with the main project access streets. The internal width of the project streets would range from 32-36 feet and vehicle parking would be allowed on one side of the street (opposite driveway access). In the northwest portion of the project site, a cul-de-sac would be located at the northern end of Street “C” and could provide a potential pedestrian/bicycle connection to the existing Mokelumne Trail north of the project site. In the southwest portion of the project site, a cul-de-sac would be located at the southern end of Street “A.” Overall, vehicle circulation within the site would be acceptable under both alternatives.

### Cumulative Year 2030 Traffic Conditions

Cumulative Year 2030 traffic conditions were evaluated based on the review of the following two sources:

- Year 2030 AM and PM peak hour traffic projections supplied by Contra Costa Transportation Authority; and
- Future traffic projections from the Aviano Adult Community Draft EIR (DEIR).

As the City’s General Plan designates the project site as “planned development” for Medium-Low Density Residential (6 du/acre), the project was included as part of the Aviano Adult Community DEIR Year 2030 traffic projections. Therefore, Year 2030 traffic conditions from this DEIR reflect the expected overall development in the City, plus Brentwood and Oakley areas, including the proposed project’s land uses. In order to produce a Year 2030 Cumulative (no project) scenario for the project, peak hour project trips were subtracted from the Aviano Adult Community DEIR Year 2030 cumulative traffic projections. **Year 2030 conditions include several planned improvements that are listed in the traffic impact analysis. The planned improvements include the planned extension of Sand Creek Road from the SR-4 Bypass west through Hillcrest Avenue, and a full-access interchange (diamond/partial cloverleaf) at SR-4/Sand**

**Creek Road. Based on this future configuration, the cumulative analysis includes a redistribution of project trips such that 20% of the project-generated traffic that accesses the site from the northerly SR-4/Lone Tree Way interchange would instead access the site via the SR-4/Sand Creek Road interchange and Heidorn Ranch Road.**

With Year 2030 Cumulative (no project) traffic volumes derived from the Aviano Community DEIR, the following five study intersections would operate at unacceptable LOS conditions during the AM and PM peak hours:

- Intersection #1: Hillcrest Avenue/Lone Tree Way
- Intersection #3: Heidorn Ranch Road/Lone Tree Way
- Intersection #4: Canada Valley Road/Lone Tree Way
- Intersection #5: SR 4 Bypass EB Ramps/Lone Tree Way
- Intersection #6: SR 4 Bypass WB Ramp/Lone Tree Way/Jeffery Way

Proposed project AM and PM peak hour trips were added into Year 2030 cumulative (no project) volumes to determine if significant impacts could be expected under Prewett Ranch Drive Alternative A or Prewett Ranch Drive Alternative B conditions. Project specific impacts to the Year 2030 conditions were based on both the City's significance criteria as well CCTA guidelines.

Under both Alternatives A and B, the proposed project would contribute enough vehicle trips to cause a significant cumulative impact at the following two intersections:

- Intersection #1: Hillcrest Avenue/Lone Tree Way
- Intersection #3: Heidorn Ranch Road/Lone Tree Way

The intersections of Hillcrest Avenue/Lone Tree Way and Heidorn Ranch Road/Lone Tree Way would operate at an unacceptable level with Year 2030 cumulative (no project) traffic. The addition of proposed project traffic would further degrade operating conditions at these intersections, causing significant impacts. The **Mitigation Measures XV-1** and **XV-2** below would reduce such impacts to a less-than-significant level.

#### Mitigation Measures

**Mitigation Measure XV-1:** The project applicant shall contribute a fair share towards the installation of a second westbound left-turn lane at the intersection of Hillcrest Avenue and Lone Tree Way. Project traffic would equate to less than 1 percent of the traffic volumes at this intersection or 25 to 47 project trips, depending on the alternative selected. Recommended improvements could involve obtaining additional right-of-way.

The project shall contribute its fair share towards the cost of these improvements via a

transportation mitigation fund that will be used by the City to ensure timely completion of the required improvements. Future development within the Sand Creek Focus Area and other projects determined to adversely affect this intersection will also be assessed a fair share of the estimated cost. The fair share amount will be developed in consideration of the “proportional fair share” this project contributes in traffic impacts to this intersection and other factors considered relevant in development of the mitigation fund. The City expects that sufficient funding will be accrued to allow programming of these improvements in the CIP by 2020 and completion of these improvements by 2025. With this improvement, the intersection would operate at an "acceptable threshold" and project impacts would be less than significant.

**Mitigation Measure XV-2:** The project applicant shall contribute a fair share towards the re-striping of the westbound Lone Tree Way approach at the Heidorn Ranch Road/Lone Tree Way intersection to include two (2) left-turn lanes, three (3) through-lanes, and one (1) separate right-turn lane. Project traffic would equate to about 1-2 percent of the traffic volumes at this intersection or 81 to 111 project trips, depending on the alternative selected.

The project shall contribute its fair share towards the cost of these improvements via a transportation mitigation fund that will be used by the City to ensure timely completion of the required improvements. Future development within the Sand Creek Focus Area and other projects determined to adversely affect this intersection will also be assessed a fair share of the estimated cost. The fair share amount will be developed in consideration of the “proportional fair share” this project contributes in traffic impacts to this intersection and other factors considered relevant in development of the mitigation fund. The City expects that sufficient funding will be accrued to allow programming of these improvements in the CIP by 2030 and completion of these improvements by 2035. With this improvement, the intersection would operate at LOS D (0.81) during the PM peak hour and project impacts would be less than significant.

**Significance after Mitigation:** The implementation of **Mitigation Measures XV-1 and XV-2** would bring the intersections of Hillcrest Avenue/Lone Tree Way and Heidorn Ranch Road/Lone Tree way to acceptable LOS operation under the Year 2030 Cumulative Conditions. No further mitigation is required.

**c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?**

**No Impact.** There are neither public nor private air transportation facilities within 5 miles of the project site. The nearest airports are Funny Farm Airport, a private airstrip located approximately 6 miles east of the project site, and Byron Airport, a small public airport located approximately 15 miles southeast of the project site. These airports typically handle small aircraft. Additionally, the project site is outside of any identified landing or noise-impacted zone associated with either airport. The project would thus have no impact to air traffic patterns. No mitigation is required.

d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

**Potentially Significant Unless Mitigation Incorporated.** Based on projected traffic volumes at the two external project study intersections on Prewett Ranch Drive and Heidorn Ranch Road, minimum turn lane improvements would be required for safe vehicle operation and pedestrian access within the project site. Although the project intersections along Heidorn Ranch Road (Street B and Prewett Ranch Drive) would operate acceptably in both the near-term and cumulative scenarios, the traffic study clarified the optimal lane geometry for these intersections given the projected traffic volumes.

Following publication of the draft MND, additional traffic analysis was prepared in 2011 to confirm the optimal lane geometry given the extension of the raised median in Heidorn Ranch Road along the project frontage. As noted in the draft MND, the extension would require Street B to be right-in/right-out only, and would also prevent left turn access out of the Heritage Baptist Church and Academy located immediately north of the project site. The subsequent analysis confirmed that the project intersections would continue to operate acceptably. The addendum to the traffic study documenting this analysis is included in Appendix B.

Based on the subsequent traffic analysis, several additional refinements to the geometry of project intersections are recommended. These refinements would further enhance vehicle operations.

The following mitigation measures, as refined by the subsequent traffic analysis, would ensure adequate design to reduce impacts related to a hazardous design feature to a less-than-significant level.

**Mitigation Measure XV-3a:** Prior to the issuance of the first certificate of occupancy, the project shall construct the The following turn lane improvements ~~would be needed~~ at the **Prewett Ranch Drive/Project Street D access intersection:**

- Eastbound approach: one (1) left-turn lane, one (1) through-lane;
- Westbound approach: one (1) shared through/right-turn lane; and
- Southbound approach: one (1) left-turn lane, one (1) right-turn lane.

**Mitigation Measure XV-3b:** Prior to the issuance of the first certificate of occupancy, the project shall construct the The following turn lane improvements ~~would be needed~~ at the **Heidorn Ranch Road/Project Street B intersection:**

- Northbound approach: one (1) through lane; ~~one (1) left turn lane, two (2) through lanes~~
- Southbound approach: one (1) through-lane, one (1) ~~shared through/right-turn lane;~~

- Eastbound approach: ~~one (1) left-turn lane, one (1) right-turn lane~~ **(stop sign-controlled)**;
- ~~Based on HCM 2000 Synchro Sim traffic operations calculations and Transportation Research Board intersection design guidelines, the eastbound left turn from Project Street B onto Heidorn Ranch Road should have a minimum storage of 100 feet to accommodate outbound vehicle traffic.~~

**Mitigation Measure XV-3c: Prior to the issuance of the first certificate of occupancy, the project shall construct the following turn lane improvements at the Prewett Ranch Drive/Heidorn Ranch Road access intersection:**

- Northbound approach: one (1) left-turn lane, one (1) through-lane;
- Southbound approach: one (1) 200-foot left-turn pocket (for u-turns), one (1) through-lane, one (1) right-turn lane.
- Eastbound approach: one (1) left-turn lane, one (1) right-turn lane

**Significance after Mitigation:** The implementation of **Mitigation Measures XV-3a** through **3c** ~~and XV-4~~ would allow for safe vehicle operation and pedestrian access, thereby reducing the potential impacts from hazardous design features to a less-than-significant level. No further mitigation is required.

**e) Result in inadequate emergency access?**

**Less-than-Significant Impact.** As previously discussed in **Section XIII, Public Services**, the CCCFPD has established emergency access requirements for new developments that require the provision of a minimum of two emergency apparatus access points when any portion of the subdivision serves more than 25 homes. As the project would incorporate access points from both

Heidorn Ranch Road and Prewett Ranch Drive, the project would be in conformance with the emergency access requirements of the CCCFPD. Thus, impacts to emergency access would be less than significant and no mitigation is required.

**f) Result in inadequate parking capacity?**

**Less-than-Significant Impact.** According to Section 9-5.17 the City Municipal Code, new single-family residential development is required to have two (2) spaces per dwelling unit in a garage plus one guest parking space on the street within close proximity to the unit served.<sup>42</sup> With 115 proposed project dwelling units, this would equate to 230 garage spaces and 115 guest parking spaces for a total City code requirement of 345 parking spaces. The proposed project would provide 230 covered (garage) parking spaces and 120 open or street parking spaces for a total of 350 spaces. With a proposed supply of 350 spaces, the project would have a total surplus of five on-street parking spaces. Thus, impacts to parking would be less than significant and no mitigation is required.

**g) Conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?**

**Less-than-Significant Impact.** As previously discussed, existing bicycle and pedestrian facilities in the vicinity of the project site are comprised of sidewalks, pedestrian crosswalks, signalized intersections, and Class I and II bike lanes. Pedestrian sidewalks would be constructed along the entire project frontages of Prewett Ranch Drive and Heidorn Ranch Road. Pedestrian sidewalks would also be located internally along both sides of project streets. There would be a pedestrian trail connection to the Mokelumne Trail from a proposed cul-de-sac located in the northwest portion of the project site. A new bus stop would be located on east side Heidorn Ranch Road just north of the planned Prewett Ranch Drive/Heidorn Ranch Road intersection. With the provision of these facilities and with the implementation of **Mitigation Measures XV-1** and **XV-2** to ensure pedestrian safety, the project would not conflict with alternative transportation policies/plans in the City. Thus, impacts would be less than significant and no further mitigation is required.

---

<sup>42</sup> City of Antioch. (December 13, 2005). Zoning Ordinance: Title 9, Planning and Zoning, Chapter 5, Zoning, Off Street Parking Requirements, Single-family residences, Ordinance 1064-C-S.

## XVI. Utilities and Service Systems

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

**a), b) and e) Wastewater impacts?**

**Less-than-Significant Impact.** Wastewater treatment services in the project area are provided by the Delta Diablo Sanitation District (DDSD). DDSD conveys wastewater from the point of discharge to interceptor stations. The interceptor stations then convey the sewage to pump stations and the wastewater is treated at the DDSD water treatment plant, located approximately one mile northeast of the project site near the border of the City and the City of Pittsburg. Treated effluent is then discharged into the New York Slough portion of the San Joaquin River. The treatment plant has an average dry weather design capacity of 16.5 million gallons per day (mgd). In the most recent reporting period, 2008, the average dry weather flow influent to the plant was 12.9 mgd.<sup>43</sup> The plant also operates under National Pollutant Discharge Elimination System (NPDES) Permit No. CA0038547.<sup>44</sup>

Future wastewater flows emanating from the project were estimated through an assumption that each new residential unit would generate 220 gallons per day (gpd) of wastewater, an amount linked to household water consumption. With the proposed addition of 115 new single-family residential units, the project wastewater flow is anticipated to be 25,300 gpd. DDSD stated that the additional 25,300 gpd produced by the project, when added to existing volumes of incoming wastewater, would not exceed the capacity of the treatment plant.<sup>45</sup> The plant, therefore, has sufficient capacity to accommodate the project and would have a less-than-significant impact related to wastewater treatment facilities.

The City is responsible for the collection of wastewater and sewer line maintenance within the project area. According to the City, existing sewer lines terminate at the eastern end of Prewett Ranch Drive and also run south along Heidorn Ranch Road to a point approximately 250 feet south of the Heidorn Ranch Road/ Lone Tree Plaza Drive intersection.<sup>46</sup> To accommodate the increased wastewater generation from the development of the project site, the project would extend wastewater lines on Heidorn Ranch Road to provide connection to the project site. Thus, impacts to wastewater and wastewater facilities would be less than significant. No mitigation is required.

**c) Stormwater facility impacts?**

**Less-than-Significant Impact.** The project site is located within Drainage Area 56 of the Contra Costa County Flood Control and Water Protection District (FC District). The FC District's Line J stormwater collection drain currently runs along Heidorn Ranch Road (up to approximately 250 feet south of the intersection between Heidorn Ranch Road and Lone Tree Plaza Drive) and terminates

---

<sup>43</sup> Patricia Chapman, DDSD. Personal Communication, March 12, 2009.

<sup>44</sup> California Regional Water Quality Control Board, San Francisco Bay Region. (August 14, 2008). Order No. R2-2004-27, Waste Discharge Requirements and Water Quality Certification for U.S. Fish and Wildlife Service and California Department of Fish and Game.

<sup>45</sup> Patricia Chapman, DDSD. Personal Communication, March 12, 2009.

<sup>46</sup> Ken Warren, Assistant Engineer, City of Antioch. Personal Communication, February 2008.

just north of the project site. As part of the project, Line J would be extended down Heidorn Ranch Road to serve the project site. The FC District has reported that existing stormwater collection systems in the vicinity of the project site have been engineered to accommodate high density residential development.<sup>47</sup> As the project is a low-medium density residential development, the project would introduce less density to the project site than originally planned for by the FC District.

The project includes the construction of new storm water collection swales and storm water detention planters in accordance with Contra Costa County Provision C.3 guidelines, as discussed in **Section VIII, Hydrology and Water Quality**. With the incorporation of **Mitigation Measure VIII-1**, requiring the preparation of a Stormwater Control Plan in compliance with Section C.3 of the City's NPDES permit, no impacts are expected to result to the existing stormwater facilities in the City. No further mitigation is required.

#### **d) Water supply impacts?**

**Less-than-Significant Impact.** Water to the project area is provided from two sources - the Contra Costa Water District (CCWD) and directly from the San Joaquin River. The CCWD provides raw water to central and eastern Contra Costa County from the Sacramento-San Joaquin Delta. Water from the CCWD is delivered to the City through the Contra Costa Canal and is pumped from the western Delta through Rock Slough and Old River. The raw water is then transferred to the Antioch Water Treatment Plant (WTP) through pipelines. These have a maximum capacity of over 60 mgd, which is well above the maximum predicted future water demand.<sup>48</sup> To supplement water supplies, the City also has water rights to divert water directly from the San Joaquin River, for which the City has a pumping plant.

Raw water from both the CCWD and the San Joaquin River is stored in the Municipal Reservoir, which is adjacent to the Lone Tree Golf Course in southern Antioch, and treated at the WTP, which is located at 401 Putnam Street. The WTP recently underwent an expansion project that increased design capacity to 40 mgd. Additionally, the City purchases treated water from the CCWD's Randall-Bold Water Treatment Plant, which can boost total output in the distribution system to 50 mgd. After the water is treated, it is transmitted throughout the City through a distribution system of 4-inch to 30-inch pipelines. In addition to the Antioch WTP and Municipal Reservoir, the City owns and operates 12 storage reservoirs with a total combined water storage capacity of 22.5 million gallons and nine booster pumping stations.

Existing water lines are present at the eastern terminus of Prewett Ranch Drive and also run south along Heidorn Ranch Road to a point approximately 250 feet south of the Heidorn Ranch Road/Lone Tree Plaza Drive intersection. The project proposes connections to these utilities that would

---

<sup>47</sup> Jorge Hernandez, FC District. Personal Communication, April 10, 2009.

<sup>48</sup> Brown & Caldwell. (2005). *City of Antioch Urban Water Management Plan*.

extend from the eastern terminus of Prewett Ranch Drive and tie into the Heidorn Ranch Road system. Thus, with the extensions of the waterlines to bring water to the project area, impacts to water supply infrastructure would be less than significant. No mitigation is required.

In regards to physical water supply, according to the Urban Water Management Plan for the City, the current water supply sources more than adequately meet the City's projected water demands through 2025. Water demand projections were calculated using the land use designations from the General Plan. Since the proposed residential use of the project site is consistent with the General Plan, the proposed development of the project site was accounted for in the UWMP's projected water demands. Therefore, the planned water supply for the City would be able to accommodate the water demand of the project, representing a less-than-significant impact. No mitigation is required.

#### **f) Landfill impacts?**

**Less-than-Significant Impact.** Allied Waste (formerly Pleasant Hill Bayshore Disposal) provides solid waste collection, disposal, recycling, and yard waste services to the City, including the project site. Solid waste and recyclables from the City are taken to the Contra Costa Transfer and Recovery Station in Martinez. Recyclables are separated out and stored at the Transfer and Recovery Station before shipment to recycling markets. Solid waste is transferred from the Transfer and Recovery Station to the Keller Canyon Landfill in Pittsburg, which serves all of Contra Costa County.

The Contra Costa Transfer and Recovery Station is permitted to handle 1,900 tons of solid waste a day. The Keller Canyon Landfill site is 1,399 acres, 244 of which comprise the actual current disposal acreage. The landfill is permitted to accept 3,500 tons of waste per day and has a total estimated permitted capacity of approximately 75 million cubic yards with only approximately 12 million cubic yards (16 percent of total capacity) used to date.<sup>49</sup>

According to the California Integrated Waste Management Board, residential waste disposal rates for Contra Costa County are approximately 0.42 tons per resident per year (2.3 pounds per resident per day). At this rate, the project's estimated population of 356 persons would produce approximately 818 pounds of solid waste per day. However, the City has implemented several waste diversion programs (i.e., recycling, composting, public education, etc.) in order to encourage the diversion of solid waste from landfills. These programs have lead to a diversion rate of approximately 55 percent.<sup>50</sup> With or without successful diversion programs, the percentage of available capacity

---

<sup>49</sup> California Integrated Waste Management Board. Solid Waste Information System. Accessed March 31, 2009. <<http://www.ciwmb.ca.gov/SWIS/>>.

<sup>50</sup> California Integrated Waste Management Board. Solid Waste Information System. Accessed March 31, 2009. <<http://www.ciwmb.ca.gov/SWIS/>>.

remaining at the Keller Canyon Landfill site would be sufficient to serve the project's solid waste disposal needs. Thus, impacts related to solid waste and landfill capacity would be less than significant. No mitigation is required.

**g) Compliance with solid waste regulations?**

**Less-than-Significant Impact.** As the project site is vacant, no demolition of buildings, structures, or paved/hardscape areas would be required. However, as discussed above, the project's estimated population would produce approximately 818 pounds of solid waste per day.

The California Solid Waste Reuse and Recycling Access Act of 1991 (Public Resources Code Sections 42900 through 42911) requires that any development project for which an application for a building permit is submitted shall include adequate, accessible areas for collecting and loading recyclable materials.

California State Law Assembly Bill 939 (AB 939), known as the Integrated Waste Management Act, was passed to address the increases in the state waste stream and decrease in landfill capacity. As a result, the current California Integrated Waste Management Board (CIWMB) was established. AB 939 mandates a reduction of waste being disposed; jurisdictions were required to meet diversion goals of 25 percent by 1995 and 50 percent by the year 2000. After the year 2000, jurisdictions must maintain a diversion rate of 50 percent.

Title 6, Chapter 3 of the Antioch Municipal Code sets forth regulations regarding the collection of solid waste and recyclable materials. The regulations mandate residential participation in the City's recycling program. During the plan check process, the City will review project plans to ensure that residential units have adequate space for recycling activities. No mitigation is required.

**XVII. Mandatory Findings of Significance**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Have the potential to degrade quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**a) Have the potential to degrade quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?**

**Less-than-Significant Impact.** Mitigation measures are incorporated into the project to adequately protect habitat, wildlife populations, and plant and animal communities. There are no

known cultural resources on the project site and mitigation measures are incorporated to adequately protect any cultural resources uncovered during project construction. Therefore, the project would not have the potential to degrade the quality of the environment; affect habitat, fish, and wildlife species; or cultural resources.

**b) Have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?**

**Less-than-Significant Impact.** The proposed residential use of the site is consistent with the City’s planning policies and land use projections. These land uses have already been considered as part of overall growth in the City (including consideration of increases in traffic, noise, changes to air quality, etc.) as part of the General Plan and General Plan EIR. Therefore the project would not result in any cumulatively considerable impacts that were not already identified in the General Plan EIR.

**c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?**

**Less-than-Significant Impact.** The implementation of the mitigation measures identified in this Initial Study would reduce potential impacts to a less-than-significant level and the project would not result in impacts that would cause substantial adverse effects on human beings, either directly or indirectly.

## List of Appendices

The following studies and reports were prepared specifically for the project and are included as appendices to this mitigated negative declaration.

- Appendix A:** CirclePoint (2010). *CEQA Guidelines Amendments. Appendix G – Environmental Checklist.*
- Appendix B:** Pacific Biology. (2009). *Tierra Villas Project Biological Evaluation Report.*
- Appendix C:** PRA Group, Inc. (2007). *Geotechnical Study for Proposed Tierra Villas Single-Family Home Subdivision.*
- Appendix D:** Aqua Science Engineers, Inc. (2003). *Phase I Environmental Site Assessment: 5220-5300 Heidorn Ranch Road, Antioch, California.*
- Appendix E:** Bellecci and Associates (2008). *Stormwater Control Plan: Tierra Villas.*
- Appendix F:** Illingworth & Rodkin, Inc. (2009) *Tierra Villas Residential Project Environmental Noise Assessment.*
- Appendix G:** Omni-Means, Ltd. (2009). *Tierra Villas Subdivision Project Traffic Impact Analysis, and addendum dated May 20, 2011.*

## All Sources Consulted

- Abrams Associates. (March 2008). *Traffic Impact Analysis, Casa Bella Apartments, City of Brentwood*.
- Brown & Caldwell. (2005). *City of Antioch Urban Water Management Plan*.
- California Air Resources Board. (June 2008). *Climate Change Draft Scoping Plan*.
- California Assembly Bill 32, California Global Warming Solutions Act of 2006. (2006).
- California Department of Conservation. (June 2007). Contra Costa County Important Farmland 2006. <<ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2006/con06.pdf>>.
- California Department of Conservation. (June 2009). Contra Costa County Important Farmland 2008. <<ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2008/con08.pdf>>.
- California Department of Forest and Fire Protection, Fire and Resource Assessment Program. Contra Costa County Fire Hazard Severity Zones in LRA. Accessed April 21, 2009. <[http://frap.cdf.ca.gov/webdata/maps/contra\\_costa/fhszl06\\_1\\_map.7.pdf](http://frap.cdf.ca.gov/webdata/maps/contra_costa/fhszl06_1_map.7.pdf)>.
- California Health and Safety Code, Section 38505. (January 2009).
- California Integrated Waste Management Board. Solid Waste Information System. Accessed March 31, 2009. <<http://www.ciwmb.ca.gov/SWIS/>>.
- California Public Resources Code Section 21095. (January 2009).
- California Regional Water Quality Control Board, San Francisco Bay Region. (August 14, 2008). Order No. R2-2004-27, Waste Discharge Requirements and Water Quality Certification for U.S. Fish and Wildlife Service and California Department of Fish and Game.
- CirclePoint, (January 2009). *Roddy Ranch Project Draft EIR*.
- City of Antioch. (July 2003). *City of Antioch General Plan Update EIR*.
- City of Antioch. (November 2003). *City of Antioch General Plan*.
- City of Antioch. (December 13, 2005). Zoning Ordinance: Title 9, Planning and Zoning, Chapter 5, Zoning, Off Street Parking Requirements, Single-family residences, Ordinance 1064-C-S.
- City of Antioch. (2008). *Antioch Municipal Code*.
- Department of Finance, Demographic Research: City/County Population Estimates for January 2008. Accessed April 16, 2009. <<http://www.dof.ca.gov/Research/Research.php>>.
- East Bay Regional Park District. (October 16, 2007). *Financing Regional Parks and Open Space*.

East Contra Costa County Habitat Conservation Plan Association. (October 2006). *The Final East Contra Costa County Habitat Conservation Plan/Natural Conservation Plan*.

Federal Emergency Management Agency. (July 16, 1987). *Federal Insurance Rate Map No.0600250335B, Contra Costa County*.

Hugh Henderson, ECCFPD. Personal Communication, March 3, 2009.

Institute of Transportation Engineers (ITE), Trip Generation. (2008). 8th Edition, Single-Family Detached Housing (land use #210).

Isaacson, Wood and Associates. (2008). *Tierra Villas Preliminary Landscape Plan*.

James Hyde, Chief of Police; and Allan Cantando, Captain, Antioch Police Department. Personal Communication, March 3, 2009.

Jorge Hernandez, CCCFCWPD. Personal Communication, April 10, 2009.

Ken Warren, Assistant Engineer, City of Antioch. Personal Communication, February 2008.

Linda Chavez, Senior Planner, EBRPD, Personal Communication. August 11, 2008.

LSA Associates, Inc. (November 2008). *Aviano Adult Community Project Draft EIR*.

Omni-Means, Ltd. (2009). *Tierra Villas Residential Subdivision Traffic Impact Analysis **and addendum dated May 20, 2011***.

Patricia Chapman, DDSD. Personal Communication, March 12, 2009.

Soil Interpretation Help Sheet, Guide for Determining Soil Permeability. Accessed July 13, 2009. <<http://dese.mo.gov/divcareered/AG/CDE/SoilsInterpretation.pdf>>.

Ted Leach, Fire Prevention Technician, CCFPD. Personal Communication, March 5, 2009; July 30, 2009.

Wayne Reeves, LUHSD; and Gail Crockett, BUSD. Personal Communication, June 2008.

**Figure 1 – Project Location**

**Figure 2a – Project Site Map: Prewett Ranch Drive Alternative A**

**Figure 2B – Project Site Map: Prewett Ranch Drive Alternative B**

**Figure 3a – Typical Elevations – Plan 1**

**Figure 3b – Typical Elevations: Plan 2**

**Figure 3C – Typical Elevations – Plan 2 Alt**

**Figure 3d – Typical Elevations – Plan 3**

Figure 3e – Typical Elevations – Plan 4

**Figure 4a – Existing Conditions Photographs**

**Figure 4b – Existing Conditions Photographs**

**Figure 5 – Conceptual Landscape Plan**

**Figure 6 – Construction Phasing Plan**

**Figure 7 – Proposed Sound Barrier**